# Canadian Railway and Marine World

# GENERAL INDEX
## FOR 1920

**ACTON BURROWS, PROPRIETOR**
**70 BOND STREET, TORONTO, CANADA**

**Items marked with an asterisk are accompanied by maps, portraits or other illustrations.**

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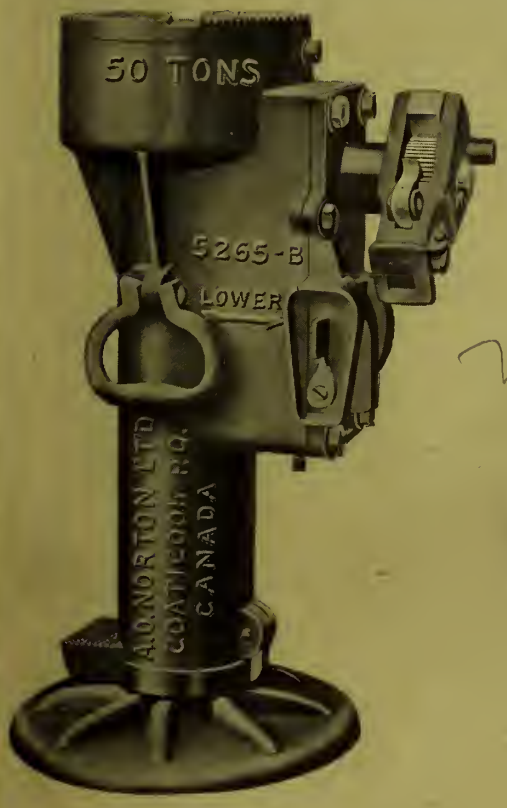


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*Pioneer and Leader in the Ball Bearing Jack Industry*

**Coaticook, Prov. Quebec, Canada**

# The Safety Car Motor

## Westinghouse No. 506

25 Horse Power, Box Frame, Commutating Pole, for 24- and 26-inch wheels.
Supplied with either Sleeve or Ball Bearings.

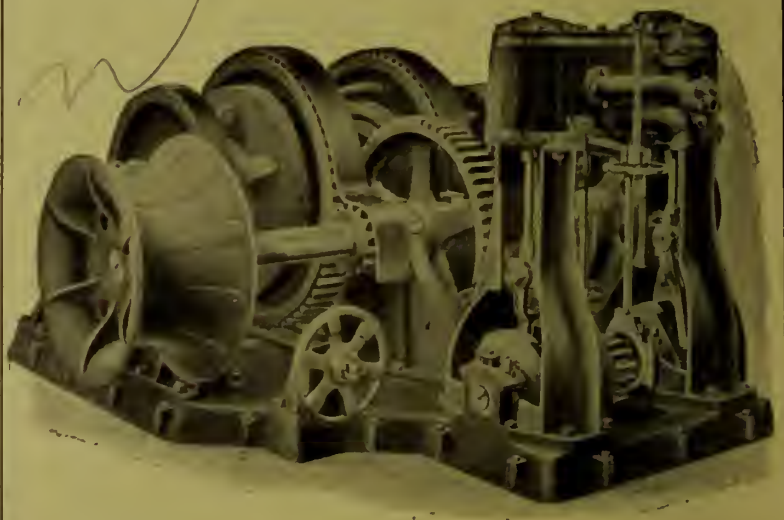
Owners of Westinghouse Apparatus are invited to make use of our Service Dept. Repair Shops, where repair work will receive prompt and efficient attention. Repair shops are located at:—
MONTREAL—10 St Sophie Lane. TORONTO—16 Temperance St.
WINNIPEG—158 Portage Ave. E. CALGARY—328 9th Ave. W.

## Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Bank of Hamilton Bldg. MONTREAL, 285 Beaver Hall Hill. OTTAWA, Ahearn & Soper, Ltd.
HALIFAX, 105 Hollis St. FT. WILLIAM, Cuthbertson Block. WINNIPEG, 158 Portage Ave. E.
CALGARY, Canada Life Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.

# MARINE MACHINERY

STEEL and IRON CASTINGS
CARGO WINCHES, STEERING
ENGINES and CAPSTAN ENGINES



The "Hyde" Spur Geared Steam Windlass.

**PROPELLER WHEELS**
In any size and any material

*Manufactured by*

## The WM. KENNEDY & SONS, Limited
OWEN SOUND, Ont.

ESTABLISHED 1860

## A Good Dock Machine for River, Canal, Lake or Ocean Traffic

It eliminates most of the laborers, handles the cargo rapidly, switches the cars, and its cost is low compared to handling cargo with labor. These are the results obtained with Brownhoist Cranes on many docks throughout the world. You will find Brownhoists in great numbers, not only in U.S., but also in Canada, Mexico, South America, France, Italy, Russia, Japan, Africa and Northern Europe.

The crane with Brownhoist Bucket handles anywhere from 50 to 100 tons per hour of coal, ore, stone, sand and other bulk materials from or to boat, dock or cars. This hourly capacity depends upon the dock conditions.

Or you can place a bottom block with hook on the crane and handle miscellaneous cargo in sling loads. No matter whether the cargo consists of boxes, crates, barrels, bags, bars, sheets, castings or lumber, the Brownhoist will do the work.

**Important to everyone interested in docks.**

Brownhoist engineers have studied freight and cargo handling for years. Their success in handling ore and coal is known in engineering, manufacturing and shipping circles. And now they have achieved big results in handling miscellaneous cargo. For instance, take the American Terminals in France, all the French ports, and the Galveston Wharf Company's docks in Texas,—each one a different proposition but each a big success. If you wish to see these installations, write for catalog K. It shows them and others, too.

## Brownhoist

Dock Cranes consist of various types and capacities. What type and size crane to use depends upon the dock and shipping conditions. Our many years' experience on dock handling machinery enables us to give you good advice as to the best equipment for your propositions. Send your plans, or tell us what you want to do. We can be of valuable service to you.

# The Brown Hoisting Machinery Company

**40 Years in Crane Business** — **Cleveland, Ohio, U.S.A**

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists

Branch Offices in New York, Pittsburgh, Chicago and San Francisco
European Rep., H. E. Hayes, 12 Rue de Phalsbourg, Paris

We will be pleased to offer suggestions covering your requirements. WRITE US.

**PEACOCK BROTHERS**
**MONTREAL** *Sole Agents*

# CRANES
FOR ALL PURPOSES

ILLUSTRATION SHOWS
**Electric**
**Dockside Cranes**
WITH
IMPROVED FREE
BARREL SYSTEM
AND
HORIZONTAL LUFFING
ARRANGEMENT

MANUFACTURED BY
**STOTHERT & PITT, Limited**
**BATH - ENGLAND**

# The Yorkshire Copper Works, Ltd.
## Leeds

*Have Supplied Tubes for the following Battleships, viz.:—*

"Queen Elizabeth," "Warspite," "Valiant," "Barham," "Malaya," "Lion," "Tiger," "Invincible," "Royal Sovereign," "Repulse," "Ramillies," "Resolution," "Revenge," "Benbow," "Emperor of India," "Iron Duke," "Marlborough," "King George V," "Centurion," "Ajax," "Audacious," "Orion," "Thunderer," "Monarch," "Conqueror," "Queen Mary," "Princess Royal," "New Zealand," "Australia," etc., etc.

# COPPER TUBES BRASS

FOR SHIPS, LOCOMOTIVES, MOTOR CARS, POWER STATIONS, HEATERS, REFRIGERATORS, &c., &c.

*(Sole Makers of "BEMAL" Brass Condenser Tubes)*

**Canadian Representatives:—Peacock Brothers, 285 Beaver Hall Hill, MONTREAL**

**Codes: "A.B.C." 4th & 5th Edns.; Liebers'; Scott; Western Union; Marconi International.**

# WEIR

MAIN FEED PUMPS

DONKEY FEED PUMPS

CIRCULATING PUMPS

AIR PUMPS

CONDENSERS

DISTILLERS

EVAPORATORS

FEED HEATERS

TURBINE PUMPS

APPLIED TO UPWARDS OF

**100,000,000**

HORSE POWER

MANUFACTURED IN CANADA
UNDER LICENSE

ORIGINALITY IN DESIGN
ACCURACY IN WORKMANSHIP
QUALITY IN MATERIALS
EFFICIENCY IN PERFORMANCE

*The installing of WEIR equipment ensures continuity of operation and lowest cost. It is developed on sound engineering laws, according to the best engineering practice.*

SPECIFICATIONS AND QUOTATIONS FOR COMPLETE MARINE AUXILIARY EQUIPMENT GLADLY SUBMITTED

**PUMPS FOR LAND SERVICE**

WRITE FOR LIST OF CANADIAN USERS

**G. & J. WEIR, Limited**
**SCOTLAND**

*SOLE AGENTS:*
**PEACOCK BROTHERS**
**MONTREAL**

# DOMINION FOUNDRIES AND STEEL LIMITED

## When you specify "Dominion"

you leave nothing to chance. "Dominion" represents the utmost in Quality and Service.

**STEEL PRODUCTS**
Open Hearth, Basic and Acid, Electric and Alloy Steels.

**CASTINGS**
For Ships, Railways, Rolling Mills, Gears, Machinery and Ingots to 35 tons.

**RAILWAY SPECIALTIES**
Penn Couplers, Bolsters, Truck Side Frames, Draft Gear.

**FORGING AND BILLETS**
Heavy Ship Forgings, Locomotive and Car Axles, Miscellaneous Forgings.

**PLATES**
Plates and Heavy Sheets to 30 inches wide, Soft and High Carbon Automobile Plates and Sheets.

**AGRICULTURAL STEEL**
Soft Center and Solid Plow Steel, Harrow Discs, Shovel Steel, Cultivator Blades.

## Dominion Foundries & Steel Limited

Hamilton - Ontario

# GENERAL RAILWAY SIGNAL COMPANY
## OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track.

A-C. and D-C. Automatic Block Signals for Double Track

## Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signalling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

**Head Office and Works**
**LACHINE, QUEBEC**

# Joliet Railway Supply Company

**NORTHWESTERN MALLEABLE IRON CO., Proprietor**

---

*Manufacturers of*

The "Huntoon" Brake Beam.

The "Huntoon" Economy Brake Beam with Reversible Strut.

Truss Rod Brake Beams.

The "Huntoon" Truck Bolster.

Pilcher Trussed Steel Side Frame.

"Joliet" Journal Boxes.

Peerless, Perry and Burry Side Bearings.

---

**GENERAL OFFICES:**
**Railway Exchange Bldg., Chicago**

**WORKS:**
**Princeton Ave., Chicago**

**CANADIAN REPRESENTATIVES:**

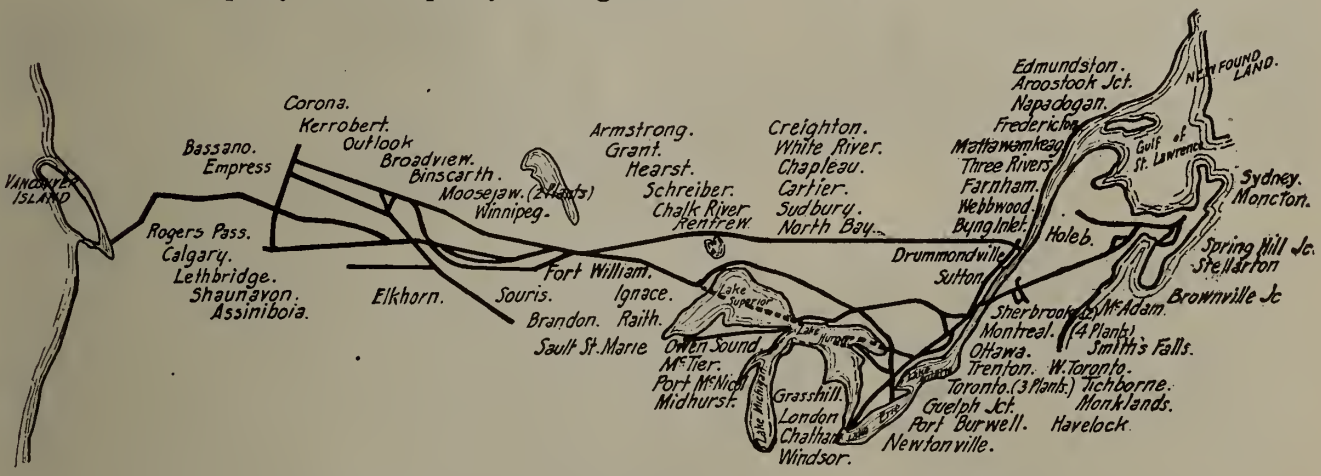
**Moore, Cameron & Hill, Limited**

284 Beaver Hall Hill, Montreal

431 McIntyre Block, Winnipeg

# Nothing Succeeds Like Success

We have now built over eighty Locomotive Coaling Stations and the Map below shows how they are spread all over Canada. There are few Locomotive Coaling Stations in Canada that have not a "W & W" nameplate on them, and when you understand that we have twenty years experience in the construction of Coaling Stations it will be obvious why we obtain so many repeat orders. With our experience we understand just what kind of machinery is required for this severe class of work, and can practically fit up any size or capacity Coaling Station from our stock.




Complete erection from foundations up and machinery manufactured and installed. We have an Engineering Department which is at all times ready to co-operate with you. Do you wish Designs, Details and Estimates, we will be only too glad to furnish these on request.

# Williams & Wilson, Limited

## 84 Inspector Street, MONTREAL

# Fairbanks Dial Indicator

Direct Reading
Gross or Net

Full Capacity

No Loose Weights
No Calculation

May be applied to any existing platform scale.

The Fairbanks Dial Indicator reduces the weighing error and the cost of weighing.

Under present conditions, both of these are more important than ever before.

## The Canadian Fairbanks-Morse Co., Limited

*"Canada's Departmental House for Mechanical Goods"*

St. John, Quebec, Montreal, Ottawa, Toronto, Windsor, Hamilton,
Winnipeg, Saskatoon, Calgary, Vancouver. Victoria.

# CANADIAN ALLIS-CHALMERS, LIMITED

ENGINEERS - IRON & BRASSFOUNDERS - BOILERMAKERS - SHIPBUILDERS

Vertical, Triple and Compound

## Marine Engines

Capacities from 200 I.H.P. to 3,500 I.H.P.

### Deck Machinery and Ship Auxiliaries

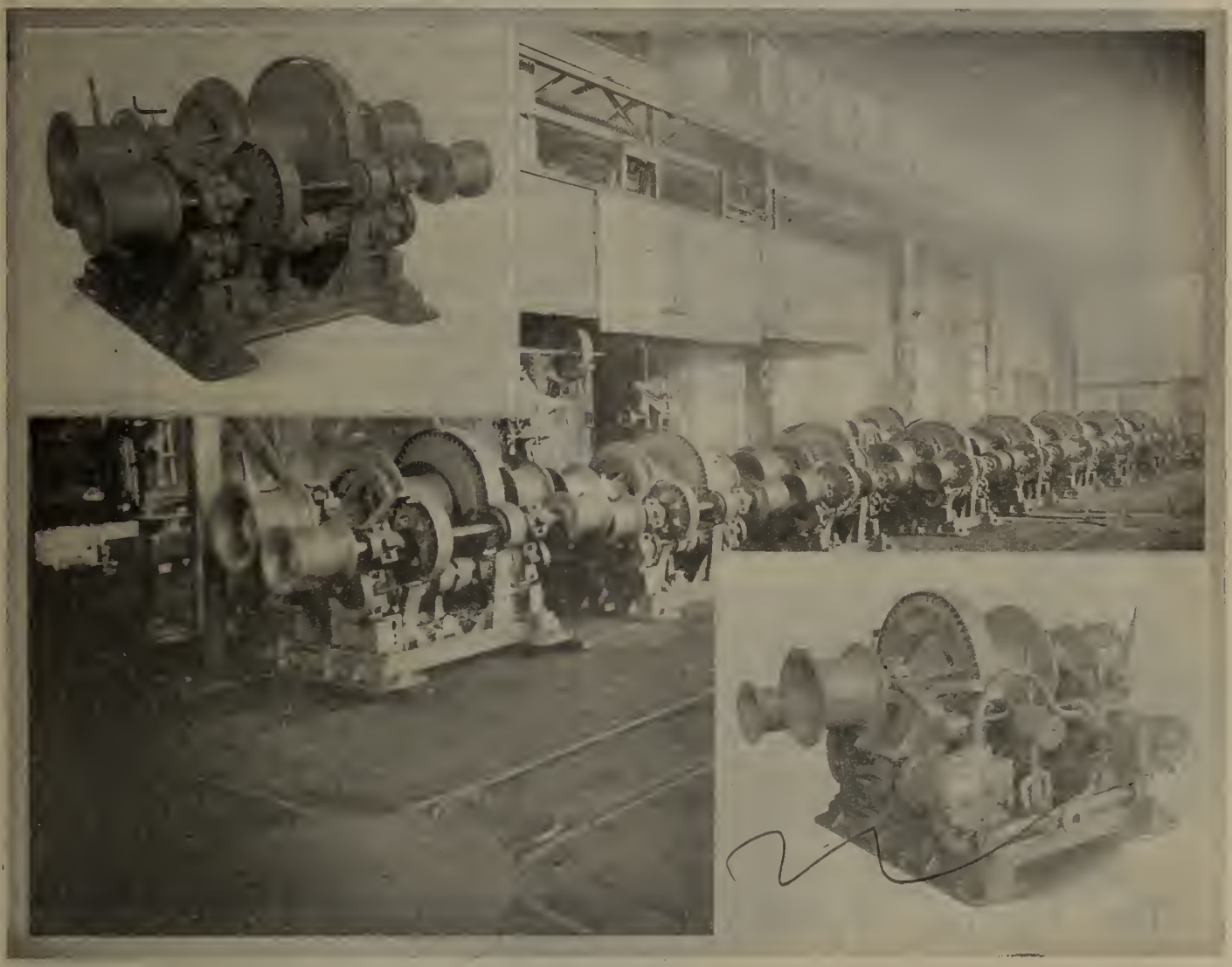
## Condensers — Marine Boilers — Steering Engines

Independent or "Built-in" types.

"Scotch" or Water Tube, any size, delivered at Tidewater.

Automatic Combined Hand & Steam & Screw Gear Types with Telemotor.

### Edwards Air Pumps — Feed and Bilge Pumps — Circulating Pumps



The eight { 4 Right Hand / 4 Left Hand } 8¼ x 10 Cargo Winches shown in above cut may be shipped immediately from our Montreal Works.

# CANADIAN ALLIS-CHALMERS, LIMITED

Head Office, :-: Toronto

Branch Offices: Montreal, Quebec, Halifax, Sydney, St. John, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Nelson, Vancouver, and Victoria.

# Garlock High Pressure Piston Rod Packing

Style No. 200

Is built up on a core consisting of several flattened tubes.

The tubes are braided from the highest grade of asbestos yarn, and are cemented together with the best rubber friction.

The tubes are cemented only on the outside, therefore the packing is lighter per linear foot than other types of high pressure packing.

In service the tubes open under pressure and expand the packing against the piston rod.

The core of flattened tubes is backed with a cushion of high-grade rubber, so compounded as to retain its resiliency under heat.

The tube-core and rubber cushion are covered with cloth woven from the highest grade of long fibre asbestos.

Our high pressure packing is not merely smeared on the outside with graphite and grease.

Every fibre of it is saturated with a specially prepared lubricant, which does not affect the rubber cushion or friction.

The outside of the packing is coated with the best grade of floating stock graphite.

The best materials we can buy are used in the manufacture of our high pressure packing.

It is built up in rectangular form and uniform shape, and exact sizes are thereby obtained.

Asbestos packing, rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

Our high pressure packing is made by experts who have done nothing else for years but make that one type of packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

Our packings are sold at net weights; weights of cartons or boxes are not included.

Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

## The Garlock Packing Company, Hamilton, Ontario

Branches:

Montreal, Quebec.....409 Shaughnessy Bldg.
Toronto, Ontario.....Continental Life Bldg.
Winnipeg, Manitoba.....Galt Building
Calgary, Alberta.....211 8th Ave. W.

# ECONOMY

## Cast Steel

# DRAFT ARMS

ECONOMIZE—get more service out of those old cars with weak center sill construction. They will stand up in service and yield many additional revenue-producing miles if they are strengthened with *Economy* cast steel draft arms. Economize now.

INTERNATIONAL EQUIPMENT CO., Ltd.
MONTREAL, QUE.

## American Steel Foundries

**NEW YORK** **CHICAGO** **ST. LOUIS**

SAVE COAL by keeping the heating surfaces of your boilers free from scale. One-sixteenth of an inch of scale increases your coal consumption 10.8%.

SAVE WATER AND COAL by reducing the number of times it is necessary to open blow-off cocks to keep the concentration below the foaming point. You are blowing out one pound of coal each second a one and one-half inch blow-off cock is held open.

SAVE BOILER REPAIRS by reducing the amount of work made necessary by leaks caused by scale in your scale forming water districts, and unnecessary expansion and contraction caused by frequent washing and water changes in your foaming districts.

These savings can be effected by adopting the Dearborn System of Water Treatment. The cost is fifty per cent less than any other system now in use.

**Dearborn Chemical Company of Canada, Limited**

General Offices and Factory, Toronto

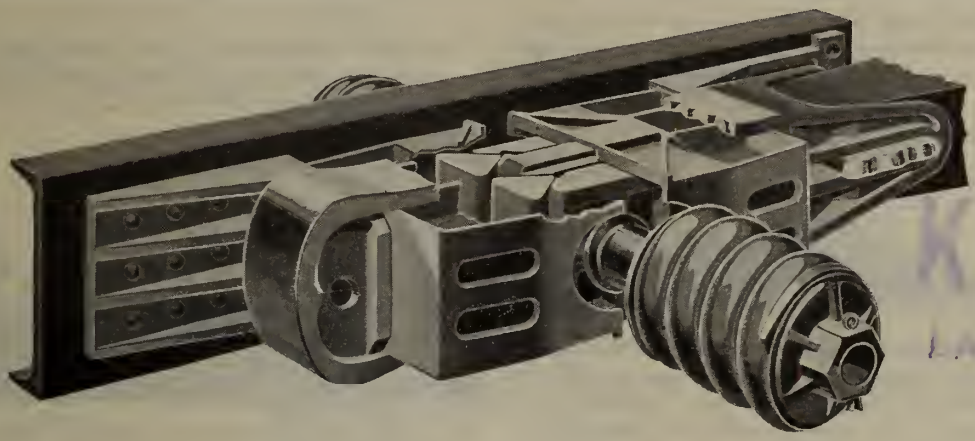
Branch Offices: Montreal, 263 James St.; Winnipeg, 413 McIntyre Block

# WEBB. G. KRAUSER

RAILWAY SUPPLIES

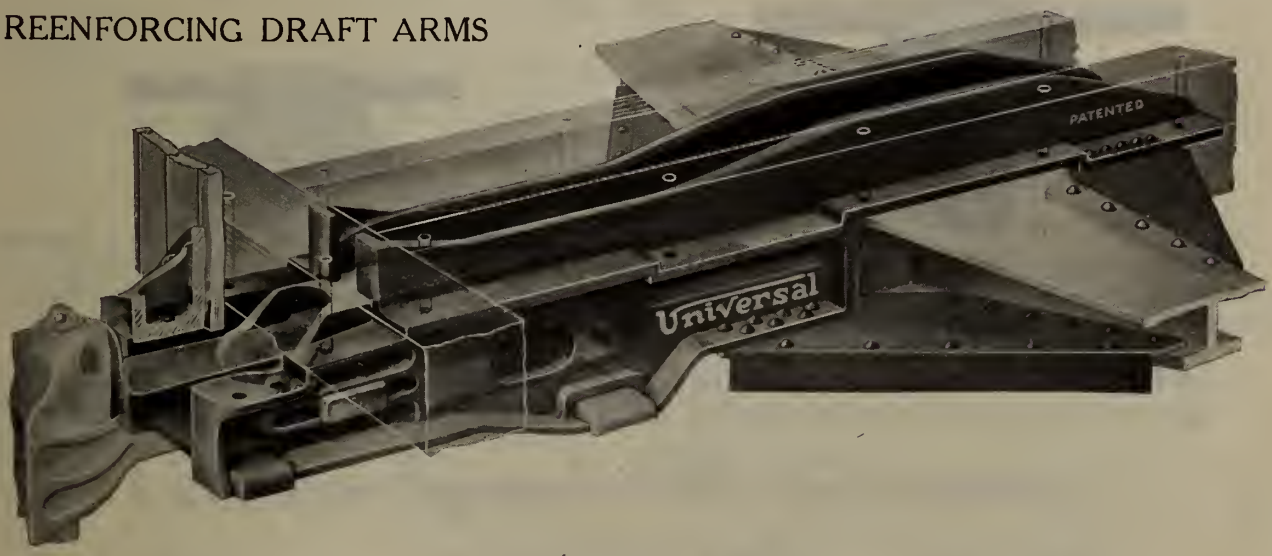
MADE IN CANADA

## CARDWELL FRICTION DRAFT GEAR



*Universal* ATTACHMENTS

REENFORCING DRAFT ARMS




CAST STEEL YOKES

TANDEM SPRING DRAFT RIGGING

TWIN SPRING DRAFT RIGGING

DRAFT LUGS or PLATES

FRICTIONLESS SIDE BEARINGS

**627 Transportation Building, MONTREAL**

# Drew Overhead Material

This feed-in-Screw Clamp Trolley Ear is made from bronze with horizontal feeder lug to accommodate 0000 size feeder wire. This can be furnished tinned if so desired.

This Screw Clamp Trolley Ear is supplied both in malleable where the ears are galvanized by the hot dip process or in bronze. It can accommodate grooved or Figure Eight to 000 size.

This Samson Splicing Ear is installed without special tools, stays upright in the span, cannot make a hard spot in the line and is non-arcing. Repeated service records show that the Samson will outwear the wire in which it is installed under the most severe operating conditions.

This Samson Tunnel approach is for taking trolley into barns, under bridges, elevations or through tunnels where there is a minimum clearance. It is good practice to place the insulated hangers about six feet apart. The tapered "V" shaped lips of the Samson Approach give smooth under-run.

This hanger has a galvanized Clevis with ⅜ x 1½ in. machine bolt, and is for use in connection with the Samson Tunnel Approach shown above.

This hanger is used when the trolley is supported in shallow wooden trough or like places such as mines or structures with low rods. Its height has been reduced to a minimum.

**All Drew materials are guaranteed to be free from defects in material and workmanship, and to do the work for which they are designed in a thoroughly satisfactory manner.**

Our nearest house will supply you with descriptive literature on request.

## Northern Electric Company
LIMITED

| | | |
|---|---|---|
| MONTREAL | TORONTO | REGINA |
| HALIFAX | LONDON | CALGARY |
| OTTAWA | WINNIPEG | VANCOUVER |

# Yes! A Good Name Means Much!

Galena

The name *"Galena"* is synonymous with *"the Best"* in railway lubrication the world over. Galena Oils carry a good name—a reputation of worthiness and dependability. A reputation built on a half century's faithful and efficient performance.

## What the name "Galena" means to you

To the customer the Galena name is a guarantee of quality—an assurance of uniform goodness, of efficiency and economy. Galena Oils have always delivered a maximum mileage and demonstrated their ability to stand up under the most severe service conditions. The name *"Galena"* is a seal of safety and satisfaction.

LAST ADVERTISEMENT ENGINEERS

## What the name "Galena" means to us

To this company the word *"Galena"* is a title that is guarded most jealously. A product must be worthy the name before it can carry it. Every care and precaution is taken that each Galena product is up to Galena specifications, a governing principle of this company from which the slightest deviation will not be permitted.

*The name "GALENA" is our Bond and your Security.*

---

## Galena-Signal Oil Company

**Works - - - - - Toronto, Ont.**

**Stocks at Ft. William, Winnipeg, Vancouver.**

**Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg., Montreal.**

# Right Here, for Contract Rail Material

Type X inverted contact rail insulator for use on heavy cranes or railways

For light or heavy shipyard or industrial cranes, industrial haulage system and electric railways. A complete line of insulators, standards and contact rail shoes that will meet practically all conditions.

Being specialists in this line we are also prepared to recommend and supply material of special design to meet any complex conditions you may have.

Write for data sheets.

Type LV contact rail insulator designed for railway and heavy haulage or crane work

Typical Keystone Contact Rail Shoe having a reversible contact member thereby enabling its use for over-contact or under-contact rails

Type I contact rail insulators with off-set base for bolting directly to ties

Type SP contact rail insulators specially designed for industrial service. The insulator rests on the ties, and is held in place with two iron clamps.

**Electric Service Supplies Co.**

*MANUFACTURERS*

PHILADELPHIA 17th and Cambria Sts. NEW YORK 50 Church St. CHICAGO Monadnock Bldg.

**Lyman Tube & Supply Co., Ltd.**

*CANADIAN DISTRIBUTORS*

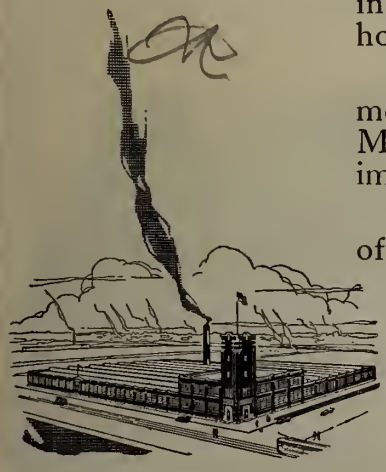
MONTREAL Lyman Tube Bldg. WINNIPEG 703 Confederation Life Bldg. TORONTO 33 Melinda Street

# Confidence

**in our Government and in the future of our railroads expressed in the building of the new Mudge motor car plant in Chicago.**

**NOW F. O. B.**

Baltimore & Ohio
B. & O. Chicago Term
Belt of Chicago
Burlington Route
Ches. & Ohio of Ind.
Chicago & Alton
Chicago & East. Ill.
Chicago & Ill. West
Chicago & No. West.
Chicago & West. Ind.
Chicago Gt. West
Chicago, Ind. & Lv.
Chicago Junction
Ch. L. Sh. & So. B. (El)
Chicago, Mil. & St. P.
Chic. Rock Isl. & Pac.
Chicago T. H. & So. E.
Clev. Cin. Ch. & St. L.
Erie
Grand Trunk W. L.
Illinois Central
Manufacturers Jn.
Michigan Central
Minn. St. P. & S. Ste. M
New York Central
N. Y. Chicago & St. L.
Penna. Lines
Pere Marquette
Santa Fe
Wabash



We of the Railway Supply and Equipment Fraternity —We who invest our all in the building of businesses solely to supply your industry—We are more dependent upon you for our sustenance than he who hangs his hat and signs your payroll.

You may say then that this was a bad time for us to build and equip a modern factory.

Perhaps so, for we, too, have been beset by labor troubles. They have taxed our ingenuity and our patience. But now we are ready.

And this is what we considered:

Your labor comes at a long price and goes at the end of a short day. You must therefore have labor saving devices in quantity. You are planning to crowd every working hour with production.

That is why we built our factory now. Mudge railroad motor cars can be furnished promptly, and in quantity. Mudge spare parts for the 7,000 cars in daily service will have immediate shipment so that all your cars may be kept going.

We have prepared ourselves to serve you in this time of coming necessity as you have never been served before.

## Mudge & Company

**Manufacturers—Railroad Equipment**

**Chicago**

FACTORY:
4425 West 16th Street, Chicago

BRANCH OFFICES:
New York St. Louis San Francisco

GENERAL OFFICES:
443 Railway Exchange, Chicago

# TRACKWORK

FOR STEAM AND ELECTRIC · RAILWAYS

Switches, Mates, Frogs, Crosses, Diamonds, Rail Braces, Switchstands, Etc.

COMPLETE Built - up Hard - Centre Manganese-Steel INTERSECTIONS

of any size and in any rail section.

*Manufacturers of Balkwill Articulated Manganese-Steel Crossings.*

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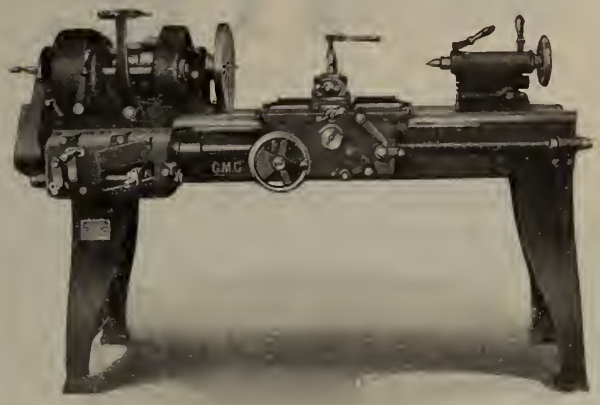
CANADIAN STEEL FOUNDRIES LIMITED

Transportation Building

MONTREAL.

C.M.C.
THE MARK OF MERIT



# ENGINE LATHES
## GREAT and SMALL

Are of the same standard of quality—the best. Our 36″ Engine Lathe shown at the bottom of this advertisement is built with the same care and thoroughness as the fine 14″ tool maker's lathe illustrated above. The smaller lathe has the same proportionate strength and rigidity as the big brother.

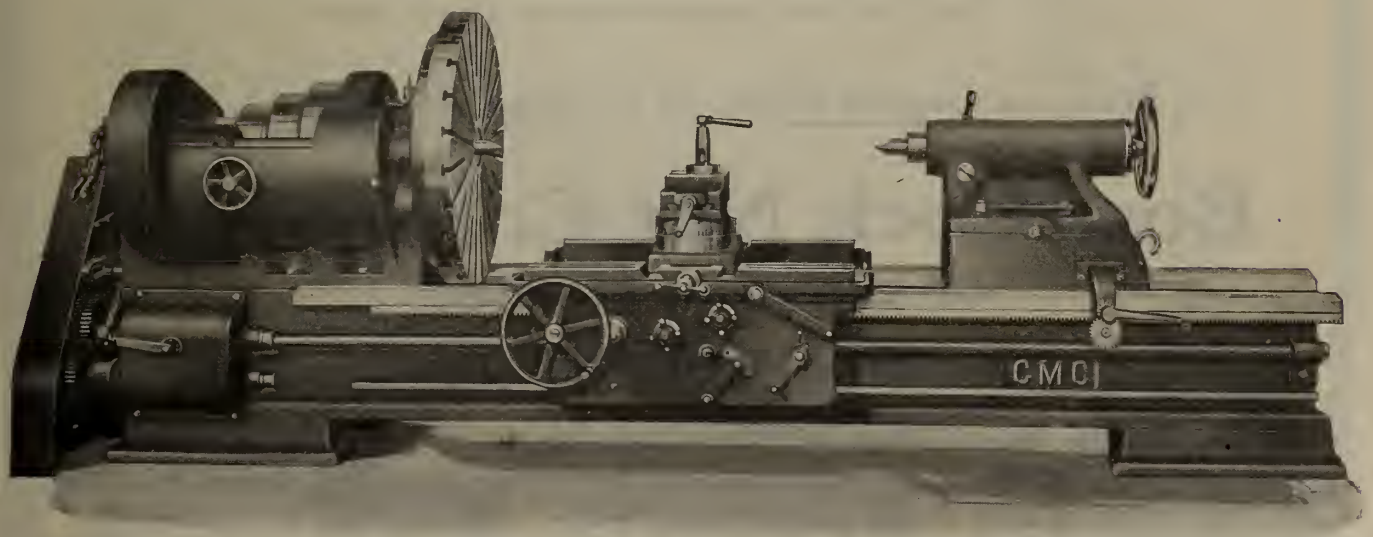
Proper design, good material, skilled workmanship and rigid inspection result in that standard of perfection synonymous with our trademark C.M.C.

Intermediate sizes are of equal quality and share in the enviable reputation.

CANADA MACHINERY CORPORATION, LIMITED, GALT, ONTARIO

Toronto Office and Warerooms, Brock Avenue Subway.

KILL
LAST AD.



# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***

Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

## Boss Lock Nut Company
### of Canada, Limited

*Write for latest catalogue.*

HEAD OFFICE:
**263 St. James St.**
**MONTREAL, Que.**

**McIntyre Block**
**Winnipeg, Man.**

"60 Vessels"

Canada's Commerce Carriers

"Total Tonnage 325,000"

# Canadian Government Merchant Marine, Limited

Now Afloat:

| | | |
|---|---|---|
| "CANADIAN VOYAGEUR" | "CANADIAN TROOPER" | "CANADIAN SEIGNEUR" |
| "CANADIAN PIONEER" | "CANADIAN SAILOR" | "CANADIAN RAIDER" |
| "CANADIAN WARRIOR" | "CANADIAN SPINNER" | "CANADIAN RANCHER" |
| "CANADIAN RECRUIT" | "CANADIAN GUNNER" | "CANADIAN NAVIGATOR" |
| "CANADIAN SETTLER" | "CANADIAN TRADER" | "CANADIAN TRAPPER" |
| "CANADIAN RANGER" | "CANADIAN SIGNALLER" | "CANADIAN AVIATOR" |
| "CANADIAN VOLUNTEER" | "CANADIAN MILLER" | "CANADIAN SOWER" |
| | "CANADIAN ADVENTURER" | |

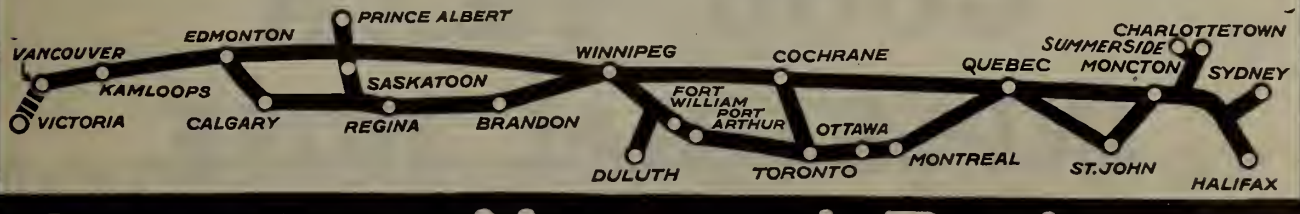
Weekly Freight Service to United Kingdom from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Fortnightly Freight Service to West Indies & Cuba rom Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to Australia and New Zealand from Vancouver.

**For further information apply to any Canadian Railway Agent or**

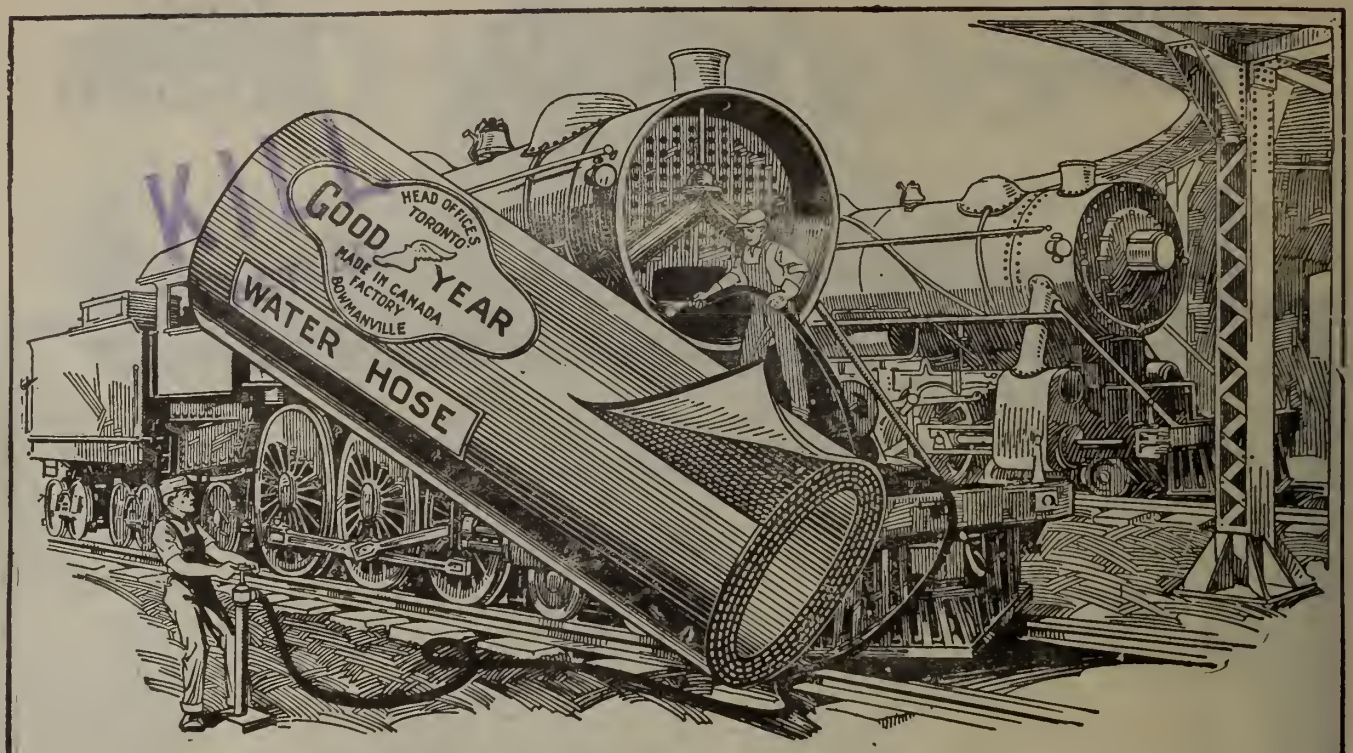
D. O. WOOD,
Traffic Manager, Exp. & Imp. Dept.,
Canadian National Rys.,
Toronto, Ont.

GEORGE E. BUNTING,
Ontario Freight Agent,
Room 704 Royal Bank Bldg.,
Toronto, Ont.

W. A. CUNNINGHAM,
Exp. & Imp. Freight Agt.,
230 St. James Street,
Montreal, Que.




# Canadian National Railways




# This Cover Reduces Costs *on Industrial Water Hose*

We never heard of industrial water hose bursting because of internal pressure. Any fairly good water hose will stand all the pressure it will ever get in industrial use.

But we have seen and heard of thousands of feet of water hose which had to be discarded long before its time because the *cover* wore through.

That fact guided Goodyear scientists in designing Goodyear Water Hose.

They started with a good inner tube and strong fabric.

But they put on this hose an unusually thick cover of exceptionally tough rubber.

Water Hose is dragged over floors and pavements and steel plates. It is walked on and run over by hand-trucks and wheelbarrows. It is left outside rain or shine. *The Goodyear cover on Goodyear Water Hose is built to stand this use.*

That is why Goodyear Water Hose wears longer and so costs less.

That is an example of the way Goodyear builds all Industrial Hose—

—finding out what conditions must be met, and then developing the materials and construction to meet them.

Goodyear has scientifically developed a hose for every industrial use. Samples of this hose, and the advice of a trained technical man, are yours for the asking—without obligation. Phone, wire or write the nearest branch.

**The Goodyear Tire & Rubber Co.**
**of Canada, Limited**

*Branches: Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver*

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MADE IN CANADA

**INDUSTRIAL HOSE**

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## FIRST IN CANADA

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The entry of the Duplex Stoker into the Canadian railway world is but a logical step in the advance of successful mechanical firing.

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**DUPLEX STOKERS WILL PULL THE WORLD'S FREIGHT**

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TO OUR EMPLOYEES

OUR fellow workers whose loyalty and enthusiasm have contributed so much to our success and the development of our organization,

WE EXTEND

AT this season of joyous remembrance Our Greetings. We wish you all Good Health and Happiness, in larger measure for the year to come than any of the years that have gone.

THIS WISH

IS no different to the one we, at all times, silently entertain for you, but this being the season for expression, we proclaim to you and yours----

MAY your Christmas be a Happy One and may the New Year come to you laden with Prosperity.

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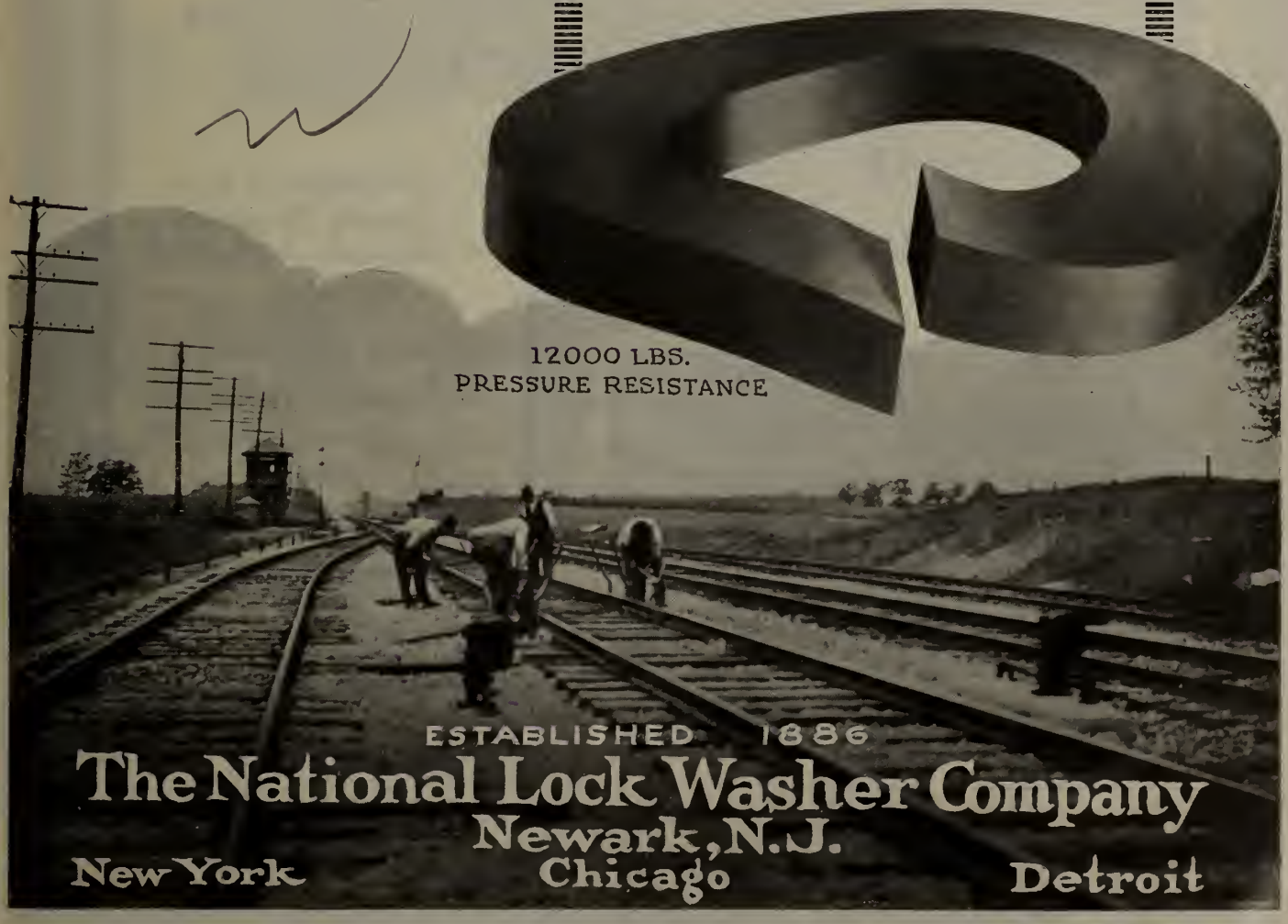

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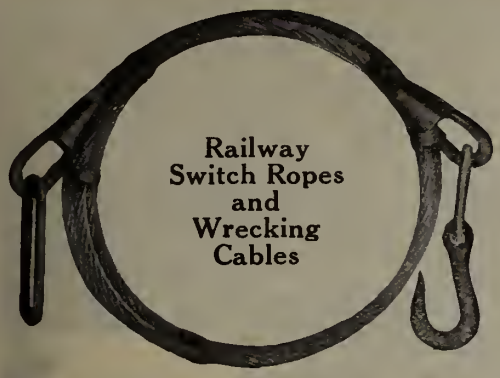


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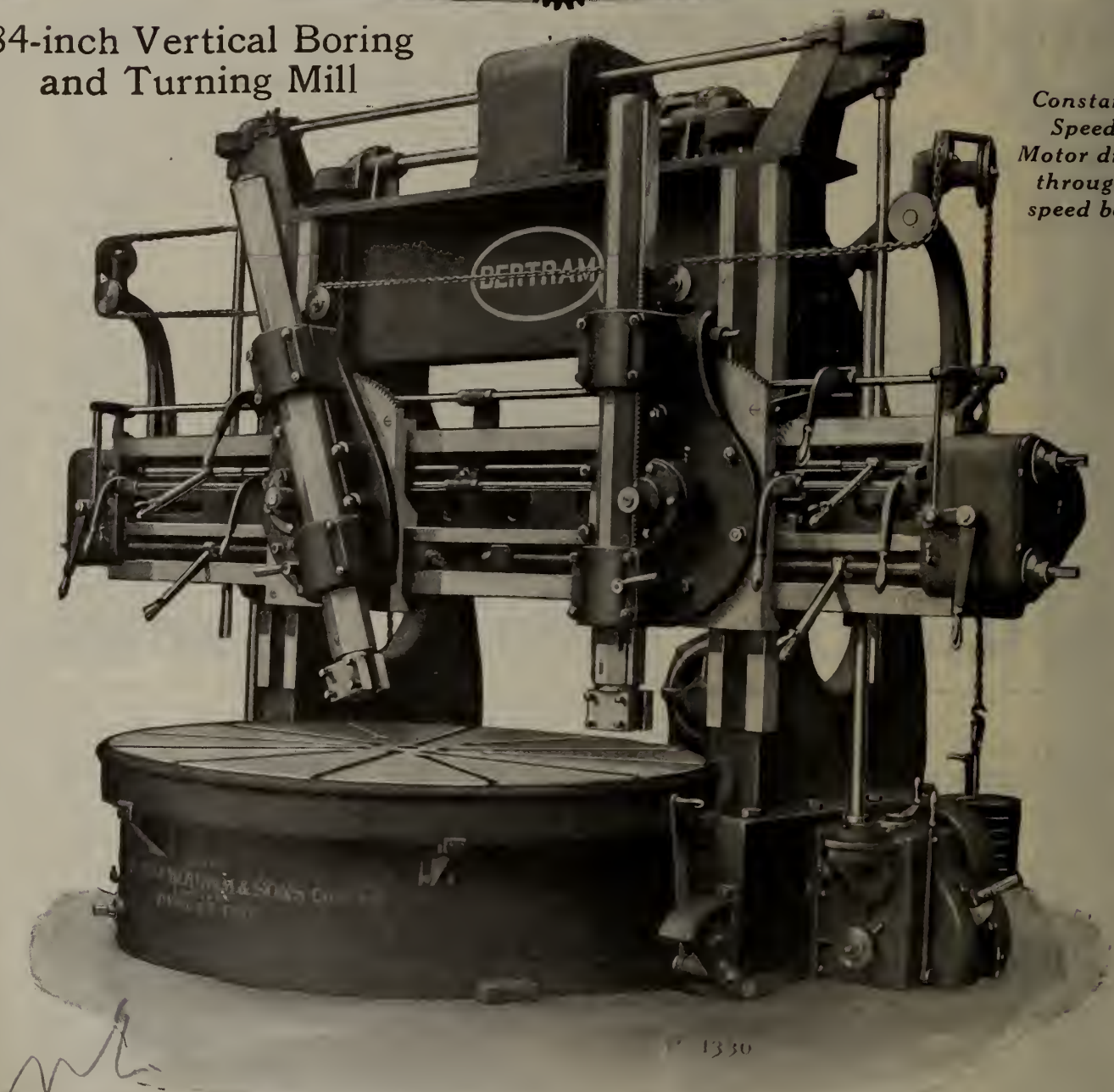


P 1330

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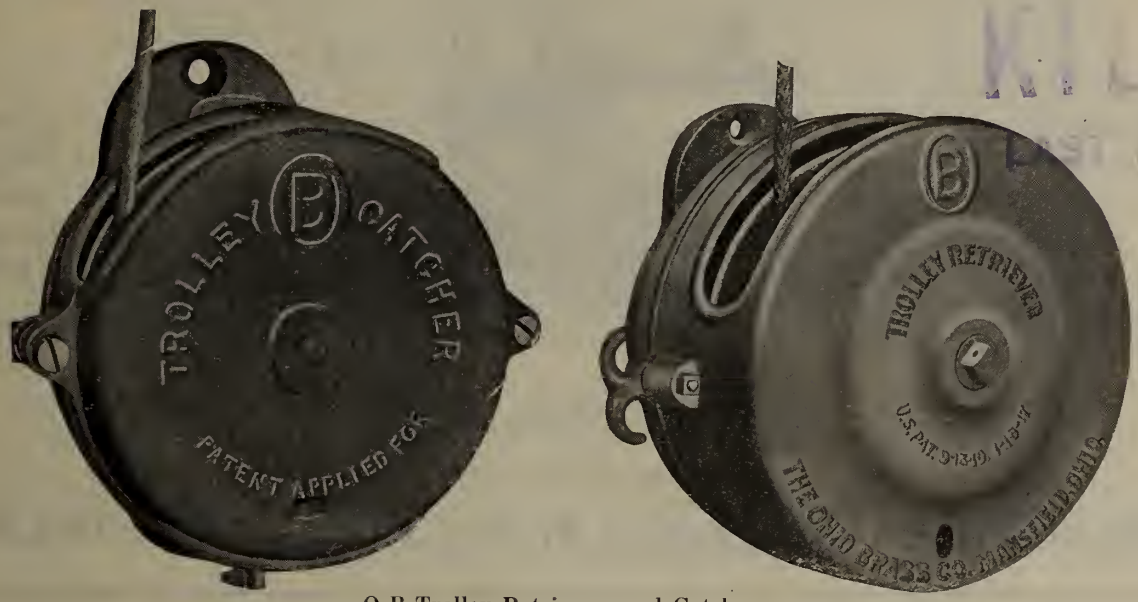


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O-B Retriever (for high speed) catches the pole and pulls it down below the span. O-B Catcher (for city service) catches the pole and permits **no "stepping-up."**

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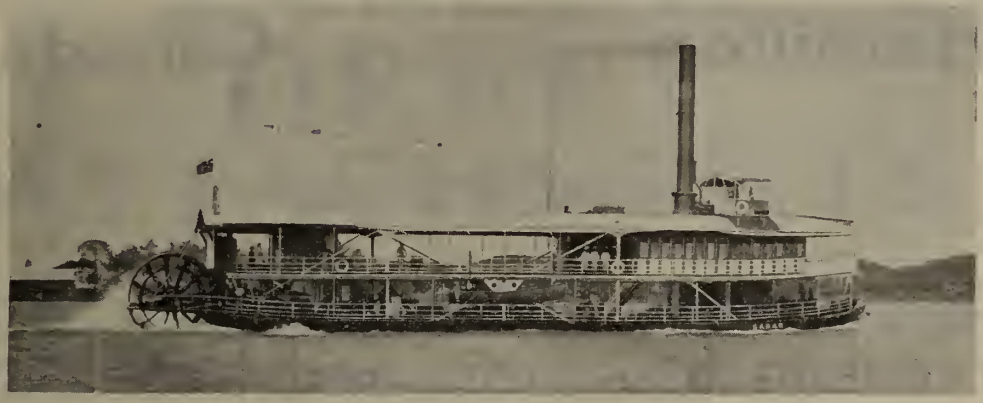

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IS MORE OFTEN CAUSED BY INADEQUATE
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# FARLOW DRAFT ATTACHMENTS

Are themselves adequate for service shocks in excess of draft gear capacity, and provide for their correct distribution to the underframe.

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The distance from the side of the casing to the centre of the spindle is only 1 and 5-16 inches, allowing the drill to be used right up against a lug or boss on a casting or in any other place where space is scanty and other types of drills are of little or no use.

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**The Little David Close Quarter Drill is only one member of a Labor Saving Family. Your name on a post card today will bring you an introduction to the rest of them.**

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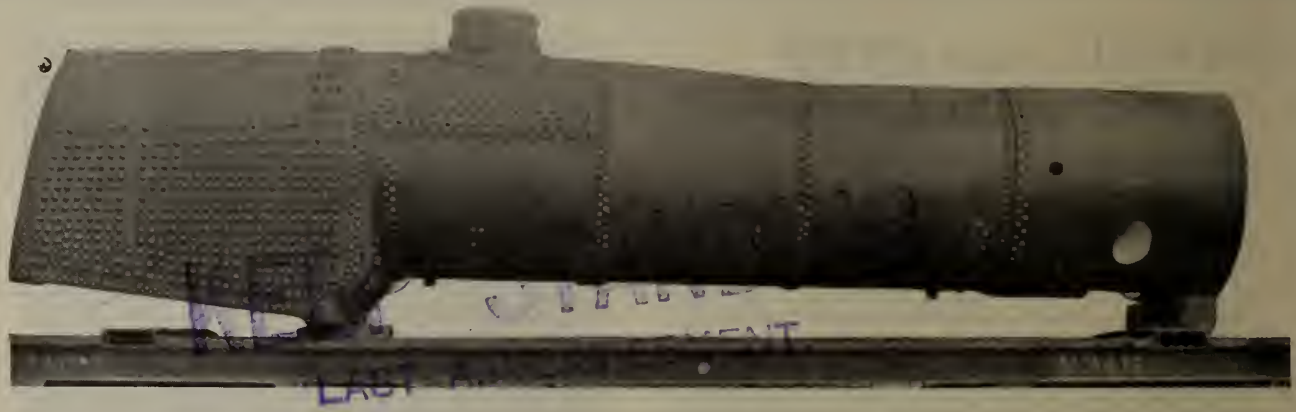

THE ART OF STAYING—The locomotive fire box will advance in just that proportion as suitable and adequate means are provided to enable the fire box to expand under the least restriction.

STAYBOLTS BREAK—when the stress of fire box expansion is too severe, and fire sheets distort and crack when staybolts are too rigidly connected to same.

THE TATE FLEXIBLE STAYBOLT—is designed and made to give satisfactory results in the final measure of its usefulness, as an economic, safe and reliable factor in reducing the costs of fire box repairs and maintenance.

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**ENGINEERS AND BOILER MAKERS**

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Coal and Ore Handling Equipments.

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The answer to the question, "What fabric is universally used for upholstery?"

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MOHAIR PLUSH

Mohair is the logical choice of all upholstery fabrics

Why? **First—Durability. Second—Fast color. Third—Rich appearance. Fourth—Sanitary.**

How long does it last? **According to quality, eight to twenty-five years.**

What evidence that it is sanitary? **Careful scientific tests through many months by some of America's leading railroads, hotels and homes. Particulars gladly furnished on request.**

What is Mohair? **The lustrous fleece of the Angora goat.**

How strong is Mohair compared with wool? **According to Government tests more than two and one-half times.**

**For more than thirty years CHASE Goat Brand Plush has been the standard with America's largest railroads and steamship lines.**

**Recently there was exhibited a seat covering in excellent condition after a constant service of twenty-four years. It was upholstered with CHASE Goat Brand Plush.**

## L. C. CHASE & CO., Boston, New York, Detroit, Chicago, San Francisco

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**Reamers and Milling Cutters**

WILT Products are manufactured with the sole purpose of meeting the demand for an absolutely dependable tool of high quality.

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are the kind of tools you can depend upon to give the highest form of service. If you are not getting the satisfaction you would like, adopt the WILT line. They have the quality that gives long and satisfactory service. Give them a trial.

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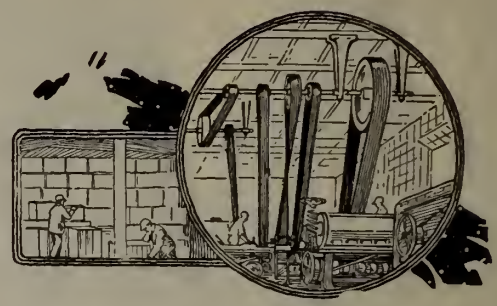

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In Canada there are many manufacturers who could wisely and profitably employ an efficiency expert; many of them are paying for power which they never use and they do not realize that their present equipment is stealing part of their profits.

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A phone, wire, or letter to our nearest Service Branch will prove profitable, and places you under no obligation.

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Makers of Dominion Hose, Packing and Industrial Rubber Goods and Dominion Tires, the GOOD Tires for every purpose.

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# Canadian Railway and Marine World

January, 1920

## The 58th Broad Gauge Operating Company (Canadians), Organization and Work Overseas.

By Captain A. H. Kendall, M.C., Officer Commanding the Company.

In July, 1916, a request was received by the Dominion Government from the British Colonial Secretary to recruit for service in France, a detachment of skilled railway operating troops. On Oct. 20, 1916, the Minister of Militia recommended that a section of these troops, to be known as No. 1 Section Skilled Railway Employes, be organized, consisting of three officers, and 266 other ranks. The recommendation was approved by the Privy Council on Oct. 31, 1916. In December, 1916, the Canadian Pacific management was asked by the Militia Department to recommend a commanding officer, and on Dec. 28, 1916, A. H. Kendall, Master Mechanic, Ontario District, C.P.R., Toronto, was appointed with the rank of captain. On Jan. 3, 1917, recruiting offices were opened at various places between Winnipeg and Halifax. The unit was mobilized at Guy St. Barracks, Montreal, and was over strength early in February.

On Feb. 27, 1917, the order was received to prepare to leave for overseas, and the unit left Bonaventure station, Montreal, Mar. 1, 1917, but on account of the severe winter weather prevailing at the time, did not arrive at Halifax until Mar. 4. The unit embarked the same day on the s.s. Ausonia, and after one of the roughest trips on record, arrived at Liverpool on Mar. 15. After disembarking the unit entrained immediately for Bordon Camp in Hampshire, the principal British Railway Troops' depot, and arrived there about midnight. The following day, Mar. 16, the unit entrained for Aldershot, Hampshire, where it was attached to the Royal Engineers, and quartered in Talavera barracks. During its stay at Aldershot the unit received a short military training. Shortly after arrival, notice was received that the unit had been renamed, and would thenceforth be known as No. 12 Canadian Light Railway Operating Company, but when the authorities were further informed as to the class of men composing the unit it was again changed to the 58th Broad Gauge Operating Company (Canadians).

On Apr. 16, 1917, the company was reviewed by the G.O.C. Aldershot Command, and the Officer Commanding Royal Engineers. The next day the company entrained for Southampton, and embarked on the s.s. Archimedes which left at dusk for Le Havre, France. On account of loose mines in the channel, and enemy submarine activities, the Archimides was ordered back, and dropped anchor opposite Netley Hospital until the following evening. The company arrived at Le Havre on the morning of April 19, where it remained at No. 5 Rest Camp until April 22, and then entrained for Audruicq, the base depot of the Railway Operating Division, R.E.

While at Audruicq some of the n.c.o.'s and men were employed in the shops on locomotive repairs. Others were sent to Le Havre to assemble, and bring up, locomotives. The running men made trips over the line, and were instructed in the rules for operating over the Nord Ry. of France, and British military lines. About the end of May, 1917, a 12 in gun on railway mountings, weighing 185 tons, was derailed at Audruicq, and after it had been off the rails for 50 hours, causing much inconvenience and delay to traffic, the 58th B.G.O.C. was ordered to rerail it which was accomplished successfully in 4½ hours. Headquarters then decided that the company would remain intact, and work as a unit. Early in June, 1917, the unit, with R.E. reinforcements, proceeded to Merris, a newly constructed British railway depot, about 300 yards west of Strazeele (Nord) station,

Captain A. H. Kendall, M.C.

with 15 locomotives, 3 Merryweather pumps, an emergency stores, a tool van, and a small supply of coal. As the preparations for the Messines offensive were under way at the time, the unit was well initiated into railway operation under active service conditions from the first day. In the Merris area the unit gradually assumed control of and operated the double track lines from Hazebrouck to Armentieres, and from Hazebrouck to Berguette and the single track lines from Berguette to Estaires, Laventie and Armentieres; Hazebrouck to Merville; Berguette to Aire; Aire to Estres, Blanche, Bailleul to Wulverghem, Messines and Ploegstraat Road; Clapham Junction to Brulooze (Kemmel); Steenwerck to Neuve Eglise, and Steenwerck to Petit Pont and Romarin.

The main locomotive depot was established at Merris with subdepots at Bailleul, Steenwerck and Berguette. At Merris the number of locomotives in charge increased from 15 to 40 of various types and makes, ranging from the type 25 (0-6-0) Belgian, with no brakes on the locomotive, and hand brakes and wooden brake shoes on the tender, to the 2-8-0 Baldwins. Amongst them were locomotives from the different railways in Great Britain, a few Belgians, Baldwins and Canadians. On account of having so many different makes, it was found difficult at times to secure the required spare parts, which were ordered from the transportation stores depot.

When Merris depot was opened, there were, of course, no facilities whatever for maintaining locomotives. There were no cinder or washout pits and no shelter for locomotives, which had to be repaired in the open in all kinds of weather. Until proper water facilities could be provided, a supply was maintained by means of Merryweather pumps, and a length or two of suction hose to the nearest ditch. Coal was ordered from headquarters, and received in train load lots from Dunkirk and Dieppe. On account of the urgent demand for equipment, coal trains were unloaded as soon as possible after arrival, on to the ground. In coaling a locomotive the coal had to be man handled on to a ramp, and again to the locomotive tender. Coal trains were unloaded mostly by Chinese coolies or German prisoners. Locomotives were also cleaned and coaled by this class of labor when available Locomotives were washed out every 10 days, on account of the bad water. When not undergoing boiler repairs or being washed out, they were kept constantly under steam, and ready for use on short notice When possible locomotives were double crewed, but when traffic was very heavy and men were scarce, it was necessary to pool them all.

When Merris depot was finally developed, it consisted of a two track locomotive shed, about 150 x 50 ft. with repair pits the full length. The sand dryer was combined with the incinerator. A concrete washout pit was built, also a locomotive store and locomotive dispatching office. A corrugated iron machine shop about 100 x 50 ft was put up and we were able to get the following machinery,—a 50 h.p. steam engine and boiler, 20 k.w.t. electric generator, 3 engine lathes, planer, milling machine, 2 drilling machines, tool grinder, and a 500 cu. ft. capacity air compressor. We also accumulated a reserve coal dump of 3,000 tons.

Merris exchange yard consisted of 16 tracks about 1,400 ft. long. The main control (dispatching) office, connected by telephone with all stations, was also located here. As the traffic to the Merris area was for Second Army, and traf-

fic for the Berguette area was for the First Army, it was necessary to keep in closen touch with the headquarters of both armies. As the railway lines in the lines of communication area were controlled by the Nord Ry. Co. of France, it was also necessary to keep in close touch with that company. As the various railways lines were ready for taking over by the unit from the Nord Ry., or the Army Railway Construction Engineer, the necessary station accommodation was provided as far as possible. The "station" was a 6 x 10 ft., corrugated iron or wooden hut, an old ruined building, or on forward lines a dugout. Telephones were installed, station and yard staffs placed, and the lines officially handed over at an agreed time.

When a train left the dispatching station (Boulogne for example), Merris exchange station was advised the number, and consist. Passing reports were also received from reporting stations on Nord lines. On arrival of train at Merris, the dispatching station locomotive was taken off, sent to the shop and made ready for the return trip; the crew was given rest, a hot meal and 24 hours rations In the meantime the train was marshalled in the exchange yard, our own locomotive and crew put on and taken to destined railhead. To overcome the absence of air brakes, trains had to be made up with a brake van on each end, and sufficient cars with hand brakes properly placed to provide the necessary braking power. A small white light was placed on the front of the locomotive, and one red light on the rear of the train. The train crew consisted of a conductor and a brakeman The conductor rode in the head end brake van, and the brakeman in the rear van. At times it was only possible to provide one man who acted as conductor, but rode in the rear van. The locomotive man, not the conductor, received all train orders from the station agent, and was primarily responsible for the train.

On Nord Ry. lines trains were handled on the automatic block system, and on Railway Operating Division lines on the station block system. The R.O.D. lines were divided into sections, and at each station hand, or at night, when possible, lamp signals were given to locomotive men in accordance with the prescribed rules, but no locomotive man was permitted to proceed into a section until he was furnished with a train order, printed in French and English, indicating either that the section was clear, or that the preceding train had left not less than 10 minutes previously. In the event of a section being occupied, it was necessary for the locomotive man to proceed at "caution," and also sign the train order, and give his copy up at the end of the section to which it referred It was permissible to run all trains at "caution," with the exception of ambulance trains, which were handled on the absolute station block.

When railhead areas were being bombed or shelled by the enemy, especially at night, it was necessary for locomotive and train crews to be particularly on the alert, as the track and telephone lines were frequently blown up. Night operation was more difficult also on account of the almost total absence of lights in yards, etc. Locomotive men were often required to take a train over a new and unfamilar line, without a pilot, at night, on which they would discover very heavy grades, and on descending would whistle for brakes, and trust to luck to find their train still on the rails at the bottom. As it was not always possible to obtain pilots, men had often to learn the road themselves on their first trip.

The unit soon discovered that railway lines and yards were at least one of the main objects of attack by hostile aircraft and batteries. On one occasion bombs were dropped on some ammunition sidings near Bailleul, where two trains of 88 cars, including the ammunition contained therein, were completely destroyed.

In addition to operating and controlling the lines before mentioned the unit also operated supply and ambulance trains for the area to and from the base ports, Calais and Boulogne. Troop trains were also often handled to and from reinforcement camps to railheads, and vice versa. Other traffic was brought to Merris and Berguette exchange yards by R.O.D. locomotives of other detachments, or Nord Ry. locomotives, which would be turned back with loads or empties. Foreign locomotives or crews were only allowed forward of exchange stations in cases of absolute necessity. In addition to handling regular traffic the unit was required to supply locomotives for construction companies working in the area, also for gun movements. On the lines mentioned there were as many as 8 guns on railway mountings, ranging in calibre from 9.2 to 12 in. Ammunition was hauled up to them at night, and when they went into action a locomotive was required to stand by ready for use at a moment's notice. During the week ended April 4, 1918, the following loaded cars were handled by the unit. Troops and remounts, 2,318; supplies, ordnance, ammunition and general traffic, 5,072; construction material, 29; ambulance, 254; French and Belgian civil traffic, 613; a total of 8,286 loaded cars About 50% of those returned to base were hauled back empty.

Commencing about April 9, 1918, about 4 a.m., the area in which the unit was operating was subjected to enemy shelling and bombing to an unusual degree. The railway and telephone lines were blown up continually, and some of the stations, as well as the control office at Merville, met a similar fate. The handling of traffic on the Berguette-Estaires-Armentieres line was the first to be seriously interfered with. At about 7 a.m. the track was cut as far back as St. Venant, and telephone lines forward of that station were put out of commission. These lines were destroyed repeatedly, and repaired as often as possible. Communication was finally maintained by means of gasoline track motor cars. At noon the two locomotives supplied the 366th Battery at La Gorgue, hauled the guns to Lestrum, after five shell breaks had been repaired on the way and the guns went into action immediately. In the meantime numerous trains of material and French refugees were evacuated, and trains of troops, ammunition, and ordnance brought up. At 2 p.m. our patrols reported that the enemy had crossed the line at Laventie, and was advancing rapidly on La Gorgue. The continuous shell and machine gun fire soon rendered this section of the line of little use for traffic working. Rolling stock and personnel were ordered withdrawn to Lestrum. Shortly after this move the infantry took up positions on the line of the Lawe River at Lestrum station, and the rolling stock and personnel were further withdrawn to Merville. At this time the number of casualties along the line was continually increasing, and as it was not advisable to run heavy ambulance trains past St. Venant, a train of flat cars was made up and sent forward as far as possible, and picked up wounded on the way back to Berguette depot, where a field dressing station was hurriedly established.

Peronne Station, in France, in which the 58th Broad Gauge Operating Co. (Canadians) Main Control Office was located, on Sept. 30, 1918, when 128 trains were handled in 24 hours.

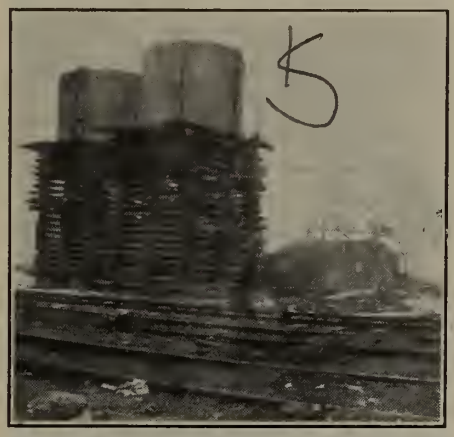
In the Bailluel area, Armentieres had by this time been captured by the enemy, and he was rapidly advancing towards Steenwerck, and pouring shells into that area. Trent ammunition depot was heavily shelled, and several hangars destroyed. While getting a train out of this dump, locomotive 721 was derailed three times, and had to pass over a damaged switch. The detachment living train at Bailleul was hit, resulting in several casualties. All rolling stock and guns were successfully evacuated from this area. The work of bringing up troops, supplies, ammunition, etc., and evacuating refugees, casualty clearing stations, R. E. parks, etc., continued with increasing vigor in the whole area until April 12, 1918, at noon, when 2nd Army Headquarters ordered the unit to evacuate at once all lines operated in that

army area. At this time the Merris depot was being subjected to a bombardment of shrapnel, high explosive and gas shells, and the track had been destroyed up to that point. The last train to leave was loaded with personnel of the unit. It was followed up immediately by an R.E. demolition party which destroyed the track and bridges west to Carlyle Junction. In less than an hour after the unit left, the enemy had passed through Merris depot, but was driven back later and the east leg of the Y formed a section of the British front line for the next few weeks.

By this time the units' living quarters at Berguette had been turned over to the Army Medical Corps for use as a field dressing station, and the railway lines and bridges and been destroyed up as far as St. Venant On April 13, 1918, 1st Army Headquarters ordered the Berguette detachment to evacuate, and it moved only a couple of miles away to Isbergues. From this point locomotives were supplied to three siege batteries, and the steel plant at Berguette, light railway depot at La Laque, inland water transport depot at Aire, and the ammunition dump at Robeque were evacuated. Robeque dump was only 1,093 yards from the front line, and the unit was asked by Army Headquarters if we could evacuate it. A reply was given immediately in the affirmative, but there was some hesitation on the part of the army in ordering the work to be done, as there was some doubt on their part as to the advisability of having a locomotive handling traffic so near the line. The order was given, however, and the work was successfully accomplished. Over 200 cars of ammuntion were taken out at night.

Ammunition, troop, supply trains, etc., were being worked continuously from base ports to Berguette, and forwarded to Bethune, Lillers, and other points along the main line, which was now continuously under shell fire. The Berguette detachment remained in the vicinity of Isburgues until June 5 1918, when the work being done by them was turned over to the Ballastiere detachment. After the evacuation of Merris, the personnel from that area was employed at Audruicq. The running men were used handling ballast trains construction troops, etc., and when the line was near completion a small number of leave, ambulance, ammunition trains etc., were handled. We also had fifteen 2-8-0 type Baldwin locomotives handling main traffic out of Abbeville.

On Aug. 8, 1918 His Majesty King George, desiring to see Canadian construction and operating troops at work, honored the line with a visit, and the unit made up and handled a special train for his accommodation from Conchil to Legiscourt. On Aug. 27 the unit turned over the operation of these lines to the 59th Broad Gauge Operating Company (Australians), and on the following day the unit proceeded to Chemin Vert British railway depot (Wiencourt Nord station) on the Amiens-St. Quentin main line, and was there attached to the Fourth Army.



Two 20,000 gall. capacity water tanks at Omiecourt, used by 58th Broad Gauge Operating Co. (Canadians). The water was pumped from 5 artesian wells bored to a depth of about 850 ft.

The lines taken over in this area, as fast as they were built, extended to Bray-Wormwood Scrubs - Peronne; Plateau-Trones Wood-Epehy; Peronne-Quinconce-Etricourt. These lines were single track, and notwithstanding the fact that they were constructed rapidly with the quickest available material, they were required to stand up under a tremendous volume of traffic. Numerous derailments were unavoidable, but the prompt and effective measures taken by the various construction units to repair the breaks assisted materially in reducing delays to a minimum. As no water was obtainable at Chemin Vert when that depot was taken over, two water tank trains, made up of 21 water tank cars each, were supplied. As one of these trains was made empty it was taken to Longeau, near Amiens, and refilled. A supply was later pumped from the Somme River, five miles away. Water was secured on the line by means of Merryweather pumps at various places. During the week ended Sept. 19, 1918, in addition to the usual gun movements, and locomotives supplied construction companies, the unit handled the following loaded cars,—Troops and remounts, 1,127; supplies, tanks ordnance, and general traffic, 3,894; construction material, 56; ambulance, 613; a total of 5,690 loaded cars.

As the armies advanced, and new lines were rapidly taken over, it was necessary to anticipate requirements in the way of additional personnel, locomotives, locomotive supplies, coal, etc. Arrangements were made in conjunction with the R.C.E., and the R.T.C. for water supplies, yard facilities and telephone lines. The traffic department at G.H.Q. was wired the furthest points to which traffic was worked daily, and the routing of traffic for the armies was arranged accordingly.

Early in September, 1918, a detachment was sent to Chaulnes, to commence operating the double track line to Peronne. On Sept. 18, a control office was established at Peronne. Trains were run up this line to Marchelpot, Sept. 3; Peronne, Sept. 12; Tincourt, Sept. 14, and Roisel, Sept. 16. On the night of Sept. 20, a heavy tank movement of 36 trains for Tincourt commenced. Although the enemy shelled the track, and broke the main line at Tincourt, the movement was completed successfully. On Sept. 21 a locomotive depot was established at Peronne. On Sept. 24, Peronne yard was in working order, but there was no switching lead. At that time 60 trains were being handled daily on that line, and traffic was steadily increasing. On Sept 26, one 14 in. and one 12 in. gun, on railway mountings, were handled to Roisel, where they went into action immediately. Two locomotives stood by to make the necessary moves On this date men were placed on the Etricourt lines to handle traffic from the Bapaume-Achiet le Grand direction. On Sept. 28, the double track was complete, and in operation as far as Roisel, and ambulance trains commenced to load at Tincourt. On Sept. 30, Peronne locomotive depot and yard were in full working order. On that date 128 trains were handled in both directions, which was the high water mark reached by the unit in handling traffic. Although Peronne had been completed, on account of the inadequate facilities, arrangements were made for the construction of an up to date exchange yard, and locomotive depot at Omiecourt, near Chaulnes.

From Roisel, the line through Templeaux to Bellicourt, and the line through Vermand to St. Quentin were taken over, also the line through Epehy, Gouzeaucourt and Marcoing to Cambrai. A locomotive depot, and sub-control were established at Marcoing, which was also an important junction with the line from Bapaume. When the line to Cambrai was workable, the control was moved from Marcoing, and established in the Gare du Nord at Cambrai. The loco-

Locomotives used by 58th Broad Gauge Operating Co. (Canadians).
R.O.D. 1961 is a 2-8-0 type Great Central Ry. locomotive, used in handling ambulance trains and through traffic. R.O.D. 1459 is a 2-8-0 type Baldwin locomotive, used in through traffic.

in train and locomotive service out of that depot to forward areas, and various other places, such as Dunkirk, Rouen and Boulogne.

At this time although the majority of all the comparatively old established lines controlled by the British army had been captured by the enemy, new lines were constructed rapidly, and on June 5, 1918, the whole unit was ordered to proceed to Conchil-le-Temple, to operate for Canadian and R.E. construction companies, building the new double track line from Etaples to Conchil, and the new single track line from Conchil to Candas. This work consisted mostly of

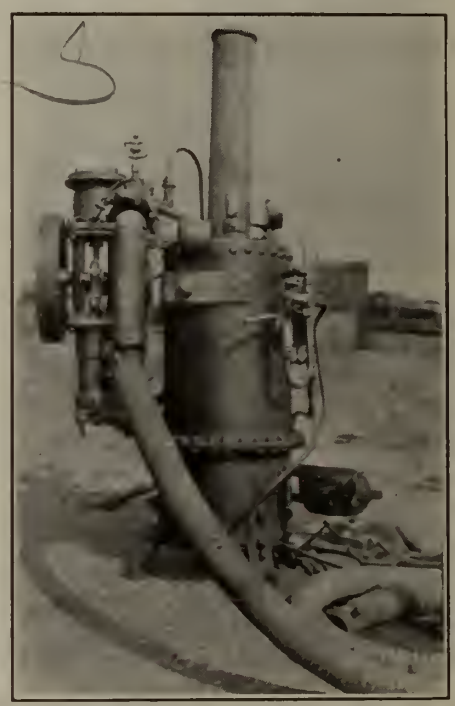
motive depot was also transferred to Cambrai at a later date. From Cambrai the following lines were taken over and operated, — Cambrai - Caudry - Busigny; Wassigny - Le Cateau - Maubeuge; Aulnoye - Les Quesnoy - Valenciennes; Cambrai-Somain-Valenciennes; Denain-Anzin; Cambrai-Solesmes-Le Quesnoy. The line from Cambrai to Douai was also assigned to the unit, but it was not found necessary to use it. On the lines from Chaulnes, through Cambrai, to Bouchain, and the line from Cambrai to Caudry, much inconvenience and delay to traffic was caused by the explosion of delay action mines. Taking into account, however, the large number of mines placed, the unit was fortunate in only having had three locomotives damaged through delay action mine explosions. During the week ended Oct. 3, 1918, the unit handled the following loaded cars: Troops and remounts, 2,490; supplies, ordnance, ammunition and general traffic, 9,921; construction material, 884; ambulance, 1,605; a total of 14,900 loaded cars.

On Nov. 11, 1918, several ammunition trains were ordered back to the base, and no more came up. After the last big evacuation of casualty clearing stations, ambulance trains were used for French civilian prisoners of war, many of whom returned in a very weakened condition. These trains were also used as soon as possible to transport French and British prisoners of war who were not able to travel on troop trains. As soon as the French and Belgian lines were connected the unit had fifteen 2-8-0 Baldwin locomotives double crewed working in traffic service between Cambrai and Germany. The unit operated the first troop train into Duren, Germany, over the Valenciennes-Mons-Liege line.

On Nov. 28, 1918, the new exchange yard and locomotive depot at Omiecourt were completed. On the following day the Peronne detachment, and most of the shop staff from Chemin Vert, were transferred to Omiecourt. The facilities at Omiecourt consisted of an incoming and an outgoing yard, with 12 tracks about 1,800 ft. long in each, also a locomotive depot, 500 ton capacity coal ramp, locomotive stores, a 250,000 gall. capacity concrete reserve water reservoir, and two 20,000 gall. capacity water tanks which were supplied by pumping water from five artesian wells bored to a depth of about 850 ft. The machine shop was fitted up in large French steel brake vans, which were transferred easily from one depot to another when required. The power for running the machines was supplied by a gasoline engine and a 20 kwt. electric generator.

As the mileage operated increased, the organization of the unit was enlarged to meet the changing conditions. The unit's headquarters was made mobile, and accommodated in a train of German box cars, and British brake vans. The lines were divided into three sections, with headquarters at Chemin Vert, Omiecourt and Cambrai. The officer in charge at Chemin Vert operated and controlled the lines out of that point, to Marcoing, Epehy and Peronne, all exclusive. The Omiecourt detachment controlled the lines from Chaulnes to St. Quentin and Marcoing, exclusive. Cambrai controlled lines from Marcoing to Valenciennes, and easterly. At the time of the armistice, the unit operated and controlled all forward broad gauge lines for the Third and Fourth British Armies, and one line for the First Army. The unit's strength was 16 officers, and 1,567 other ranks. The unit had on charge 101 locomotives, and the motor transport consisted of 12 vehicles. In addition to handling, as before mentioned, a special train for the King, special trains were also handled for the accommodation of Marshal Foch, Field Marshal Sir Douglas Haig and General Pershing, as well as for General Sir Herbert Plumer, Commander of the 2nd Army, General Sir H. S. Rawlinson, Commander of the Fourth Army, and General Sir Julian Byng, Commander of the Third Army.

By Jan. 1, 1919, a start had been made to demobilize the Imperial troops attached to the unit, and to turn over lines to the Nord Ry. By April 1, the unit had turned over the operation of all lines, except the British military lines out of Chemin Vert, to the Nord Ry. All locomotives, supplies, the Chemin Vert lines and the remainder of the Imperial personnel, had been turned over to other R.O.D. detachments, and the unit was ready to pack up and start for home. On April 5 it was reviewed by the Officer Commanding the R.O.D., R.E., and on April 8 it entrained for the base.



Merryweather Pump used, by 58th Broad Gauge Operating Co. (Canadians) for obtaining water supply.

The following officers served with the unit,—Captain A. H. Kendall, Master Mechanic, C.P.R., Toronto; Lieut. S. H. Ryan, Assistant Superintendent, T. & N.O.R., North Bay, Ont., and Lieut. A. S. Parkes, Locomotive Department, Angus shops, C.P.R., Montreal. The following officers of the Imperial forces were attached for duty,—Capt. L. L. French, South African Rys., Pretoria; Capt. J. R. Anker, London & South Western Ry. of England; Capt. R. Hapson, Indian State Rys.; Lieut. R. L. Wheeler, station agent, C.P.R.; Lieut. E. D. Gerrard, Mechanical Engineer, Angus shops, C.P.R., Montreal; Lieut. E. M. Jackson, Mechanical Engineer, Midland Ry., England; Lieut. T. F. Jackson, Traffic Controller, Midland Railway, England; Lieut. H. A. S. Espley, London & N.W.R., England; Lieut. P. J. Stebbings, South Eastern & Chatham Ry., England; Lieut. J. E. Potter, Midland Ry., England; Lieut. H. Duff, Caledonian Ry., Glasgow, Scotland; Lieut. J. A. Stanley, Yardmaster, C.P.R., Montreal; Lieut. L. Dade, Great Central Ry., England.

The honors conferred on members of the unit were, M.C., 2; D.C.M., 2; M.M., 7; M.S.M., 4; mention in dispatches, 2. In addition to the above, 15 n.c.o.'s and men received D.G.T. certificates in recognition of acts of gallantry.

On April 2, 1919, the Director General Transportation sent the following letter:

"Captain Kendall, officers, n.c.o.'s and men of the 58th Broad Gauge Operating Co. (Canadians).

"In bidding you farewell on the occasion of your return to Canada, it is with a feeling of pride and gratitude that I recall the services that your company have rendered me in assuring the rail transportation for the allied armies in the field. The important preparations for the Messines offensive in 1917 were largely carried out by you, and were attended with every success. Also, what was perhaps more difficult and yet more praiseworthy, the evacuation of the area round Bailleul and Armentieres, retaken by the Germans during the spring of 1918, was satisfactorily effected by you under strenuous and trying conditions. To me these were periods of the most vital importance, and my reliance on you was admirably justified by your fine performances. I take this opportunity of thanking you for your continuous good work since your arrival in this country in April, 1917, until now, to wish you success and a happy return to your peace vocations at home. You take back with you a record of which you have every reason to be proud.

"S. D. L. Crookshank, Major General, Director General Transportation."

**Editor's Note**—Capt. Albert H. Kendall, M.C., was born at Aspatria, Cumberland, Eng., April 4, 1878, and entered railway service in June, 1901, since when he has been, to Jan., 1904, locomotive foreman, C.P.R., Nakusp and Revelstoke, B.C.; Jan. to Nov., 1904, locomotive foreman, G.T.R., London, Ont.; Nov., 1906 to July, 1913, gang foreman, erecting shop foreman, and general foreman, successively, Angus shops, C.P.R., Montreal; July to Dec., 1913, locomotive inspector, C.P.R., Kingston, Ont.; Dec., 1913 to April, 1915, general foreman, C.P.R., North Bay, Ont.; April, 1915, to Aug. 28, 1916, Assistant Works Manager, Angus locomotive shops, C.P.R., Montreal; Aug. 28, 1916 to Jan., 1917, Master Mechanic, Ontario District, C.P.R., Toronto. In Jan., 1917, he entered military service as Captain, no. 1 section, Skilled Railway Employes, and was later transferred to the 58th Broad Gauge Operating Co., B.E.F., in France. He was awarded the Military Cross, in the latter part of 1918, for superintending evacuation under heavy fire, and keeping lines running until the last moment. On his return to Canada and demobilization in Sept., 1919, he was appointed Master Mechanic, Quebec District, C.P.R., Montreal.

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**British Locomotive Building**—Armstrong Whitworth & Co.'s Scotswood Works, Newcastle on Tyne, England, which up to the close of the war were manufacturing shells, cartridge cases, fuses, etc., have been converted into locomotive works, with a capacity of between 300 and 400 locomotives a year, the erecting shop being capable of accommodating 50 locomotives, without tenders, at one time. The first locomotive was finished Nov. 13, being on an order of 50 from the North Eastern Ry.

# Free and Reduced Railway Passenger Transportation.

The Canadian Railway War Board made the following application to the Board of Railway Commissioners on Oct. 16, 1919:—"Section 345 of the Railway Act, 1919, after enumerating certain classes of persons to whom railway companies may issue free transportation or transportation at reduced rates, provides that such transportation may in addition be given 'to such other persons as the board may approve or permit.' After very careful consideration of the subject, it appears to the Canadian Railway War Board that it is necessary and proper that in addition to the classes of persons specifically enumerated in the Railway Act, the companies should be permitted to issue free transportation to the following classes:

"(a) Immigration Department of Dominion of Canada: For such representatives of the department as may be required by the Minister or Deputy Minister.

"(b) Immigration and Customs Departments of the United States: For such representatives of the departments as may be required by the Commissioner or Deputy Commissioner of Immigration or Collector or Deputy Collector of Customs in charge of the district.

"(c) Fire rangers within their respective districts, employed or authorized by provincial governments.

"(d) Families of former and deceased employes of railways.

"(e) Former employes of transportation companies and their families.

"(f) Deputy ministers of the Federal Government departments.

"The Canadian Railway War Board, therefore, on behalf of the railways under the board's jurisdiction, respectfully requests that the Board of Railway Commissioners should, under its powers, permit the railway companies to issue free transportation to the classes of persons above named."

**Chief Commissioner's Judgment**—Chief Commissioner Carvell gave the following judgment, Nov. 12:—After having considered sec. 345 of the Railway Act, 1919, very carefully, I have come to the conclusion that the whole purport of the section was to give to the railway companies, within certain limits, the right to carry traffic at free or reduced rates; and to such classes of persons and, in some cases, individuals, as the companies may decide upon, subject in certain cases to the approval and permission of this board. The whole section is preceded by the following words:"Nothing in this act shall be construed to prevent." It then refers to five specific classes of persons, and a careful examination shows that there is no great change between the present act and its predecessor, excepting that in subclauses (a) and (c) a limitation is placed upon the power of the railway companies, and in subclauses (d) and (e) an extension is provided for.

Under clause (a) the most which the railway companies can do towards reduced fares for ministers of religion, etc., is to carry them at one-half the regular fare, and under clause (c) the most they can do for members of the provincial legislatures is to carry them free within points in the province to which they belong. It is not clear whether members of the press can be carried free beyond the province in which they reside, but, as there is no comma after the word "legislatures," and nothing to designate a difference in the two classes, I am rather inclined to the opinion that the limiting words "between points within the province" apply to the latter as well as to the former. Clause (c) also extends the privilege to dependent members of the families of any persons who are entitled to free transportation under sec. 346 of this act, and clauses (d) and (e) also extend the right to employes of the Railways and Canals Department and to the Governor General and staff, etc.

This narrows the question down to the interpretation of the last line of clause (c), viz.: "or to such other persons as the board may approve or permit," and to the proviso immediately following subsection ((e), both of which are to be found in the previous act. These words evidently mean something, and it is my opinion that a railway company may decide to grant the privilege of free or reduced transportation to any person, or class of persons, subject always to the approval or permission of the board, and also subject to the proviso herein referred to, which, in my opinion, is a regulating power rather than an enacting one.

To apply this opinion specifically to the request made by the Canadian Railway War Board on Oct. 16, 1919, it would seem to me that the railways would have a right, subject to our approval or permission, to grant free or reduced transportation to those parties mentioned in clauses (b), (d), and (e) as well as to all others. Thus, if the railway companies decide to grant free transportation to United States immigration and customs officials, to the families of former and deceased employes of the railways, and the families of former employes of transportation companies, then, if this board approves or permits, they will be within the law in granting such transportation.

I am not so clear as to the real intention of parliament with reference to the proviso hereinbefore referred to, because, taken in its general sense, we are given the right to extend, restrict, limit, or qualify the carriage of traffic by the companies as provided under this section, but I have come to the conclusion that this is only meant as a regulating clause, and our powers are restricted to extending, restricting, limiting, or qualifying what the companies may propose to do, and, therefore gives us no originating jurisdiction; but when the railway companies come to us, asking that certain persons or classes of persons be given the privilege of free transportation, we would have the right to extend, restrict, limit, or qualify the same. If I am right in my general interpretation of the clause, then I think we have the power either to approve or disapprove of all the requests made by the Canadian Railway War Board in its letter of Oct 16, and, as they seem to me to be proper requests, I am in favor of approving the same and permitting the issuing of transportation as requested.

**The Board's Order**—The board passed general order 274, Nov. 20, 1919, as follows:—Re application of the Canadian Railway War Board, on behalf of railway companies subject to the board's jurisdiction for free transportation under sec. 345 of the Railway Act, 1919. Upon reading the application dated Oct. 16, 1919, and considering what has been urged in support thereof, it is ordered that railway companies of Canada subject to the board's jurisdiction, be permitted, until further order, to carry free of charge the following persons, viz.: (a) Department of Immigration of Dominion of Canada: For such representatives of the department as may be required by the Minister or Deputy Minister.

(b) Departments of Immigration and Customs of the United States: For such representatives of the departments as may be required by the Commissioner or Deputy Commissioner of Immigration or Collector or Deputy Collector of Customs in charge of the district.

(c) Fire rangers within their respective districts, employed or authorized by provincial governments.

(d) Families of former and deceased employes of railways.

(e) Former employes of transportation companies and their families.

(f) Deputy ministers of departments of the Federal Government, and those having the rank of deputy ministers.

**The Railway Act's Provisions**—The Railway Act, 1919, provides in secs. 345, 346 and 347 as follows:

345. (1) Nothing in this act shall be construed to prevent: (a) the carriage, storage or handling of traffic, free or at reduced rates, for the Dominion, or for any provincial or municipal government, or for charitable purposes, or to or from fairs and expositions for exhibition thereat, or the carriage, free or at reduced rates, of destitute or homeless persons, transported by charitable societies, and the necessary agencies employed in such transportation, or the carriage at one-half the regular single fare of ministers of religion or persons exclusively engaged in charitable, religious, or eleemosynary work;

(b) The issuing of mileage, excursion or commutation passenger tickets, or the carriage at reduced rates, of immigrants or settlers and their goods or effects, or any member of any organized association of commercial travellers with his baggage;

(c) Railways from giving free carriage or reduced rates to their own directors, officers, agents and employes, or their families, or to former employes of any railway, or for their goods and effects, or between points within the province to members of the provincial legislatures or to members of the press, or to members of the Interstate Commerce Commission of the United States and the officers and staff of such commission, and for their baggage and equipment, or to dependent members of the families of any persons who are entitled to free transportation under section. 346 of this act, and for their baggage, or to such other persons as the board may approve or permit; or,

(d) Railways or transportation companies from exchanging passes or free tickets with other railways or transportation companies for their officers, agents and employes and their families, goods and effects, or from issuing passes or free tickets to officers and employes of the Department of Railways and Canals, or their families, and their goods and effects, or a similar interchange of passes, or franks with or by telegraph, telephone and cable companies;

(e) Railways from giving free car-

riage to the Governor General, and staff, and families, and baggage and equipment,

Provided that the carriage of traffic by the company under this section may, in any particular case, or by general regulation, be extended, restricted, limited or qualified by the board, and the board, in or by any order or by general regulation, may prescribe the forms to be issued or used by the company for the carriage of traffic at free or reduced rates under this act, and the terms and conditions applicable thereto, and the records to be kept by the company of all such traffic carried and of all passes, free and reduced rate transportation issued or given by the company, and shall require the making of periodical returns duly verified by affidavit to the board in respect thereof; and it shall be the duty of the board to examine such return with a view to seeing that the law has been observed.

(2) Whenever the board sees fit it may require the company to grant and issue commutation tickets at such rates and on such terms as the board may order.

346. Members of the Senate and House of Commons of Canada, with their baggage and members of the board and such officers and staff of the board as the board may determine, with their baggage and equipment, shall, on production of cards, certifying their membership or right, which shall be furnished them by the Clerk of the Senate or the Clerk of the House of Commons or the Secretary of the board, as the case may be, be entitled to free transportation on any of the trains of the company; and the company shall also, when required, haul free of charge any car provided for the use of the board.

347. Subject to the provisions of sections 345 and 346 of this act, no company shall hereafter, directly or indirectly, issue or give any free ticket or free pass, whether for a specific journey or periodical or annual pass, and no company shall otherwise arrange for or permit the transportation of passengers except on payment of the fares properly chargeable for such transportation under the tariffs filed under the provisions of this act, and at the time in effect; provided that nothing in this act shall effect the furnishing of free transportation where such is specifically required by any other public general act of the Parliament of Canada.

## Birthdays of Transportation Men in January.

Many happy returns of the day to:—

J. Abrams, Wharf Freight Agent, C. P.R., Vancouver, B.C., born at Manchester, Eng., Jan. 24, 1870.

W. U. Appleton, Mechanical Superintendent, Eastern Lines, Canadian National Rys., Moncton, N.B., born there, Jan. 29, 1878.

R. Armstrong, Superintendent, Brandon Division, Manitoba District, C.P.R., Brandon, born at Kingston, Ont., Jan. 27, 1865.

J. A. Audrain, Trainmaster, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, Sask., born at St. John's, Jersey, Channel Islands, Jan. 23, 1883.

L. E. Ayer, General Agent, Canadian National Rys., St. Louis, Mo., born at Henderson, Ia., Jan. 11, 1877.

F. X. Belanger, ex-General Freight and Passenger Agent, Temiscouata Ry., Riviere du Loup, Que., now Traffic Manager, Fraser Companies, Ltd., Edmundston, N.B., born at Chlorydormes, Que., Jan. 20, 1876.

Sir George McLaren Brown, European General Manager, C.P.R., London, Eng., born at Hamilton, Ont., Jan. 20, 1866.

J. E. Dalrymple, Vice President, G.T.R., G.T.P.R., and Central Vermont Ry., Montreal, born there Jan. 1, 1869.

A. Davidson, Commercial Agent, Grand Trunk Pacific Ry., and G.T.P. Coast Steamship Co., Vancouver, B.C., born at St. Henri, Montreal, Jan. 29, 1885.

G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, Ottawa, Ont., born at Quebec, Que., Jan. 27, 1861.

J. E. Everell, Superintendent, Montmorency Division, Quebec Ry., Light and Power Co., Quebec, Que., born at Cap Rouge, Que., Jan. 1, 1863.

Gordon Grant, Chief Engineer, Quebec and Saguenay Ry., and Consulting Engineer, Railways and Canals Department, Ottawa, born at Dufftown, Scotland, Jan. 2, 1861.

G. F. Hichborn, formerly Agent, Great Eastern Fast Freight Line, New York, born at Boston, Mass., Jan. 13, 1875.

C. Hood, ex-Local Freight Agent, C. P.R., Saskatoon, Sask., now of Winnipeg, born at Edinburgh, Scotland, Jan. 20, 1864.

D. W. Houston, Superintendent, Regina Municipal Ry., Regina, Sask., born at Bathurst, N.B., Jan. 3, 1879.

H. J. Humphrey, Superintendent, Trenton Division, Ontario District, C.P.R., Toronto, born at Berrys Mills, N.B., Jan. 26, 1879.

W. C. Hunter, ex-Manager New Brunswick Coal and Ry. Co., now of Montreal, born at St. John, N.B., Jan. 4, 1865.

P. A. Keeler, Treasurer, Dominion Express Co., Toronto, born near Prescott, Ont., Jan. 18, 1867.

H. G. Kelley, President, G.T.R. and G.T.P.R., Montreal, born at Philadelphia, Pa., Jan. 12, 1858.

W. J. Lynch, General Manager, Quebec Ry., Light, Heat and Power Co., Quebec, Que., born there, Jan. 17, 1882.

G. E. McCoy, Master Car Builder, Eastern Lines, Canadian National Rys., Moncton, N.B., born there, Jan. 8, 1886.

C. R. Mackenzie, Assistant to General Manager, Canadian National Rys., Montreal, born at Toronto, Jan. 10, 1883.

John Macrae, Locomotive Foreman, C. P.R., Swift Current, Sask., born at Springburn, Glasgow, Scotland, Jan. 30, 1879.

P. A. Macdonald, Manitoba Public Utilities Commissioner, Winnipeg, born at Gananoque, Ont., Jan. 6, 1857.

G. C. Martin, General Traffic Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Creemore, Ont., Jan. 2, 1866.

H. Mitchinson, Safety Engineer, Western Lines, Canadian National Rys., Winnipeg, born at Gateshead on Tyne, Eng., Jan. 18, 1882.

William Phillips, Canadian Representative, Cunard Steamship Co., Montreal, born at Toronto, Jan. 31, 1870.

W. Pratt, Manager, Dining and Parlor Cars, Hotels and News Department, Canadian National Rys., Toronto, born at Sibbertoft, Northamptonshire, Eng., Jan. 18, 1870.

John Pullen, President, Canadian Express Co., Montreal, born at Shepton Mallet, Eng., Jan. 23, 1863.

Ralph M. Reade, Superintendent, City Division and Quebec County Railways, Quebec Railway, Light & Power Co., Quebec, born at Llanelly, Wales, Jan. 1, 1868.

L. J. Rouleau, Commercial Agent, G.T. R., Quebec, Que., born at Montreal, Jan. 6, 1879.

A. F. Stewart, Chief Engineer, Eastern Lines, Canadian Northern Ry., Toronto, born at West Bay, N.S., Jan., 1864.

J. G. Sullivan, ex-Chief Engineer, Western Lines, now Consulting Engineer, C.P.R., Winnipeg, born at Bushnells Basin, N.Y., Jan. 11, 1863.

Ross Thompson, ex-Chief Engineer, and Managing Director, St. John and Quebec Ry., Fredericton, N.B., now of Montreal, born at Newry, Ireland, Jan. 1, 1865.

W. J. Uren, Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, Que., born at St. Marys, Ont., Jan. 23, 1872.

T. H. White, Chief Engineer, Canadian Northern Pacific Ry., Vancouver, B.C., born at St. Thomas, Ont., Jan. 27, 1848.

A. Wilcox, General Superintendent, Central District, Canadian National Rys., Winnipeg, born at Kincardine, Ont., Jan. 2, 1865.

**Impounding of Livestock**—The Railway Association of Canada has issued the following circular to member railways: Impounding of livestock found running at large, on or in the immediate proximity of railway right of way, is suggested as a means of reducing loss to both livestock owners and railways through animals being struck by trains, and as a measure of safety to the travelling public. It is recommended that the railways notify the officials of municipalities wherein trouble of the kind mentioned is experienced, that the suggested action is contemplated and that co-operation of such officials be requested. At places where pounds are not provided, it may be possible to arrange with the public officials for establishment of them.

**Mechanical Locomotive Firing**—The G.T.R. has been making a test of a mechanically fired locomotive between Montreal and Brockville, Ont., for five round trips, with maximum tonnage. The locomotive was then transferred to the Ontario lines, for a test of five trips between Fort Erie and Sarnia tunnel, after which it was to be returned to the G.T.R. lines in New England, to which territory it belongs. In each case the test was against another locomotive of the same type, hand fired. The Locomotive Stoker Co.'s type D. duplex stoker is used on the mechanically fired locomotive.

**The Alberta Truck Transportation Co.** has been organized in Calgary, Alta., with authorized capital of $150,000 to carry passengers and freight by motor truck. The routes suggested out of Calgary are to Medicine Hat, Macleod, Banff, Lethbridge and Edmonton. It was stated Dec. 6, that the service will be started as soon as the trucks can be delivered. The officers of the company are reported to be: President and General Manager, M. D. East; Vice President and Assistant General Manager, R. Park; Secretary Treasurer, J. O. Campbell.

**Toronto, Yonge Street Station,** is the new name for the C.P.R.'s station known heretofore as North Toronto Station.

# Sir Robert Borden's Address to a Railway Brotherhood at Ottawa.

The Prime Minister, in addressing the Canadian Legislative Board, International Brotherhood of Locomotive Firemen and Enginemen at Ottawa, Dec. 8, 1919, said: "It is my privilege on behalf of the government to extend to you a welcome to Ottawa, and to convey our best wishes that this annual gathering may be useful and successful in every way. In the early days of my parliamentary career, I had occasion to consider very attentively the character of the organizations established by the various railway brotherhoods, and ever since I have been impressed with the thoroughness of their system, and with the fairness of their procedure for dealing with controversial questions. These organizations must necessarily exercise great power and influence in the policy which they pursue, and in the purposes which they undertake. Such power and influence carry with them a corresponding responsibility. I believe that on the whole this responsibility has been fulfilled justly and considerately, having regard to the national interests as a whole.

"History teaches us that every great war has been followed by some period of unrest and disturbance among the peoples of the belligerent nations. Such an outcome seems inevitable, and one is not surprised that such conditions prevail today, to a greater or less extent, among all the nations which have taken part in the tremendous and world wide conflict through which we have passed. While Canada has not been wholly free from these tendencies, there is reason to believe that no country in the world has suffered less from them than our Dominion. I am confident that the strong, sound, common sense of the Canadian people will support all authorities, whether federal, provincial or municipal, in maintaining public order, in the just enforcement of the law and in upholding institutions and traditions founded upon ideals of ordered liberty and progress.

'I have already spoken in parliament of the character and terms of the treaty of peace which was consummated a few months ago, and which will doubtless be ratified by the required number of belligerent nations in the early future. That treaty embodied a sincere attempt to bring together the nations of the world in such co-operation and by such methods as would greatly minimize the risk of future wars. It is impossible to imagine that the existing organization of society can be maintained, if the unmeasured destruction of human life and the maiming of countless millions, with all the tragic sorrow and sacrifice which have been the outcome of this war, are to be the sole or even the chief means of arbitrament in international disputes. If the plenipotentiaries of the allied powers had not given their best energy and their highest endeavor to prevent any such outcome in the future, assuredly they would have failed in the duty which they owe to this and future generations. No nation can divorce itself from the responsibility measured by its power and influence. More and more the oceans have become international highways. There is no hermit nation and there can be none. I venture to submit to you a conclusion which I think may be drawn from the purpose embodied in the League of Nations covenant. That covenant received the unanimous approval of plenipotentiaries representing 32 nations, including the dominions of the British Empire. Only those who participated in the deliberations of the Peace Conference can fully realize the rivalry of ambitions, the sharp antagonisms, the intense jealousies, and the deep rooted prejudices which manifested themselves between peoples represented at the conference. Moreover there is every diversity in the standards of living, the educational and industrial development, the temperament and character of the peoples concerned. It is at once remarkable and highly encouraging that all these nations should have agreed upon the organization and the methods by which their co-operation is assured, in the endeavor to secure the world's peace so far as that is humanly possible.

"One lesson which we may learn from this relates to our own domestic concerns. In any country, but especially in a country of vast area and scattered communities, the problem of transportation is all important. The efficiency of transportation in Canada is an essential factor in the national life. Railways, waterways and highways all have their part. From conditions which have gradually developed during many years has arisen the result that about one half the total railway mileage of Canada is, or shortly will be, in the ownership of the state. You must realize, and I hope you will agree, that this condition emphasizes the importance of devising some means by which this great essential and national activity shall not be interrupted or prejudiced by disputes between employers and employed. Even as between a private corporation, operating a great public utility, and its employes there should be some more reasonable method than the imposition upon the general public of the inconvenience, the loss, and the suffering which are occasioned by strikes. If, between jealous and sometimes antagonistic nations, the principle of settling international disputes by peaceful means has been acknowledged and adopted, surely disputes between employers and employed can be investigated and adjusted by means other than those which may bring upon the whole people distress and suffering comparable to that entailed by war. So far as railways in the ownership of the state are concerned, there is one additional consideration of which you should not lose sight. Those responsible for the administration of state railways are not actuated or influenced therein by any motive of private interest. Their duty is, on the one hand to the public whom they serve, and on the other hand to the employes who also serve the same public. So that in this instance employers and employed alike serve the people as a whole.

"I commend to your most thoughtful consideration the results which have been obtained in this country by the establishing of the tribunal known as Board of Adjustment No. 1 in connection with the Canadian Railway War Board. It was constituted on Aug. 7, 1918, under an agreement made between the Canadian Railway War Board and the six leading railway brotherhoods. It consists of 12 members, 6 representing the railway companies and 6 the brotherhoods. The board has given decision in 52 cases, as well as 6 supplementary cases, or in all, 58 disputes, which have thus been settled without resort to strike. In addition about a dozen potential disputes have been adjusted through the board's good offices without the necessity of a formal hearing. Disputes have also been adjusted for organizations which were not parties to the agreement. It is open to any class of railway or transportation employes to present a case to the board, provided they agree to be bound by its decision. Is there not in this record, food for the most careful reflection and consideration as to the future determination of disputes between organization of railway employes and those responsible for the administration of the railways? In other countries there have recently been legislative proposals for the prohibition of strikes. It would not be my purpose to have the question approached in that way. The members of the railway organizations are citizens of this country, interested like others in its development, its progress and its orderly government. Any movement to make permanent, and still more efficient, the methods which have had such good results during the past 18 months, might well originate with them. This obligation is imposed, and this responsibility is created, not only by the power and influence of the organizations in question, but by the duty which their members owe to the state as good citizens. On our part we must not be unmindful of corresponding obligations. The problem of administering about 22,000 miles of railways in this country is one of exceptional moment and difficulty. Upon its successful solution probably depends the success of state ownership, not only in Canada, but upon the whole North American continent. We must give earnest attention to some means by which the employes shall have just representation in the executive administration of this great system. I have given to this question some study in the consideration of the problem as a whole and you may be assured that such a proposal will command my entire sympathy.

"I am grateful for the opportunity of addressing you, and I pray that the new year, which will shortly dawn, may bring to you and to all our people, every happiness and prosperity."

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The Paris, Lyons and Mediterranean Ry. of France, as a result of successful experiments with a new process of using oil for locomotive fuel, is reported to be transforming 200 of its locomotives to oil burners.

Railway Equipment Needed—Howard Elliott, President, Northern Pacific Rd., is reported to have stated before the Association of Life Insurance Presidents, at New York, recently, that United States railways need an equipment of $3,000,000,000 and that if provision is not made for developing railways continuously, the cost of living, instead of being reduced, will go higher.

Railway Lands Patented — Letters patent were issued during October for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows,—

| | Acres |
|---|---|
| Alberta and Great Waterways Ry. | 137.06 |
| Canadian Northern Ry. | 795.43 |
| Canadian Pacific Ry. | 1.31 |
| Edmonton, Dunvegan and British Columbia Ry. | 5.95 |
| Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. | 6.68 |
| Total | 946.43 |

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 274. Nov. 20.—Interpreting, on application of Canadian Railway War Board on behalf of railway companies, certain sections of the Railway Act, 1919, re free transportation.

28,983, 28,984. Nov. 11.—Approving Bell Telephone Co. agreements with Maniwaki Electric Co., Ottawa County, Que., Oct. 28, and Augsburg Telephone Association, Renfrew County, Ont.

28,985. Nov. 11.—Authorizing C.P.R. to build spur for Cardston Creamery Association, Cardston, Alta.

28,986. Nov. 12.—Ordering Grand Trunk Pacific Branch Lines Co. to appoint station agent at Hoey, Sask., and to build station by June 30, 1920.

28,987. Nov. 8.—Authorizing Quebec, Montreal & Southern Ry. to use bridge over Salvail River, near St. Jude, Que.

28,988. Nov. 10.—Approving location of Canadian Northern Pacific Ry., Kamloops-Vernon-Kelowna-Lumby Branch, from mile 14.23 to 32.96. east from Kamloops Jct., B.C.

28,989. Nov. 11. Authorizing G.T.R. to operate over two spurs, serving Roger Miller & Sons, Toronto.

28,990. Nov. 12.—Recommending to Governor in council for sanction, agreement between Edmonton, Dunvegan and British Columbia Ry., and Alberta and Great Waterways Ry., May 3, 1918, covering joint use of each company's terminal property at Edmonton, Alta.

28,991. Nov. 10.—Authorizing C.P.R. to build two spurs for Eugene Patenaude, Loranger Tp., Que.

28,992. Nov. 10.—Approving location of Canadian Northern Pacific Ry. Kamloops-Vernon-Kelowna-Lumby Branch, from mile 0 to 14.23, Lumby Jct. to Lumby, B.C.

28,993. Nov. 10.—Relieving Toronto, Hamilton & Buffalo Ry. from maintaining station agent at Mineral Springs, Ont.

28,994. Nov. 10.—Approving location of Canadian Northern Pacific Ry. Kamloops-Vernon-Kelowna-Lumby Branch from mile 0 to 33.26 south, and mile 0 to 1.29 north, Vernon to Kelowna, B.C.

28,995. Nov. 10. Authorizing Saskatchewan Government to build crossing at south end of Canadian National Rys. station grounds at Osler, Sask.

28,996. Nov. 12. Approving C.P.R. clearances of extension to Farmers' Exchange Building, Salmon Arm, B.C.

28,997. Nov. 12.—Approving location and details of Michigan Central Rd. telegraph station at Edward, Ont.

28,998. Nov. 12.- Authorizing Canadian National Rys. to build siding across public road between lots 224 and 226, Cons. 10 and 13, Chicoutimi and Jonquiere Tps., Que.

28,999. Nov. 12.—Authorizing C.P.R. to build spur for H. L. Martin Lumber Co., Saskatoon, Sask.

29,000. Nov. 8.—Rescinding order 27,254, May 26, 1918, re Quebec, Montreal & Southern Ry. train service, between Montreal and Sorel, and between St. Lambert and Fortierville, Que.

29,001. Nov. 12.—Dismissing complaint of Black & Son, Belleville, Ont., against limitation of hours of collection of fresh fish shipments by express companies to period between 8 a.m. and 5 p.m. each day.

29,002. Nov. 11.—Extending to June 30, 1920, time within which Kettle Valley Ry. shall erect fences from mile 56.3 to Osprey Lake, mile 38, gates to be put in where required.

29,003 to 29,006. Nov. 11.—Authorizing C.P.R. to build bridges over Kneehill Creek at 4 points on its Acme to Empress extension, Langdon North Branch.

29,007. Nov. 12.—Authorizing C.P.R. to build spurs for Southern Saskatchewan Co-operative Stock Yards, Ltd., Moose Jaw, Sask.

29,008. Nov. 12.—Authorizing Canadian National Rys. to build passing siding across public road on Lots 18 and 19, Con. B, Murray Tp., Ont.

29,009. Nov. 13.—Dismissing, after hearing at Toronto, Oct. 31, matter of Canadian Car Demurrage Rules, as affected by strikes.

29,010. Nov. 13—Approving C.P.R. clearances of ash conveyor, ash tank, and accessories to be erected at Place Viger Hotel, Montreal.

29,011. Nov. 10.—Approving location of Canadian Northern Pacific Ry. Kamloops-Vernon-Kelowna-Lumby Branch, mile 66 to 82.22 east from Kamloops Jct., B.C.

29,012. Nov. 10.—Authorizing Windsor, Essex and Lake Shore Rapid Ry. to build siding for McDonald Tobacco Co., Kingsville, Ont.

29,013. Nov. 12.—Approving detail plans of dam built by Canadian Northern Quebec Ry. across North River for Canadian Consolidated Rubber Co., St. Jerome, Que.

29,014. Nov. 13.—Authorizing Ontario Government to build crossing over C.P.R. Sault Ste. Marie Branch at the Sault Ste. Marie and Sudbury trunk road west of Cutler station, Ont.

29,015. Nov. 13.—Approving Canadian National Rys. location through Tps. 21 and 22, Ranges 11 and 12, west principal meridian, Man., mile 59.49 to 69.73.

29,016. Nov. 13.—Authorizing G.T.R. to build spur for Christie Henderson Co., near Hespeler, Ont.

29,017. Nov. 13.—Authorizing City of Montreal to make grade crossing over Canadian National Rys. at Haig St.

29,018. Nov. 14.—Approving agreement, Oct. 28, between Bell Telephone Co. and Huron, Tp., Ont.

29,019. Nov. 14. —Approving location of Esquimalt & Nanaimo Ry. Great Central Lake Branch from its Alberni Branch, in District Lot 42, at mile 0 to District Lot 204, near Swamp River and Great Central Lake at mile 10, and a portion of its Sproat Lake Branch from the Great Central Lake Branch in Lot 84, to Lot 98, about 1½ miles.

29,020. Nov. 17.—Authorizing Canadian National Rys. to divert road in s.w. ¼ and s.e. ¼. Sec. 15, Tp. 55, Range 24, west 3rd meridian, Sask.

29,021. Nov. 17.—Authorizing G.T.R. to build spur for R. H. Ashton, Williamsburg Tp., Ont.

29,022. Nov. 17.—Relieving Michigan Central Rd. from maintaining day and night watchmen and providing further protection at crossing near Ruscomb station, Ont.

29,023. Nov. 15.—Authorizing Canadian Northern Western Ry. for four months from date, to carry freight over its Hanna-Medicine Hat Branch from Bonar, mile 256.9 from Saskatoon to mile 47.

29,024. Nov. 15.—Authorizing G.T.R. to install two automatic bells at Government Road crossing, Beachville, Ont.

29,025. Nov. 15.—Dismissing complaint of residents of Wilberforce, Ont., re Irondale, Bancroft and Ottawa Ry. (C.N.R.) train service.

29,026. Nov. 15.—Authorizing Canadian National Rys. to build its Amaranth Extension across highways between miles 59.49 and 69.73, Man.

29,027. Nov. 15.—Authorizing G.T.R. to build siding for Consumers Metal Co., Lachine, Que.

29,028. Nov. 17.—Authorizing Canadian National Rys. to divert road in the n.w. ¼ Sec. 35, and n.e. ¼ Sec. 34, Tp. 54, Range 24 west 3rd meridian, Sask.

29,029. Nov. 11.- Relieving C.P.R. from providing further protection at Notre Dame St. crossing, at north end of station at Roxton Falls, Que.

29,030. Nov. 15. Dismissing application of United Brotherhood of Carpenters and Joiners of America, Local 730, for order directing Canadian National Rys. to run passenger train between Quebec and Loretteville Parish, Que.

29,031. Nov. 15. Dismissing application of Z. Marien, Cabane Ronde, Que., for order directing C.P.R. to deepen drain on Lot 321 and between Lots 322 and 323, also C.P.R. culvert 370.

29,032. Nov. 17.—Authorizing Ontario Government to build highway crossing over C.P.R. Sault Ste. Marie Branch at Sudbury Trunk Road, between Algoma and Spragge stations, mileage 44.2 from Webbwood, Ont.

29,033. Nov. 18.—Relieving C.P.R. from providing further protection at highway crossing at Sintaluta, Sask.

29,034. Nov. 18.—Rescinding orders 27,741, 27,864, and 28,339, respecting Quebec, Montreal and Southern Ry. train service.

29,035. Nov. 18.—Ordering G.T. Pacific Ry. to appoint station agent at Peers, Alta.

29,036. Nov. 18. Extending to Dec. 15 time within which Canadian National Rys. shall build third class station and extension to passing track at Elie, Man.

29,037. Nov. 18.—Relieving C.P.R. from providing further protection at highway crossing near Lang station, Sask.

29,038. Nov. 18.—Authorizing G.T.R. to operate over Toronto Harbor Commissioners' siding to Nukol Fuel Co.'s premises, Toronto.

29,039. Nov. 18.—Relieving G.T.R. from providing further protection at crossing at New Hamburg, Ont.

29,040. Nov. 18.—Authorizing Canadian Northern Western Ry. Co. to divert north and south road between Secs. 23 and 24, Tp. 17, Range 9, west 4th meridian, Alta.

29,041. Nov. 18.—Authorizing Toronto, Hamilton & Buffalo Ry. to buid spur for Dominion Lumber & Coal Co., Hamilton, Ont.

29,042. Nov. 18.—Approving plans and specifications of Cheeseman and branch drains to be built under G.T.R. in south half of Lot 34, Con. 9, Malahide Tp., Ont.

29,043. Nov. 17.—Authorizing Niagara St. Catharines & Toronto Ry. (C.N.R.) to build spur for Interlake Tissue Co., Merritton, Ont.

29,044. Nov. 19.—Approving route map of C.P.R. Lanigan Northeasterly Branch from mile 26 to 32.

29,045. Nov. 19.—Approving route map of Kettle Valley Ry., from Penticton, B.C., south to International Boundary on east side of Osoyoos Lake.

29,046. Nov. 19.—Authorizing C.P.R. to build extension to spur for Dominion Glass Co., Redcliffe, Alta.

29,047. Nov. 19.—Authorizing Michigan Central Rd., to remove station agent at Hewitt, Ont.

29,048. Nov. 19.—Ordering Canadian National Rys. to complete additions and alterations to station at Kamsack, Sask., by May 15, 1920.

29,049. Nov. 19.—Relieving C.P.R. from providing further protection at highway crossing at mile 2, Colonsay Subdivision, Sask.

29,050. Nov. 17.—Ordering G.T.R. to build farm crossing for A. McGuiness, Marysville, Ont.

29,051. Nov. 19.—Autborizing G.T.R. to build spur for Georgetown Coated Paper Mills, Esquesing Tp., Ont.

29,052. Nov. 20.—Ordering Pere Marquette Rd. to install automatic bell at highway crossing near Middlemarch station, Ont.

29,053. Nov. 19.—Ordering G.T.R. to erect shelter for passengers, and platform and shelter to load and unload freight at the E. Clark section house, near Frome, Ont., and to stop trains on flag at Paynes Mills, and Bairds, Ont.

29,054, 29,055. Nov. 21. —Authorizing Canadian National Rys. to build bridges over Whitefish River at miles 18.9 and 21.6, North Lake Subdivision, Ont.

29,056. Nov. 20.—Approving revised location of C.P.R. Rosetown Southeasterly Branch from mile 40 to mile 43.23, in Sec. 7, Tp. 24, Range 15, west 3rd meridian, Sask.

29,057. Nov. 21.— Approving Campbellford, Lake Ontario & Western Ry. (C.P.R.), revised location through Cobourg, Ont., from Division St. to Ontario St., miles 119.69 to 120.18.

29,058. Nov. 21.—Authorizing Canadian National Rys. to build bridge over Whitefish River at mile 20.3, North Lake Subdivison, Ont.

29,059. Nov. 20.—Relieving Hamilton Radial Electric Ry. from providing further protection at crossing at Birmingham Ave., Hamilton, Ont.

29,060. Nov. 22.—Approving C.P.R plan showing change of junction numbers and dwarf signals pipe connected.

29,061. Nov. 22.- Extending to Feb. 22, 1920. time within which C.P.R. shall complete spur for Gunns Ltd., Toronto.

29,062. Nov. 22.—Authorizing G.T.R. to operate over Toronto Harbor Commissioners' siding on Villiers St., Toronto.

29,063. Nov. 26.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur for Canadian Westinghouse Co., Hamilton, Ont.

29,064. Nov. 25.—Authorizing C.P.R. to build spur for Federal Coals, Ltd., Lethbridge, Alta.

29,065. Nov. 25.—Authorizing G.T.R. to operate over Burlington Steel Co.'s sidings, Hamilton, Ont., on undertaking to keep men off tops of cars.

29,066.—Approving location of Canadian Northern Pacific Ry. Kamloops-Vernon-Kelowna-Lumby Branch, mile 32.96 to 56, east from Kamloops Jct.

29,067. Nov. 25.—Authorizing C.P.R. to build spur for Imperial Oil Ltd., Moose Jaw, Sask.

29,068. Nov. 21.—Approving agreement, Nov. 3, between Bell Telephone Co., and Mount Forest Wellington & Grey Telephone Co., Wellington and Grey Counties, Ont.

29,069. Nov. 26.—Authorizing G.T.R. to build spur for The Wm. Kennedy & Sons, Ltd., Owen Sound, Ont.

29,070. Nov. 26.—Authorizing G.T.R. to build spur for Toronto Harbor Commissioners, connecting with Dominion Shipbuilding Co.'s spur, Toronto.

29,071. Nov. 26.—Authorizing Canadian National Rys. to divert road between Secs. 7 and 18, Tp. 25, Range 20, west 3rd meridian, Sask.

29,072. Nov. 26.—Extending to Feb. 26, 1920. time within which C.P.R. shall build spurs for Merritt Collieries Ltd. mile 41.2 from Spences Bridge, B.C.

29,073. Nov. 26.—Authorizing G.T.R. to remove station agent at Keppel, Sask., caretaker to be appointed to see that station is kept clean, heated and lighted for passengers to care for l.c.l. freight and express shipments.

29,074. Nov. 27.—Ordering Grand Trunk Pacific Ry. to build farm crossing for J. Downie, Viking, Alta.

29,075. Nov. 27.—Extending to Dec. 31, 1919, time within which Niagara, St. Catharines & Toronto Ry. (C.N.R.) shall install interlocking plant where it crosses G.T.R. on Elm St., Port Colborne, Ont.

29,076. Nov. 26.—Authorizing C.P.R. to build spur for Canadian Avery Co., Winnipeg.

29,077. Nov. 27.—Ordering C.P.R. to build standard portable station at Squilax, B.C., by June 15, 1920.

29,078. Nov. 27.—Recommending to Governor in council for sanction, agreement, July 1, 1919, with C.P.R. re G.T.R. trains over C.P.R. at North Bay, Ont.

29,079. Nov.27.—Relieving Canadian National Rys. from providing further protection at highway crossing near North Battleford, Sask.

29,080. Nov. 27.—Relieving C.P.R. from providing further protection at highway crossing at mile 13, Belleville Subdivison, Ont.

29,081. Nov. 27.—Relieving Lake Erie & Northern Ry. from providing further protection at crossing between Cons. 2 and 3, Townsend Tp., Ont

29,082. Nov. 27.—Ordering Grand Trunk Pacific Ry. forthwith to erect stock yard at Heath, Alta.

29,083. Nov. 21.—Authorizing Toronto, Hamilton & Buffalo Ry., and G.T.R. to discontinue operating over Berlin Machine Works spur, Hamilton, Ont.

29,084. Nov. 28.—Approving Kettle Valley Ry. location miles 1.62 to 3.99 from Penticton wharf, B.C.

29,085. Nov. 28.—Amending order 28,958, Nov. 4, re C.P.R. siding for J. H. Gignac, Ltd., Quebec, Que.

29,086. Dec. 1.—Approving location and plans of C.P.R. station at Corinne, Sask.

29,087. Nov. 28.—Ordering C.P.R. to make highway crossing between Lots 18 and 17, Range 8, of Eardley Tp., Que., cost to be paid by the township.

29,088. Nov. 28.—Ordering C.P.R. to make highway crossing between Lots 10 and 11, Range 6, Eardley Tp., Que., cost to be paid by the township.

29,089 to 29,092.—Approving revised location of Canadian Northern Pacific Ry. Kamloops-Vernon-Kelowna-Lumby Branch, mile 37.22 to 39.64; 10.4 to 11.5 from Lumby Jct.; s.w. ¼, Sec. 28 to lot 474, Group I.C.G. Tp. 18, Range 14, near mileage 28.4 from Kamloops Jct., and mile 41.60 to 43.58, east from Kamloops Jct., B.C.

29,093. Dec. 1.—Authorizing Canadian Northern Ontario Ry. to build spur for Ontario Good Roads Commission at mile 244.7, Rideau Subdivision.

29,094. Dec. 2.—Approving agreement, Nov. 17, between Bell Telephone Co. and Rumney Settlement Telephone Co., Victoria County, Ont.

29,095. Dec. 1.—Ordering G.T.R. to build subway for vehicular and pedestrian traffic under its tracks at St. Paul's Ave., Brantford, Ont.

29,096. Dec. 2.—Authorizing C.P.R. to build spur for City of Sherbrooke, Que.

29,097. Dec. 3.—Approving Canadian Northern Ontario Ry. at mile 21.7, Nipigon Subdivision, Ont.

29,098. Dec. 3.—Amending order 29,060, Nov. 22, re C.P.R. plan of change in function numbers and dwarf signals pipe connected.

29,099. Dec. 3.—Authorizing Canadian Northern Ontario Ry. to rebuild bridge over Blackwater River at mile 21.7, from Jellicoe, Ont.

29,100. Dec. 5.—Authorizing G.T.R. to build temporary track on public road allowance between Cons. 1 and 2, Brantford Tp., Ont.

29,101. Nov. 22.—Ordering Vancouver, Victoria & Eastern Ry. and Navigation Co. (G.N.R.) to fill in planks between its tracks on Front St., Vancouver, from Columbia St., to point opposite Coughlan property, as now filled in by the city.

29,102. Dec. 5.—Dismissing complaint of Great West Coal Co., Brandon, Man., against Grand Trunk Pacific Ry. freight charges on coal from Drumheller to Raymore, Sask., and afterwards diverted to Punnichy, Sask.

29,103. Dec. 8.—Rescinding order 28,872, Oct. 7, re C.P.R. spur for E. J. Bawlf & Co., Winnipeg.

29,104. Dec. 3.—Ordering Canadian National Rys. to maintain crossing on road allowance between Sec. 18 and 19, Tp. 2, Range 7, east principal meridian, and to make diversion on north and south road through southeast portion of Sec. 19, connecting it with east and west road.

29,105. Dec. 5.—Approving revised location of C.P.R. Russell Northerly Branch from Sec. 10, Tp. 21, Range 28, at mile 0 to Sec. 36, Tp. 22, Range 28, west principal meridian at mileage 12.34.

29,106. Dec. 3.—Authorizing C.P.R. and Pere Marquette Rd. to operate over crossing at Walkerville Jct., Ont., and the interlocking plant, as rebuilt.

29,107. Dec. 5.—Authorizing C.P.R. to build its Langdon North Branch, Acme to Empress, at grade, across 19 highways between mileage 39.03 and 52.79, Sask.

29,108. Dec. 6.—Authorizing Canadian National Rys. to cross 23 highways with its Oakland Extension, Man.

29,109. Dec. 6.—Authorizing Canadian Northern Ontario Ry. to divert side road between Lots 20 and 21, Con. 7, Chisholm Tp., Ont.

29,110. Dec. 12.—Rescinding order 24,673, Jan. 22, 1916, de cancellation by railways of all return transportation of live stock shipped west of Port Arthur, effective Feb. 1, 1916.

29,111. Dec. 9.—Dismissing application of City of Port Alberni, B.C., for order directing Esquimalt & Nanaimo Ry. to remove obstruction and to restore public highway known as Shore Road along the water front.

29,112. Dec. 5.—Authorizing Grand Trunk Pacific Ry. to divert highway in Sec. 24, Tp. 12, Daly Municipality, Man.

29,113. Dec. 5.—Ordering that cost of maintaining west approach to Provencher Ave. traffic bridge, Winnipeg, be paid by Canadian National Rys.

29,114. Dec. 9.—Authorizing Grand Trunk Pacific Saskatchewan Ry. to operate over crossing of C.P.R. Weyburn-Lethbridge and Soo Branches, at Weyburn, Sask., pending installation of interlocking plant.

29,115. Dec. 9.—Authorizing Canadian National Rys. to rebuild bridge over West River, Lachute, Que.

29,116. Dec. 6.—Authorizing C.P.R. to divert road allowance on east boundary of n.w. ¼ Sec. 2, Tp. 28, Range 22, west 2nd meridian, Sask.

29,117. Dec. 9.—Ordering C.P.R. to appoint station agent at Sylvan Lake, Alta., by July 1, 1920.

29,118. Dec. 9.—Approving Grand Trunk Pacific Ry. clearances at coal tipple works over North American Collieries' spur, at Evansburgh, Alta.

29,119. Dec. 9.—Relieving Canadian National Rys. and Grand Trunk Pacific Ry. from maintaining a signal man on Sundays at crossing at Camrose, Alta.

29,120, 29,121. Dec. 9.—Ordering C.P.R. to appoint station agents at Benalto and Kootuk, Alta., by July 1, 1920.

29,122. Dec. 10.—Dismissing complaint of Board of Grain Commissioners for Canada against alleged unsatsfactory conditions at Canadian National Rys. crossing over Powder House Road, from Fort William and Port Arthur highway to terminal elevators at Port Arthur, Ont.

29,123. Dec. 9.—Dismissing complaint of Lake Lumber Co., J. C. Wilson Lumber Co., and merchants of Qualicum Beach, B.C., against Esquimalt & Nanaimo Ry.'s freight train service.

29,124. Dec. 6.—Approving Toronto Suburban Ry. bylaw, Nov. 20, authorizing W. J. Radford and Frank Butcher, to issue tariffs of passenger and freight tolls, respectively.

29,125. Dec. 9.—Authorizing C.P.R. to build spur for Iroquois Sand & Gravel So., Scarboro Tp., Ont.

29,126. Dec. 9.—Authorizing Rutland Rd., and Rutland and Noyan Ry. to alter interlocking plant at crossing of G.T.R. at Noyan Jct., Que.

29,127. Dec. 10.—Ordering Canadian National Rys to install wigwags and improved automatic bell at crossing of Amelia St., Fort William, Ont.

29,128. Dec. 10.—Dismissing application of Westlock, Alta., Board of Trade, for order directing Edmonton, Dunvegan & British Columbia Ry. to make highway crossing over its track at Westlock.

29,129. Dec. 10.—Dismissing application of City of Saskatoon, Sask., for authority to make highway crossing over C.P.R. at Avenue J.

29,130, 29,131. Dec. 10.—Ordering Canadian National Rys. to install wigwags and improved automatic bells at Brock St. and Frances St. crossings, Fort William, Ont.

29,132. Dec. 11.—Relieving C.P.R. from complying with requirmeents of order 16,900, June 27, 1919, which approved C.P.R. tariff of class freight rates between stations west of North Bay to Mackenzie and Sault Ste. Marie, Ont., and stations in Canada east of North Bay on the C.P.R. and connceting railways.

29,133. Dec. 10.—Authorizing C.P.R. to build spur for J. J. Gartshore, in Lot 38, Block A, Plan 2035, York Tp., Ont.

29,134. Dec. 9. — Ordering that demurrage charged by railways in connection with delays to cars at Winnipeg, due to the general strike there, from May 15 to July 1, inclusive, be $1 a car a day.

29,135. Dec. 10.—Relieving C.P.R. from providing further protection at crossing at mile 89.4, Shogomac Subdivision, N.B.

29,136. Dec. 9.—Authorizing Canadian Northern Western Ry. to divert highway crossing between Secs. 19 and 30, Tp. 57, Range 21, west 4th meridian, Alta.

29,137. Dec. 10.—Dismissing Grand Trunk Pacific Ry.'s application for extension of time within which to complete station at Prince George, B.C., as directed by order 28,680, Aug. 20.

29,138. Dec. 9.—Authorizing C.P.R. to close station at Phoenix, B.C., and to discontinue train service on condition that station be reopened and train service continued at any time on board's request, should conditions warrant.

29,139. Dec. 11.—Authorizing C.P.R. to divert road allowance on north boundary of n.e. ¼ Sec. 32, Tp. 38, Range 5, at mile 100.2, Outlook Subdivision, Sask.

29,140. Dec. 11.—Approving changes in C.P.R. interlocking plant at Drumbo, Ont.

29,141. Dec. 12.—Approving changes in C.P.R. interlocking plant at crossing of G.T.R., Woodstock, Ont.

29,142. Dec. 11.—Authorizing Canadian Northern Ontario Ry. to extend siding across the highway between Cons. 2 and 3, Malvern, Ont.

29,143. Dec. 12.—Authorizing G.T.R. to build spur for Paris Sand and Gravel Co., South Dumfries Tp., Ont.

29,144. Dec. 11.—Relieving G.T.R. from providing further protection at first crossing west of Lacolle station, Que.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and Public Elevators in the East.

| Week ended Dec. 5, 1919. | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William— | | | | | | |
| C.P.R. | 146,746 | 33,274 | 99,288 | ..... | 26,796 | 306,104 |
| Empire Elevator Co | 229,681 | 109,839 | 163,491 | 14,077 | 18,276 | 535,364 |
| Consolidated Elevator Co. | 614,822 | 35,837 | 66,743 | 40,779 | 4,047 | 762,228 |
| Ogilvie Flour Mills Co. | 264,697 | 108,898 | 41,116 | ..... | 29,089 | 443,800 |
| Western Terminal Elevator Co. | 440,590 | 42,749 | 15,141 | 24,355 | 6,927 | 529,762 |
| G. T. Pacific | 369,264 | 160,514 | 37,503 | 13,071 | 14,208 | 594,560 |
| Grain Growers' Grain Co. | 297,059 | 171,358 | 123,491 | ..... | 40,876 | 632,784 |
| Fort William Elevator Co. | 186,939 | 109,386 | 15,587 | 8,900 | 5,400 | 317,212 |
| Northwestern Elevator Co. | 452,220 | 15,007 | 257,965 | 43 | 69 | 493,306 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 408,021 | 326,588 | 175,704 | 151 | 41,205 | 951,669 |
| Sask. Co-op. Elevator Co. | 646,893 | 165,347 | 81,068 | 23,513 | 11,706 | 923,527 |
| Canadian Government Elevator | 115,510 | 56,664 | 23,190 | 57,542 | 4,409 | 257,315 |
| Thunder Bay | 330,960 | 263,235 | 115,169 | 7,919 | 7,582 | 724,865 |
| Davidson and Smith | 100,770 | 84,138 | 27,720 | ..... | ..... | 212,628 |
| Eastern-Richardson | 303,588 | 57,853 | 44,342 | 7,514 | 29,653 | 442,950 |
| Vancouver Can. Gov't. Elevator | 2,649 | 28,169 | 1,363 | ..... | ..... | 32,181 |
| Total public terminal elevators | 4,910,409 | 1,759,858 | 1,056,881 | 197,864 | 240,243 | 8,165,255 |
| Saskatoon Can. Gov't. Elevator | 460,214 | 432,793 | 1,538 | ..... | ..... | 894,545 |
| | | | | | †3,671 | |
| Moose Jaw Can. Gov't. Elevator | 340,355 | 198,970 | 6,056 | 5,626 | 1,270 | 555,948 |
| Calgary Can. Gov't. Elevator | 1,536,343 | 327,691 | 17,382 | 182 | 5,629 | 1,887,227 |
| Total Interior Terminal Elevators | 2,336,912 | 959,454 | 24,976 | 5,808 | 10,570 | 3,337,720 |
| Depot Harbor | 173,775 | ..... | ..... | ..... | ..... | 173,775 |
| Midland— | | | | | | |
| Aberdeen Elevator Co | 311,551 | 452,257 | 101,763 | ..... | 62,857 | 928,428 |
| Midland Elevator Co. | 299,740 | 514,348 | 172,085 | ..... | 164,492 | 1,150,665 |
| Tiffin, G.T.P. | 1,461,836 | ..... | ..... | ..... | ..... | 1,461,836 |
| Port McNicoll | 1,925,808 | 991,329 | 89,128 | ..... | ..... | 3,006,265 |
| Goderich— | | | | | | |
| Elevator and Transit Co | 257,402 | 47,262 | ..... | ..... | ..... | 304,664 |
| Port Colborne— | | | | | | |
| Maple Leaf Milling Co., Ltd | 913,300 | ..... | ..... | ..... | ..... | 913,300 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 4,442,675 | 489,086 | 42,086 | ..... | 1,297 | 4,957,481 |
| Montreal Warehousing Co. | 1,701,281 | 56,887 | 10,622 | ..... | ..... | 1,768,790 |
| Ogilvie Flour Mills Co | 1,059,799 | 47,860 | ..... | ..... | ..... | 1,059,799 |
| Quebec Harbor Commissioners | 543,126 | 47,860 | ..... | ..... | ..... | 590,986 |
| West St. John, N.B., C.P.R | 471,405 | 76,555 | 23,450 | ..... | ..... | 571,410 |
| St. John, N.B., Can. Nat. Rys | 90,512 | ..... | ..... | ..... | ..... | 90,512 |
| Halifax, N.S | 101,835 | ..... | 41,082 | ..... | ..... | 142,917 |
| Total Public Elevators | 18,736,045 | 2,675,584 | 480,553 | ..... | 228,646 | 17,120,828 |
| Total Quantity in Store | 20,983,366 | 5,394,896 | 1,562,410 | 203,672 | 479,459 | 28,623,803 |

†Corn.

# Aerial Transportation Notes.

A. S. Baxendale, formerly Manager of the Pacific Cable Board, is reported to have been appointed Aerial Traffic Manager for the Aircraft Transport and Travel Co. of Great Britain.

The Aero Club of France is the agency through which an offer is reported to have been made of a prize of $100,000 for the design of an aircraft that will rise and land vertically, and have a speed of 134 miles an hour.

The Eastern Canada Air Lines have applied to the St. John, N.B., commissioners for aid in securing suitable grounds in the city for an aerodrome there. The company proposes to operate aircraft from St. John, to other points in the Maritime Provinces, the Magdalen Islands, Quebec and Ontario, and the Eastern States.

A London, Eng., cable states that a weekly airship service between England and North America is contemplated by a combination of aviation firms, which are credited with the intention of acquiring the R-34 and her sister ship the R-39. It is reported that these craft are being altered to meet requirements for freight and passenger carrying.

A Western Ontario branch of the Canadian Flying Club was formed in London, Ont., Dec. 6, with Major Hume Cronyn, M.P. as President, and Ivan Hunter as Secretary. It is proposed to get an aerodrome established so that when commercial flying begins in the spring, London will be able to provide accommodation and stop over privileges for passing machines.

The Royal Canadian Mounted Police will, it is reported, be the title of the former Royal North West Mounted Police after its amalgamation with the Dominion police. It is reported that the new force will use aircraft for patrolling the thinly populated areas of the northwest. The old time romance attaining to the R.N.W.M.P. will be revived by any extensive use of aeroplanes in its work.

H. W. Brodie, General Passenger Agent, C.P.R., Vancouver, is reported to have said Dec. 15, that the hydroplane will displace the ferry transportation between the mainland and Vancouver Island within the next few years and that the possibilities of aircraft developments will make transportation companies think twice before embarking in building or buying additional steamships for such services.

Major A. G. Lincoln is reported to be travelling through the prairie provinces obtaining estimates for the Dominion Government for the inauguration of a trans-Canada air mail and express service. It is said that a station will be located between Calgary and Banff, Alta., as the taking off place for the flight across the Rocky Mountains. Captain J. F. Hobbs is reported to have been making similar investigations in British Columbia.

The Prince Edward Island Transportation Co. is a party to an application to the Halifax, N.S., City Council, for permission to build an aerodrome at Halifax. The company, which is to operate in conjunction with the De Vere Aviation School, proposes to establish air vinces, with branch lines to Montreal, routes throughout the Maritime Provinces, with branch lines to Montreal, Boston and New York.

The Aerial Transport and Taxi Co. Ltd., has been incorporated under the Dominion Companies Act, with $75,000 authorized capital, and office at Winnipeg, to maintain and operate a service of air craft of all kinds for the carriage for hire of passengers, mail, express and freight between points within or without Canada. G. A. H. Dysart, A. E. Bell, H. N. Streight and R. Tidmus, Winnipeg, are the incorporators.

Captain Ross Smith, an Australian who left London, Eng., Nov. 12, to make a flight to Australia, within 30 days, reached Port Darwin, the most northerly town on the island, Dec. 10, well within the time limit. He won the £10,000 prize offered by the Australian Government, and a $10,000 prize offered by a London, Eng., newspaper. The route followed was via Cairo, Delhi, Rangoon, along the Malay peninsula, and the Oceanic Islands, and the distance flown is estimated at 11,500 miles.

The possibilities of Moncton, N.B., as a center for air routes, and the location of an aerodrome and aviation school are under consideration. The mayor and members of the city council received a deputation Dec. 10, when the advantages of Moncton as a center for aviation were urged. The council appointed a committee to act with the promoters in looking over sites and to report at a future meeting. It was stated that here would probably be 10 machines used on the line, with 6 for training purposes.

The Aerial Transport and Taxi Co. Limited, has been incorporated under the Dominion Companies Act with an authorized capital of $75,000 and office at Winnipeg, to operate aircraft services of all kinds for the carriage for hire of passengers, mails, express and freight between points within or without Canada, and with various other powers necessary for the carrying out of the same. The provisional directors are: G. A. H. Dysart, A. L. Dysart, A. E. Bell, H. M. Streight and R. Tidmus, Winnipeg.

Bishop-Barker Aeroplanes Ltd. has been incorporated under the Ontario Companies Act with authorized capital of $300,000 and office in Toronto, to manufacture and deal in all kinds of goods, ware and merchandise, and in particular to make and deal in, and to operate all kinds of aircraft; to organize and carry into effect aviation and flying meetings, exhibitions, completions and contests, etc.; to maintain lines of aircraft, to carry passengers, freight and goods by aircraft; to carry on schools for the teaching of flying, and to do various other things incidental thereto. A press report states that the transfer of the Bishop-Barker Co.'s interests has been completed, that Colonel W. G. Barker, V.C., is the managing director of enterprise, and that the Armour Heights aerodromes, Toronto, have been acquired as the headquarters of the business.

# Lotbiniere and Megantic Railway Bought by Dominion Government.

The Dominion Parliament passed an act in 1918 authorizing the Governor in council to acquire, under the provisions of the statutes of 1915, chap. 16, upon such terms as might be approved the Lotbiniere and Megantic Ry., together with such equipment and properties as might be deemed necessary for its operation. The consideration to be paid for the line and for the "equipment and appurtenances" to be the value thereof as determined by the Exchequer Court. In explaining the bill, which provided also for the purchase of the Quebec and Saguenay Ry., and the line known formerly as the Quebec, Montmorency and Charlevoix Ry., also from the Quebec Railway, Light, Heat & Power Co., the Minister of Railways gave the following information relating to the L. and M.R. The capital cost of the line was $349,208.85; and the price at which it would be taken over, subject to the finding of the Court of Exchequer, was to be $330,000. Parliament at the same session voted $300,000 to acquire the railway.

"(a) The line of railway commonly known as the Quebec Montmorency and Charlevoix Ry., extending from St. Paul Street in the City of Quebec, to St. Joachim, a distance of about 43 1-5 miles.

"(b) The Quebec and Saguenay, extending from its junction with the Quebec, Montmorency and Charlevoix Ry. at St. Joachim, in the County of Montmorency to Nairn Falls, in the County of Charlevoix, a distance of about 62 8-10 miles.

"(c) The Lotbiniere and Megantic Ry., extending from Lyster, in the County of Megantic, to St. Jean des Chaillons in the County of Lotbiniere, a distance of about 30 miles.

"That the authority given by the said act of 1916 was not exercised, owing to certain legal difficulties which arose in connection with the Quebec and Saguenay Ry., which line has since, however, been taken over by the government under authority of the appropriation acts passed during the first session of parliament this year. The Minister, on the advice of the Deputy Minister of Railways and Canals, recommends that, in pursuance of the above mentioned act, 1915, chap. 16, authority now be given for the purchase of the Lotbiniere and Megantic Ry. at the price of $330,000, such price to include the whole of the company's undertaking, including all real estate, tracks, buildings, franchises, rolling stock and tools, and all other property whatsoever of the company, free and clear of all encumbrances, and to be paid only after the amount has been appropriated by parliament for the purpose, and upon receipt of a deed of conveyance to be obtained through and satisfactory to the Justice Department, such conveyance to cover all the aforesaid property, free of all encumbrances and claims whatsoever; the extent of right of way including station grounds and terminals to be conveyed, to be such as may be satisfactory to the Railways and Canals Department, the said railway to be transferred to the Crown on Dec. 1, 1919, and, pending settlement, interest to be paid on the purchase price at the rate of 5% per annum from such date of final payment; the said railway to be operated as part of the Canadian Government Rys. System by the Canadian Northern Ry. board of directors. The Minister observes that the Lotbiniere and Megantic Ry. connects with the G.T.R. at Lyster Junction,

with the Canadian Government Rys. at Villeroy, and with the Quebec, Montreal and Southern Ry. at Fortierville.

"The committee concur in the foregoing recommendation and submit the same for approval."

The Quebec Railway, Light, Heat & Power Co.'s directors ratified the sale at a meeting in Montreal, Dec. 10, 1919.

The Lotbiniere & Megantic Ry., which was built under a Quebec charter, extends from Lyster on the G.T.R. to St. Jean des Chaillons, 30 miles. The results of its operations for the year ended June 30, 1918, were as follows:

| | | |
|---|---|---|
| **Earnings—** | | |
| Passenger earnings | $ 6,167.78 | |
| Freight and switching | 35,324.22 | |
| Other earnings | 15.00 | $41,507.00 |
| **Expenses—** | | |
| Maintenance of Ways and Structures | $11,824.11 | |
| Maintenance of equipment | 4,279.26 | |
| Traffic expenses | 411.00 | |
| Transportation | 13,817.79 | |
| General expenses | 5,575.40 | $35,907.56 |
| Net operating earnings | | $ 5,599.44 |
| **Deductions—** | | |
| Taxes | | $ 900.00 |
| | | $ 4,699.44 |
| **Corporate Income—** | | |
| Rentals | | $ 2,106.96 |
| Net income | | $ 2,592.48 |

The railway carried during the year under June 30, 1918, 11,370 passengers, and 62,867 tons of freight. The company was reported to own 4 freight locomotives, 2 first and 2 second class passenger cars, 1 box, 24 flat and 1 other car in freight service, and one caboose. The company received subsidies from the Dominion amounting to $96,000; and from Quebec, $126,994. In 1907, the Quebec Legislature incorporated the Quebec Eastern Ry. to build a railway from Sherbrooke to the site of the Quebec Bridge, with power to arrange for the operation of the line into Quebec; a branch line to Lyster, with power to acquire the Lotbiniere & Megantic Ry.; a branch to Lime Ridge, and unnamed branch lines. Extensions of time for the building of the lines were granted from time to time, but nothing was ever done. Several years ago the L. & M.R. was acquired by the Quebec Railway, Light, Heat and Power Co.

The Exechequer Court held several sittings towards the end of 1916, at which evidence as to the cost of the railway and its property was given.

The L. & M.R. has been operated for several years under the Quebec Railway, Light, Heat and Power Co.'s officials, G. W. Robins being the Superintendent at Lyster, Que.

# Conservation of Lumber in Farm, Street and Highway Crossings.

The following committee report was presented at the Roadmaster and Maintenance of Way Association's last annual meeting in Chicago:—

It rests with the maintenance of way department men to advocate substitutes for lumber to a larger extent than the managements have yet seen fit to do, or we ourselves have recommended. For instance, only a few roads have adopted such excellent substitutes as asphalt, road oil, macadam, etc., for farm, street and highway crossings, and while concrete is not a novelty on railways, as for years past its value and usefulness have been developing, this development has been much slower in the maintenance of way department than circumstances would appear to warrant, especially in the maintenance of way department than circumstances would appear to warrant, especially in the lighter forms of construction where timber has been and is now used, such as fence, mile and whistling posts, town and county markers, chaining stakes, gate posts, pipe line supports and signal and telegraph poles. However, it will be the purpose of this report to treat only of crossings.

It was, of course, following the lines of least resistance that plank or timber was laid between and outside the rails to permit a vehicle to be driven across a railway track, and, for a more highly finished job, planks of specified thickness, length and width were made standard supplies, and laid with care and precision, fastened with 6, 8 or 10 in. spikes and the ends leveled. Because of wear and tear, derailments, heaving in winter, etc., they had to be renewed frequently. Without going into details as to the maintenance expense of wooden crossings, a report from one supervisor's division shows that it required 53,678 ft. of lumber, 3,226 lb. of crossing spikes and a labor charge of $5,642.96 to maintain the public and private crossings on his territory for one year, the cost of the plank alone being $1,717.70. It is not the purpose of this report to go into the details of the unit cost of maintaining single crossings, but as the subject assigned to the committee implies, to advocate the conservation of lumber by using well recognized substitutes. If on one division 53,678 ft. of lumber can be conserved, assuming that it requires 512 ft. for one single track highway crossing or twice the amount for a double track crossing, and assuming that there are 50 or more highway crossings on each of 3,000 supervisors' divisions on the railways of the country, the use of some other material than lumber would mean the conservation of 76,800,000 f.b.m., amounting to $2,457,600. And this does not include farm crossings or streets sometimes planked solidly from one side to the other of six or more tracks.

Since maintenance is an operating expense, it has to be paid out of the income and as a crossing must be kept up continually, the method of maintaining it should be simple so as to be grasped readily by the average workman. To be practical the work should be performed with the least possible equipment and this should be of such character as will always be on hand. To be economical, the expense must be within reason and not exceed that of other methods and materials that are used for work of like nature, producing like results.

The committee recommends that, as far as possible, all rail joints be eliminated in road crossings; that good drainage be installed; that all road crossings in high speed tracks be made of crushed stone of standard size, mixed either with good road oil, bituminous, macadam, asphalt or other good substitute for lumber. In parts of the country where there is considerable frost, and where tracks heave, the sealing of the crossings with these substitutes will keep out the moisture and frost, and eliminate the heaving of tracks to a considerable extent; also, the heaving of crossing planks, which is a source of danger, will be eliminated. On slow speed tracks and where heavy trucking is done in yards, etc., track should be paved.

Excellent results have been obtained in eliminating signal failures and also from the standpoint of safety from crossings constructed according to the following specifications:

Formula 1—Clean out all dirt and ballast down to 2 in. below the bottom of the ties for the full width of the crossing and for a distance of 2 ft. outside of the outside rails.

Replace all damaged rails and ties in the crossing, bond all joints, that cannot be eliminated, with 3 copper bonds per joint, put all track through the crossing in first class line and surface, thoroughly tamp them up and install good drainage.

Paint rails with asphalt, applied hot with a brush or swab, covering thoroughly the entire surface of the rail below the under side of the head, including the under side of the base.

Pack around the rails for 8 in. on each side with a mixture of crushed stone up to ½ in. in size, and hot asphalt, tamping this mixture thoroughly to ensure a complete bond with the rail at all points.

Refill the crossing with good clean crushed stone (ballast size), up to the level of the under side of the head of the rail, rolling or tamping it thoroughly.

Cover the entire crossing with fine stone up to the level of the top of rails, sprinkling freely with a good quality of road oil while fine stone is scattered. Roll or tamp this covering thoroughly and sprinkle the entire surface with road oil.

**Cost of formula 1, with road oil at 1918 prices:**

| | |
|---|---|
| Double track— | |
| Ballast size stone, 6.46 cu. yd. at 80c | $ 5.17 |
| ½ in. size stone, 3.26 cu. yd. at 70c | 2.28 |
| Oil to cover 352 sq. ft., 100 ga. at 18c a gal. | 18.00 |
| | $25.45 |

Planking for a similar crossing would cost $56.

| | |
|---|---|
| Single track— | |
| Ballast size stone, 2.53 cu. yd. at 80c | $ 2.02 |
| ½ in. size stone, 1.33 cu. yd. at 70c | .93 |
| Oil to cover 144 sq. ft., 50 gal. at 18c a gal. | 9.00 |
| | $11.95 |

Planking for a similar crossing would cost $28.

Formula 2—Clean out all dirt and ballast down to 2 in. below the bottom of the ties for the full width of the crossing and 2 ft. outside of the outside rails.

Replace all damaged rails and ties in the crossing, bond all joints that cannot be eliminated with 3 copper bonds per joint, put all tracks through the crossing in first class line and surface, thoroughly tamp them up and install good drainage.

Paint rails with asphalt, applied hot with a brush or swab, covering thoroughly the entire surface of the rail below the under side of the head, including the under side of base.

Pack around the rails for 4 in. with a mixture of crushed stone of ½ in. size and hot asphalt, tamping it thoroughly to ensure a complete bond with the rail at all points.

Refill the crossing with good clean crushed stone (ballast size) up to the level of the under side of the head of the rail, mixed with a good mixture of good bituminous macadam, rolling and tamping it thoroughly.

Cover the entire crossing with fine stone of ½ in. size, to the top of the

rails, thoroughly mixed with good bituminous material and rolled or tamped thoroughly.

**Cost of formula 2 with bituminous at 1918 contract prices:**

| | |
|---|---|
| Double track— | |
| Ballast size stone, 6.46 cu. yd. at 80c | $ 5.17 |
| ½ in. size stone, 3.26 cu. yd. at 70c | 2.28 |
| Oil to cover 352 sq. ft., at 2½c | 8.80 |
| | $16.25 |
| Planking for a similar crossing would cost | $56. |
| Single track— | |
| Ballast size stone 2.53 cu. yd. at 80c | $2.02 |
| ½ in. size stone 1.33 cu. yd. at 70c | .93 |
| Oil to cover 144 sq. ft., at 2½c | 3.60 |
| | $6.55 |
| Planking for a similar crossing would cost | $28. |

Formula No. 3.—Clean out the ballast, dirt, etc., for the full width of the roadway, down to 2 in. below the bottom of the ties.

Eliminate all joints, or as many as possible, from the limits of the roadway.

In automatic signal or electric track circuit territory, insulate the rail on all sides, except the head, by the application of asphalt or similar insulating material.

See that all ties through the crossing are good and provided with tie plates under each rail. Tamp tracks thoroughly and see that they are put in first class condition as respects ties, line and surface.

Fill the spaces between the ties, and between the tracks, for the full width of the road between the outside ends of the outside tracks, and for the full width of the highway, with clean stone ballast thoroughly settled together, this stone of ballast size to come up to the under side of the head of the rail.

Make a concrete mixture of clean small stone or gravel and emulsified asphalt as follows: Select a good grade of stone screenings containing particles of stone up to ½ in., but with the fine dust and loam screened out, or a clean fine gravel containing a very small percentage of loam makes a good aggregate. Mix 2 gall. of good no. 1 road oil with 1 gall. of cold water, or larger quantities in proportion. Use 2 gall. of the mixture to 1 cu. ft. of aggregate, and mix well until all particles are well coated with this emulsified asphalt, the same as in mixing concrete. Spread the concrete thus made over the surface of the road and roll or tamp thoroughly to the level of the tops of the rails. Better results will be obtained in the way of a smooth surface if traffic can be kept off the new surface for about 24 hours after placing. If this is not possible the surface should be watched and all ruts smoothed out until it has thoroughly hardened.

Where the existing crossing is good except for the top surface, all that is necessary is to scrape off this top surface for about 2 in. below the top of the rail and proceed as above, beginning with the last preceeding paragraph.

**Cost for formula 3 at 1918 prices:**

| | |
|---|---|
| Double track— | |
| Ballast size stone, 6.46 cu. yd. at 80c | $ 5.17 |
| ½ in. size stone, 3.26 cu. yd. at 70c | 2.28 |
| Oil to cover 352 sq. ft., 100 gal. at 22c | 22.00 |
| | $29.45 |
| Planking for a similar crossing would cost | $56. |
| Single track— | |
| Ballast size stone, 2.53 cu. yd. at 80c | $ 2.02 |
| ½ in. size stone, 1.33 cu. yd. at 70c | .93 |
| Oil to cover 144 sq. ft., 50 gal. at 22c | 11.00 |
| | $13.95 |
| Planking for a similar crossing would cost | $28. |

# Disallowance of New Brunswick Railway Legislation Asked.

The New Brunswick Legislature at its 1919 session passed an act of seven sections, relating to provincial railways, the last of which enacts that it sprovisions do not apply to any street railway. Sec. 1 provides that notwithstanding anything contained in the charter of any provincial railway, or any amendment thereof, or chap. 91 of the Consolidated Statutes of 1903, or of any other act affecting railways operating under provincial statutes, the tolls charged on such railway shall be subject to revision or alteration by the Lieutenant-Governor in council, or by the Board of Railway Commissioners for Canada, and names penalties for failure to comply with the terms of the section. Sec. 2 provides that all tolls proposed to be charged by any railway operating under a provincial charter must be approved by the Lieutenant-Governor in council, and names penalties for failure to comply.

The following four sections deal with another matter which is of special importance to the few companies in New Brunswick which are under provincial jurisdiction. Section 3 provides that if it shall appear to the Minister of Public Works that a railway company operating under a provincial charter is not providing proper, safe or adequate service for the public, he shall cause an investigation to be made, and of this should show that the failure to provide such service as the Minister of Public Works may deem necessary arises "either from lack of proper maintenance facilities, lack of proper equipment in the matter of locomotives, rolling stock, train and section crews, or defects in the bridges, culverts, or any portion of the road, the Lieutenant-Governor in council shall have power to order that provision be forthwith made as necessary. Sec. 4 provides that if the investigation shows that the failure to provide adequate service is caused in whole or in part by the bridges, culverts, or any portion of the roadbed being in such a condition that freight or passenger traffic is not handled in as expeditious and safe manner as the same should reasonably be, then the Lieutenant-Governor in council shall have power to order the reconstruction or repair of any bridge or culvert or any portion of the roadbed which he may deem necessary for the safe and expeditious transportation of freight and passengers. Sec. 5 provides for the giving notice to the company affected of the work required to be done, etc., and names penalties for noncompliance with the notice. Sec. 6 provides for the enforcing of a daily service and penalties for failure to conform to requirements.

Sec. 7 is perhaps the most important in the act, as it provides that in the event of the failure of any railway company to carry out any order . . . under secs. 3 or 4 . . . and notwithstanding that a fine may have been imposed and collected for such failure, the Minister of Public Works may have such work done under his supervision and the costs of the same paid out of the revenue of the defaulting company. The section provides that in case the company's revenues are not sufficient, the unpaid balance shall be a lien on the company's property, and the line may be seized and sold. The Minister of Public Works shall then discharge the lien, and the balance shall be distributed among those entitled thereto under the orders of a judge of the N.B. Supreme Court. The section also authorizes the Minister of Public Works to give a good and efficient conveyance for any railway so sold.

The Caraquet and Gulf Shore Ry. bondholders have petitioned the Dominion Government to disallow the act. The petition alleges that the act is "so drastic, unjust and confiscatory in its scope and character" as to destroy the selling value of the bonds of the railway, to render valueless the assets held by trustees in the bonds, to prevent the borrowing of money for betterments, and that the expressed object in passing the act, although general in its scope, was to compel the petitioning company to bring its railway up to a higher standard of efficiency and to force it to comply with the provisions of the act. It is further alleged that the real logical effect will be to take away all security of the bondholders without compensation and "with such refined pretention as to shock the conscience of all honorable men, and to shake the confidence of foreign and domestic investors in Canadian securities." The petition was signed by Sir John Gibson, for Canadian bondholders and by C. E. Ritchie for United States bondholders. Up to the time of writing no action has been taken by the Dominion Government in request to it.

## The English Channel Tunnel Project.

A London, Eng., cable of Dec. 9, gives considerable information with regard to the present position of the project for the construction of a tunnel under the Straits of Dover, to connect England and France. Sir Edward Fell, Chairman of the Channel Tunnel Committee of the House of Commons, is reported to have said the British Government is supporting the project. The railways interested are the South Eastern and London, Chatham and Dover Ry. in England and the Chemin de Fer du Nord in France. The total length of the tunnel, including approaches will be about 30 miles, and it will consist of 2 tubes, with a drainage tube undernearth. Starting about three miles inland from Dover, it will follow the gray chalk bed of the channel, which does not run in a straight line across, and will emerge near Marquise, a village between Calais and Boulonge. It is stated that work will be started simultaneously in England and France, and that it is expected to be completed within five years after the start. Electricity will be used to operate the trains. The cost of the tunnel and its equipment is estimated at from $150,000,000 to $160,000,000.

**The C.P.R. Films Prince's Tour**—The C.P.R. has taken a complete set of films of the Prince of Wales tour through Canada while passing over its line. A set of these was given to the Prince, for his own use. The films were shown by the C.P.R. at Albert Hall, London, Eng., Dec. 15, when the King and Queen, together with other members of the royal family, were present. Sir George McLaren Brown, European General Manager, C.P.R., presided over a subsequent exhibit, the proceeds of both being in aid of the London Hospitals. It is said that the films will be shown throughout the country.

# The Railway Association of Canada's Organization.

Canadian Railway and Marine World for December contained some particulars about the organization of the Railway Association of Canada, to succeed the Canadian Railway War Board.

The Constitution is as follows:

The name of this organization is The Railway Association of Canada.

The purposes of the association are, consideration and recommendation upon matters pertaining to the operation of steam railways in the Dominion of Canada. To make such representations to the Government of Canada, the Board of Railway Commissioners for Canada, or to such other public bodies or other railway associations as in the opinion of the association may be desirable in matters of common interest to member companies. To act on behalf of member railways, either jointly or severally, as may be authorized, as the executive committee may from time to time approve.

Arrangements and agreements entered into by the association, after receipt of due authority from member railways, shall be binding upon railways which give such authority, until amended or annulled in accordance with the understanding reached by the respective parties at the time of making such arrangements and agreements. In other matters the action of the association shall be recommendatory and not binding upon any member.

Its membership consists of carriers which operate steam railways in Canada, but no carrier operating less than 50 miles of road, including trackage rights, or which operates primarily as a plant facility, shall be eligible for membership. Each carrier shall be entitled to exercise the right of one membership for each 1,000 miles of road or fraction thereof operated by it, including trackage rights. The executive committee, as may be necessary, shall determine the qualifications for membership under this constitution. The executive committee may admit to the association as associate members, carriers which are not eligible for full membership.

Each membership is entitled to one vote. Where member companies have more than one vote on basis of mileage, one officer of such company may cast total vote. Associate members shall not be entitled to vote.

A carrier may withdraw from the association by formal notice after payment of assessments due; or if a carrier shall fail to pay its assessments for one year from date of first unpaid assessment, shall be excluded as a member of the association.

Its organization shall include an executive committee to consist of five members (one of whom shall be President of the association), who shall be elected at a regular session of the association, to serve for three years, and an Honorary Chairman, who shall be ex officio a member of the executive committee. Each member of the executive committee shall be president of a Canadian railway. A vacancy on the executive committee may be filled by nomination by remaining members of committee pending next regular session of the association. There shall be an operating, a traffic, a financial and a legal committee, each to consist of five members selected by the member lines. There shall be on each committee, a chairman and a vice chairman who shall be elected by a majority vote of the members present at a meeting of the committee. Office will be held for one year. A vacancy may be filled by election at any meeting of the committee concerned.

It is the duty of the executive committee to direct general policies of the association, to pass upon recommendations and reports of committees, and, if approved, to authorize the completion of arrangements or agreements recommended by such committees. The Honorary Chairman, or, in his absence, the President, shall attend all regular sessions of the association.

It is the duty of the operating, traffic, financial and legal committees to exercise general supervision over those features of the association's work which are generally recognized as coming within the jurisdiction of the department of railway organization which corresponds to the respective committees; to make recommendations and reports to, and to give effect to instructions received from the executive committee; to appoint such sub-committees or sections as may be considered necessary to the prompt and efficient handling of the work of the association and to receive and pass upon reports and recommendations of and to direct the activities of subcommittees.

The head office of the association shall be located in Montreal.

The office work and staff of the association shall be in charge of a General Secretary appointed by the executive committee.

It is the duty of the General Secretary to keep a full and complete record of the proceedings of each meeting of the association or its committees and subcommittees; to notify members of the date and location of, and to provide copies of the proceedings of each meeting. He shall act as secretary of the several committees and subcommittees or arrange for a secretary in his absence. He shall select an Assistant General Secretary and such other assistants as the business of the association may require, subject to approval of the executive committee. The General Secretary shall also act as Treasurer of the association and shall receive, disburse and account for all monies received or expended, and shall deposit the funds of the association in such banks or places of deposit, as may be approved by the executive committee. He shall make a quarterly report of the finances in detail to the executive committee. All cheques issued by the association shall bear the signature of the General Secretary and be countersigned by a member of the executive committee.

Bylaws—Following are extracts from the bylaws:

A regular session of the association will be held on the second Tuesday of May of each year at such place as the executive committee may determine. Special sessions may be called by the General Secretary at request of the Honorary Chairman or President, or on a written request of three members. The executive committee may change the date of a regular session when in its judgment the best interests of the association will be thereby conserved. Statements of subjects which member lines may require to present at a regular session shall be forwarded to General Secretary not later than 30 days prior to date of meeting. Docket of matters to be dealt with at regular session shall be sent to all member lines not later than 15 days prior to date of meeting.

Any officer or a member will be admitted to the sessions and may join in the discussion and serve on the committees and subcommittees, subject to the provisions of the constitution.

The association shall have a working fund of $15,000, established by assessment against member railways. Assessments shall be made on the basis of half in proportion to the mileage operated (including trackage rights) and the other half in proportion to the gross earnings for the preceding fiscal year, as shown in Railway Statistics of the Dominion of Canada. The working fund shall be maintained by assessments on the above basis against member railways at the end of each quarter, to cover expenses incurred by the association during the quarter.

The fee for associate membership shall be ten dollars per annum.

Each member has the privilege of voting for five candidates for membership on each of the executive, operating, traffic, financial and legal committees. The five persons receiving the highest number of votes cast for membership, shall be declared elected. All such votes shall be by ballot prepared by the General Secretary.

Committee—The composition of the committees was given in Canadian Railway and Marine World for December. Following are the subcommittees:

**The Railway Association of Canada.**

TRANSPORTATION—H. T. Malcolmson, Superintendent, T., H. & B. Ry.; H. Shearer, General Superintendent, Michigan Central Rd.; C. G. Bowker, General Superintendent, G.T.R.; F. P. Brady, General Manager, Canadian National Rys.; A. Price, General Manager, C.P.R.; W. H. Farrell, General Manager, Algoma Eastern Ry.; W. A. Griffin, Superintendent of Traffic, T. & N.O. Ry.

CAR SERVICE—J. E. Duval, General Superintendent Car Service, G.T.R.; A. Hatton, General Superintendent Car Service, C.P.R.; A. E. Lock, Superintendent Car Service, T., H. & B.R.; J. P. Driscoll, General Superintendent Car Service, Canadian National Rys; W. S. Moy, Car Accountant, Quebec Central Ry.; W. M. Hugill, Superintendent Car Service, Algoma Central & Hudson Bay Ry.; J. S. Gordon, General Manager, Quebec Oriental Ry.; C. A. Stewart, Manager, Temiscouata Ry.

ROLLING STOCK—W. H. Sample, General Superintendent Motive Power, G.T.R.; W. H. Winterrowd, Chief Mechanical Engineer, C.P.R.; W. U. Appleton, Mechanical Superintendent, Canadian Superintendent, Canadian National Rys.; H. L. Rodgers, Mechanical Engineer, T. & N.O. Ry; W. T. Kuhn, Superintendent Motive Power, T., H. & B. Ry.; G. M. Robins, Master Mechanic, Quebec Central Ry.; G. E. Parks, Mechanical Engineer, Michigan Central Rd.; T. C. Hudson, General Master Mechanic, Canadian National Rys.

ENGINEERING—F. L. C. Bond, Chief Engineer, G.T.R.; A. F. Stewart, Chief Engineer, Canadian Northern Ry.; J. M. R. Fairbairn, Chief Engineer, C.P.R.; S. B. Clement, Chief Engineer, T. & N.O. Ry.; R. S. McCormick, General Superin-

tendent and Chief Engineer, Algoma Central & Hudson Bay Ry.; R. L. Latham, Chief Engineer, T., H. & B. Ry.

WAGES AND WORKING CONDITIONS — E. R. Battley, Superintendent Motive Power, G.T.R.; A. J. Hills, Assistant to President, Canadian National Rys.; George Hodge, Assistant to Vice President, C.P.R.

Additional subcommittees will probably be appointed to deal particularly with details of matters pertaining to railways operating west of the Great Lakes. It is probable also that some additional committees will be appointed in the east.

# The End of Year One of Canadian National Railways.

By D. B. Hanna, President, Canadian National Railways.

Completion of the first year in the life of the Canadian National Rys. is an important milestone on the road of transportation progress. If it were a plough we had put our hands to we might not look back, but the careful engine driver, still keeping a hand on the throttle, should look back now and then to see if his train is all right, and if the tail end is coming along, and also to get a high ball or stop signal as he approaches a station. We in the railway world, therefore, can justify a certain amount of retrospection.

The year's operations have, of course, been affected by the fact that 1919 was the first year of the readjustment period following the cessation of hostilities. Apart from the movement of returning troops, the almost immediate effect of the armistice was a falling off in traffic in war commodities, including foodstuffs. It was only to be expected that it would take time for after war activities to make up the traffic created by the tremendous munition industries established throughout Canada; also foodstuffs bottled up in other countries, which had not, during the war, had a submarine swept course to European ports, were thrown on the world's markets, somewhat affecting our exports of such commodities. For these reasons railway freight traffic has shown that the higher fares have not kept the public from travelling. The resumption of some train services that were curtailed as war measures has been justified.

The return of our soldiers from the front and the release of men from war activities in Canada has resulted in more labor being available for maintenance work. This condition, coupled with the lifting of restrictions on capital expenditures which the war enforced, has enabled the railways to put in a busy year on betterment work, and the completion of certain lines in the west, commenced before the war, has been proceeded with.

The activities of the year have, therefore, been sufficient to test the management under government ownership. I am glad to state for the information of those who wish us success, but who doubt that this can be achieved, that I have not observed the slightest tendency of officers to become slack, or in any way to lose their interest. Our men are as much on the job as any railway officers I have come in contact with, and, man for man, I do not think the staff of the Canadian National Rys. is surpassed anywhere on this continent. We have been watching very carefully the train operation, particularly where the service initially was not satisfactory, and I am glad to say that we see a marked improvement. We shall continue our efforts and hope that "national service" will become synonymous with "good service."

During the year a step of great importance has been taken by the Dominion Government in passing legislation to acquire the Grand Trunk Ry. System lines for addition to the Canadian National Rys. While some time will necessarily elapse before the lines will be operated as one system, yet the action taken ensures what I regard, and what I believe the people of Canada will quickly learn to recognize, as a wise solution of the railway problem of this country, namely the creation of a strong competitor for the C.P.R. The President of the C.P.R. in speaking recently in Toronto, said that one of the reasons why he hoped (against his fears) that the national system would be a success was that railways generally dreaded the competition of an irresponsible competitor, which is a railway truth.

It may be accepted as another railway truth that the day of the small independent railway system has passed. In the United States, where the railway problem is very much in the public eye, the experience obtained in the two years during which U.S. railways have been under government control has shown that certain measures, which railway managements had resorted to as good business moves, but which regulating bodies had more or less recently made illegal, were really in the best interests of the country as a whole; therefore it is proposed, in turning back the railways to their owners, that certain of these practices previously frowned upon, should now be encouraged. Consolidations and mergers, and the pooling of traffic, earnings, equipment and facilities are to be permitted. There is to be a greater coordination between rail and water carriers, more especially on inland waters.

Several plans put forward, by various groups, for legislation to cover the situation, provided for compulsory consolidation of the lines into great, but competing, systems. So that an accepted condition of proper transportation for a large country would appear to be large systems, but preserving competition. It should afford the people of Canada considerable satisfaction to know that the contemplated plans and generally accepted proper policy for the U.S. to adopt with respect to the railway problem seem to be largely along the lines of securing what the Canadian Government has taken steps to obtain. In Canada, two strong systems, serving every community in the country, will compete for the nation's business. We look forward with confidence, not to the death by exhaustion of our single, but great, competitor, but to a healthy and active rivalry, with full co-operation, should the transportation requirements of the country ever demand it. That one of the two systems is owned by the people through the government should, in my opinion, improve rather than adversely affect the situation. After a year's trial of the present plan of control of the National railway system, there has been, I am able to say, no governmental or political interference. Those of the government, or other members of parliament, who wanted information have received it. I have not been approached to make a single political appointment. I see no reason why this condition should not continue. The national railways system, in my opinion, has a future as bright as the nation itself. We must be identified with the progress of every community in Canada. We shall assist wherever we can, consistent with good business principles.

As a new year's thought, I would like to ask the public to help, but co-operating with us, to rectify such conditions as should be improved, by advising our officers when they see things that are not just as they should be. Our officers will appreciate such assistance from the public, with whom it is our endeavor to operate in closest harmony. We will not be able to do everything at once, but will endeavor to make such progress as traffic and other conditions will warrant. Our officers regard their duties as a public trust, and the public should not hesitate to approach them on subjects which mean improvement to the service, consistent, of course, with efficiency and economy.

When it is realized that over 50% of the country's railway mileage will, with the inclusion of the G.T.R. lines, be operated by the Canadian National Rys. System, it should be appreciated to what a great extent the future welfare of Canada may be affected by the success or failure of this system, and the public generally should support the line which is national in ownership and extent, and which the management desires should be truly national in helpful identification with Canada's development as a nation.

## Proposed Windsor-Detroit Bridge.

Organization of a company comprised of Canadian and United States capitalists is reported to be in progress to build a railway and general traffic bridge across the Detroit River, to connect Windsor, Ont., with Detroit, Mich. A press report states that a fund has been credited for investigation purposes, including the collection of data on traffic possibilities.

The proposition is to erect a bridge, supported on towers on either side of the river with a double deck suspension span. Capable of carrying railway, street car, automobile and general traffic. Connection would be made, so far as the railway is concerned, with the Fort St. Union Depot Co.'s terminal tracks on the Detroit side and with the Essex Terminal Ry. tracks on the Windsor side. The floor of the span would be 100 ft. above water level, high enough to permit the passing of the largest ships. It is said that the Lake Carriers' Association will not offer any objection to the building of a bridge which gives a sufficient headway for navigation. The details of the approaches have been worked out, it is said, on different plans. G. L. Lindenthal of New York, and C. E. Fowler, are mentioned as the engineers. The estimated cost of the undertaking is $28,000,000.

Railway Lands Patented—Letters patent were issued during Nov., 1919, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

| | Acres. |
|---|---|
| Alberta and Great Waterways Ry. | 65.10 |
| Canadian Northern Ry. | 163.00 |
| Edmonton, Dunvegan and British Columbia Ry. | 6.17 |
| Total | 234.27 |

## The Prince of Wales' Tour Over the G.T.R.

When the Prince of Wales was making part of his Canadian tour over the G.T.R. lines in Ontario recently, H. R. Charlton, General Advertising Agent, G. T.R., representing President H. G. Kelley, presented him with a handsome composite picture, composed of a photograph of the then Prince of Wales (the late King Edward VII.) and staff, taken at Montreal in 1860; a photograph of the Duke and Duchess of Cornwall and York (King George V. and Queen Mary), and staff on the Victoria Jubilee Bridge, Montreal, in 1901; views of the old Victoria tubular bridge and the present Victoria Jubilee bridge; a photograph of the locomotive that pulled the royal train in 1860 and the locomotive used on the royal train in 1919. The picture is surrounded with a gold frame and enclosed in a beautiful Canadian birdseye maple box, upholstered in royal blue with a gold plate on the cover bearing an inscription.

The Prince of Wales saying goodbye to his bodyguards on the C.P.R. at Flavelle, between Colborne and Grafton, Ont., Nov. 6, 1919.

The Prince is shown talking to Constable C. Rippington. Admiral Sir Lionel Halsey (to the left in civilian clothes) is talking to Constable R. Beresford. Conductor R. Dort is also shown in the illustration.

Rear Admiral Sir Lionel Halsey, the Prince's chief of staff, wrote President Kelley as follows:—"I am writing to you on behalf of the Prince to say how much he appreciates the magnificent present, consisting of the composite picture which has been presented to him by the Grand Trunk authorities through Mr. Charlton. His Royal Highness very much appreciates this gift and he will keep it as a souvenir of a very pleasant time spent on the G.T.R. System."

Sir Lionel Halsey, also wrote Mr. Kelley as follows:—"I am most grateful to you for the kind present of the descriptive itinerary which has been made to me. The book is most beautifully got up, and besides being a work of art is most useful, and I can only say that from a staff point of view it has saved some of us an endless amount of work in ferretting out for ourselves details of the various places we visit. Whoever compiled it is, in my opinion, worthy of a very good mark. His Royal Highness desires me to thank you very much for the copy of the book which has been handed to him by Mr. Charlton."

# Canadian Pacific Railway Construction, Betterments, Etc.

**West St. John Baggage Shed**—We are officially advised that the baggage shed which is being built at West St. John, N.B., is 500 x 60 ft. with a covered baggage loading platform 12 ft. wide on one side and a covered passenger loading platform on the other. Both shed and platform are being built on pile foundations, and will be all timber construction. The shed will be steam heated and electrically lighted. The baggage shed will be reached from the immigration rooms on the upper floor of the present wharf shed by an enclosed overhead passage way over the tracks and an enclosed rampway down to the baggage shed floor level. Work was started Nov. 14, and it is expected to have the shed ready for use by Jan. 15. The plans were prepared under the direction of J. M. R. Fairbairn, Chief Engineer, Montreal.

**Fredericton Station**—A press report states that the C.P.R. proposes to build a new station at Fredericton, N.B., and that the plans provide for a brick and stone building at an estimated cost of $50,000.

**Campbellford, Lake Ontario and Western Ry.**—The Board of Railway Commissioners has approved of revised location for this railway in Cobourg, Ont., from the west side of Division St., to the east side of Ontario St., mile 119.69 to 120.18.

**Western Branch Lines Construction**—We are officially advised that grading was done on eight branch lines or extensions during 1919 as follows:—

Russell, Man., northerly, mile 0 to 12; grading 23% completed; Northern Construction Co., Winnipeg, contractors.

Rosetown, Sask., southeasterly, mile 20.2 to 45.2; grading 56% completed; Canadian Construction Co., Winnipeg, contractors.

Lanigan, Sask., northeasterly, mile 0 to 50; grading 5% completed.

Wymark, Sask., easterly; mile 0 to 25; grading 27% completed.

Milden, Sask., easterly; mile 0 to 34; grading 15% completed.

Consul, Sask., easterly; mile 0 to 30; grading, 41% completed.

Leader, Sask., southerly; mile 0 to 25; grading 46% completed.

Acme-Drumheller line, Alta.; mile 0 to 37; grading, 22% completed.

The contractors for the six last mentioned lines are Stewart and Welch, Calgary, Alta.

**Corinne Station**—The Board of Railway Commissioners has approved plan for station building at Corinne, Sask., mile 120 from North Portal, on the line to Moose Jaw.

**Acme-Empress Extension**—The Board of Railway Commissioners has authorized the building of a bridge over Kneehill Creek, mile 34.21 on the Acme-Empress extension, Langdon North Branch, Alta.

**Calgary Spur Line**—A press report states that the Calgary, Alta., City Council proposes to apply to the Board of Railway Commissioners for an order for the electrification of the company's spur line from Twelfth Ave., along Fifth St. East.

**Squilax Station**—The Board of Railway Commissioners has ordered the placing of a standard portable station at Squilax, B.C., 41 miles east of Kamloops, on the main transcontinental line.

**Vancouver Improvements**—A press report states that the bunkers, construction tracks and construction material, together with the poles and wires at Twenty-seventh Ave., will be removed early this year. (Dec., 1919, pg. 661).

**Regina Spur Lines**—A press report states that the Regina, Sask., City Council has authorized the company to build a spur line to the T. Eaton Co.'s warehouse.

**Lanigan Northeasterly Branch**—The Board of Railway Commissioners has approved the route map of the branch from Lanigan, Sask., northeasterly from mile 26 to 32.

**Rosetown Southeasterly Branch**—The Board of Railway Commissioners has approved the revised location of the branch from Rosetown, Sask., southeasterly, from Sec. 22, Tp. 24, Range 16, west 3rd Meridian to Sec. 7, Tp. 24, Range 15, West 3rd Meridian, mile 40 to 43.23.

**Dunelm-Instow Connection, Etc.**—A press report states that a delegation from the Swift Current district interviewed D. C. Coleman, Vice President, Western Lines, Dec. 12, and asked for the construction of a line to connect Dunelm, on the Vanguard branch line, with Instow on the Weyburn-Lethbridge line, and a line from Swift Current through the Vermilion Hills to near Moose Jaw. Consideration of the request was promised.

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**Accident to Board of Railway Commissioners' Car**—The tire of one of the rear wheels of the Board of Railway Commissioners' official car Acadia, attached to the Ocean Limited, leaving Halifax, N.S., on the Canadian National Rys., Dec. 14, came off, and a serious accident was prevented by the brakeman putting on the brake, and stopping the train on a high embankment on the shore of Grand Lake, near Windsor Jct., N.S. Hon. F. B. Carvell, Chief Commissioner; S. J. MacLean, Assistant Chief Commissioner; J. G. Rutherford, Commissioner, and several members of the staff were on board.

# Mainly About Railway People Throughout Canada.

M. J. Bannon, a former roadmaster on the Michigan Central Rd., Windsor-St. Thomas Division, died at Detroit, Mich., Dec. 12. He retired from active service in 1899.

Stephen Pearson Brown, Vice President, Ford Bacon and Davis, Engineers, New York, was drowned in Sebec Lake, Maine, Dec. 7. He was born at Dover, Me., Apr. 29, 1877, and graduated from the Massachusetts Institute of Technology, Boston, in 1900, upon which he entered, as a junior member, the firm of Collier and Brown, consulting engineers, Atlanta, Ga. He was, from 1904 to 1905, on the Bridgeport elevation and station construction, New York, New Haven and Hartford Ry., and in 1905 entered the United Engineering and Contracting Co.'s service, first on the Port Morris depression works, New York Central Ry., then on the St. Marys Park tunnel, and later as consulting engineer in the study of public utilities, San Juan, Porto Rico. Following this he was Chief Assistant Engineer, same company, on the cross town tunnels of the Pennsylvania Rd. in New York, where he had direct charge of all concrete and construction work, taking general charge later of all work west of Fifth Ave. In 1908-09 he was, in addition to being Chief Assistant Engineer, United Engineering and Contracting Co., designing engineer, Cuban Engineering and Contracting Co., and spent the summers of both years in Europe investigating European tunnel methods and studying hydro electric construction. From 1909 to 1912 he was Chief Engineer, Tidewater Building Co., and T. B. Bryson, on sec. 11-A-3 of the Fourth Ave., Rapid Transit subway, Brooklyn, N.Y. In Apr., 1912, he was appointed Chief Engineer, Montreal Tunnel and Terminal Co., and Managing Engineer, Montreal tunnel and terminal construction, Mackenzie, Mann and Co., Ltd. On the completion of this work in 1917, he returned to the U.S., where he offered his services in any war capacity, and was attached to the Engineering Department, for home service. On the signing of the armistice, he was appointed Vice President, Ford Bacon and Davis, engineers, New York, which position he held at the time of his death.

Lady Bury, wife of Sir George Bury, returned to Montreal, from Vancouver, early in December, to remain for about a month, after which she will return to Vancouver to spend the winter. Lady Bury, shortly after her arrival in Montreal, entertained at luncheon at Mount Royal Club, Montreal, in honor of Mrs. J. W. Stewart, of Vancouver, wife of Brig.-Gen. J. W. Stewart, railway contractor.

Sir George Bury, Vice President, Whalen Pulp & Paper Co., and formerly Vice President of C.P.R., returned to Vancouver, Dec. 16, from a business trip to Japan.

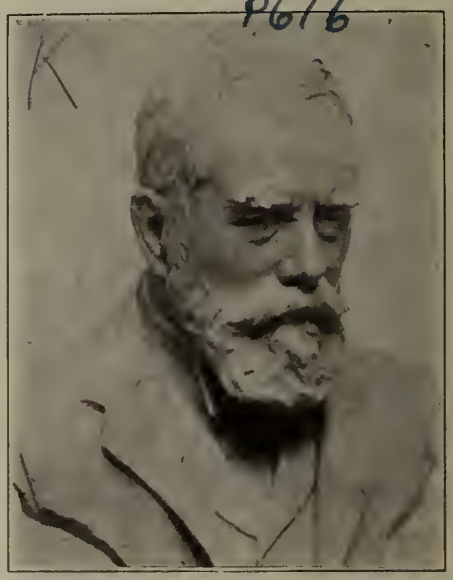
D. C. Coleman, Vice President, Western Lines, C.P.R., Winnipeg, was a guest at the 75th annual dinner of the St. Andrew's Society at Chicago,. Ill., recently.

R. Creelman, Assistant Passenger Traffic Manager, Canadian National Rys., Winnipeg, was entertained to luncheon there, Dec. 24, 1919, by the local staff. Osborne Scott, General Passenger Agent, Western Lines, presiding.

M. C. Dickson, formerly District Passenger Agent, G.T.R., Toronto, was reported recently to be seriously ill at his home at Hamilton, Ont.

Capt. Charles P. Disney, who has been appointed acting Bridge Engineer, Eastern Lines, Canadian Northern Ry., Toronto, took a course at the Institute of Technology, Boston, Mass., and from 1902 to 1905, was with the Dominion Bridge Co., Montreal; 1905, with Structural Steel Co., Montreal; 1905 to 1914, Bridge Department, National Transcontinental Ry.; 1914 to 1915, Bridge Department, Intercolonial Ry., Moncton, N.B. From 1915 to 1919, he was on military service, and was for 18 months a sapper with the Canadian Engineers, and three years lieutenant and captain in the Royal Engineers, his service in France being continuous for four years.

Samuel Dowsley, at one time an employe of the St. Lawrence and Ottawa Ry., prior to its acquisition by the C.P.R.,




Lord Mount Stephen.
First President, C.P.R. Co., 1881 to 1888. This marble bust, by Major Lessore, for which sittings were given in London in 1913, was the original study, from which the large bronze statue in the general waiting room, C.P.R., Windsor St. station, Montreal, was modelled.

died at Prescott, Ont., Dec. 4, aged 80. He was master mechanic of the line and for a time had charge of the shops at Prescott. He was an uncle of Hon. J. D. Reid, Minister of Railways and Canals.

Sir John Craig Eaton, who has been elected a director of the Canadian Pacific Ry. Co., in place of the late W. D. Matthews, was born at Toronto, Nov. 9, 1875, and educated at the Model School, there. He commenced business life under his father, and subsequently became Vice President, and on his father's death in 1907, President of the T. Eaton Co. He was, at one time, President, Hamilton Steamboat Co., and Turbine Steamship Co., and is a director of the Dominion Bank, Sterling Bank, a member of the board of management of Victoria University, a governor of the Toronto General Hospital, and associated with numerous charitable organizations. He was created a knight bachelor in 1915.

D. E. Galloway, Assistant to President, G.T.R., Montreal, has been decorated with the King Albert Medal for services in connection with Belgian relief work.

D. B. Hanna, President, Canadian National Rys., spoke before the Hamilton Board of Trade, Hamilton, Ont., Dec. 4; the Dominion Commercial Travellers' Association, at Montreal, Dec. 22; and the Canadian Club, at London, Ont., Dec. 29.

Major C. S. L. Hertzberg, M.C., son of A. L. Hertzberg, Engineer, Ontario District, C.P.R., Toronto, and at one time in C.P.R. service, was relieved of his military duties recently, after four years service, and has taken up private practice with Major T. R. Loudon, as consulting engineers, Toronto. He was born at Toronto, June 12, 1886, and educated in the public schools, St. Andrew's College, and School of Practical Science, Toronto University, graduating in 1905. He spent summer vacations on C.P.R. location, and joined the staff in 1906, as transitman on maintenance. He subsequently was in the Trussed Concrete Steel Co.'s and Concrete Engineering Co.'s service at Toronto; and for a short time in 1908 was on electric railway maintenance with the Dominion Power and Transmission Co., Hamilton, Ont. In 1909 he was appointed Chief Engineer, of the Trussed Steel Concrete Co., Walkerville, Ont., and in 1911 was appointed Manager, Bishop Construction Co., Toronto. He commenced private practice as consulting engineer, as partner in James, Loudon and Hertzberg in 1912, and enlisted for active service in Dec., 1915, going overseas Jan. 1, 1916, as lieutenant, 7th Field Co., Canadian Engineers. He went to France in Apr., 1916, was awarded the Military Cross, Dec. 5, 1916, for work on the Somme and was wounded in Jan., 1917, and invalided to Canada in July, 1917. He afterwards served as adjutant at Spadina Military Hospital, Toronto, and was promoted captain and officer commanding Casualty Co. In July, 1918, he was transferred to No. 2 Service Company, and in Sept., 1918, to No. 16 Field Company, Canadian Engineers, as second in command and sailed from Vancouver, B.C., for Siberia with that company, Oct. 11, 1918, this being the only engineering unit with that force. During service in Siberia the company was engaged chiefly on water supply, building and repairing barracks, roads, etc. He returned to Canada in June, 1919.

W. P. Hinton, Vice President and General Manager, Grand Trunk Pacific Ry. Co., and Manager for the Receiver, has been elected a director of the company.

Sir John Jackson, C.V.O., one of the largest public works contractors, and head of Sir John Jackson Ltd., and Sir John Jackson (Canada) Ltd., died at London, Eng., Dec. 15, aged 68. Amongst some of the large works which he has carried out, are: a section of the Manchester, Eng., Ship Canal; foundations of the Tower Bridge, London, Eng.; Dover harbor, Admiralty docks at Keyham, Devonport; Admiralty harbor, St. Simons Bay, South Africa; the railway across the Andes from Arica to La Paz, South America and the great barrage across the Euphrates River, near Babylon. His company is now engaged on the Singapore harbor, irrigation works in Mesopotamia, harbor works at Victoria, B.C., etc. He was father-in-law of Col. C. W. P. Ramsey, C.M.G., formerly Engineer of Construction, Eastern Lines, C.P.R., and now in that company's operating department.

**Howard G. Kelley**, President, G.T.R., and Mrs. Kelley, left Montreal at the end of November, to spend December in the Bahamas.

**Dr. B. Knight**, who died at London, Ont., Dec. 17, from a heart attack, was formerly in C.P.R. service there, in the dispatcher's office.

**C. W. McHarg**, station ticket agent Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., has resigned from the service to enter the Firestone Tire and Rubber Co.'s service there. On behalf of the staff, he was presented with a smoking stand, Dec. 22, by G. C. Martin, General Traffic Manager.

**W. D. Matthews**, grain merchant, a C.P.R., director who died at Toronto, May 24, 1919, left an estate valued at $2,291,000.

**R. F. Morkill**, who resigned his position as Signal Engineer, G.T.R., recently, has been appointed Continental Representative of Tyre & Co., Ltd., electrical, mechanical, railway signal and interlocking engineers, Dalston, Eng., who are about to establish a factory in France.

**F. H. Phippen**, K.C., left Toronto early in December, to spend some weeks in England.

**H. T. Rawlings**, Lake Forwarding Agent, Canadian National Rys., Cleveland, Ohio, left at the end of December, with his family, for a visit to England, expecting to return in February.

**Hon. J. D. Reid**, Minister of Railways and Canals, who was absent from his office at Ottawa for about two weeks, on account of ill health, returned to his duties Dec. 10.

**R. A. Ross**, E.E., consulting engineer, and a member of the Montreal City Administrative Committee, will be President of the Engineering Institute of Canada, for 1920.

**W. A. B. Russell**, Commercial Agent, Grand Trunk Pacific Ry., Regina, Sask., was married at Winnipeg, Dec. 13, to Miss A. Coughlan. Prior to his appointment at Regina, Sask., he was chief clerk to Vice President and General Manager, Winnipeg. On the eve of his marriage he was presented with a cabinet of community silver, by the Winnipeg staff.

**Lord Shaughnessy**, Chairman, C.P.R. Co., is among those who are applying to the Quebec Legislature for the incorporation of the St. Mary's Memorial Hospital, Montreal.

**Sir Alfred W. Smithers**, Chairman G.T.R. Co., arrived in England, Dec. 9, after a visit to Canada, where he completed the negotiations relative to the acquisition of the G.T.R. by the Dominion.

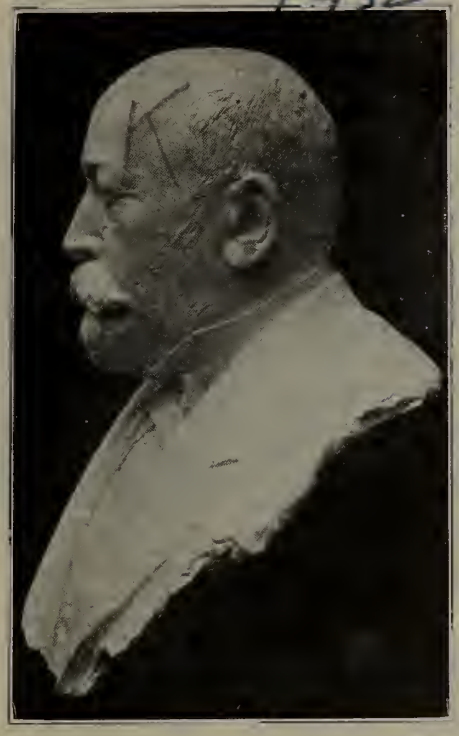
**Sir Thos. Tait**, Montreal, President, Fredericton & Grand Lake Coal & Ry. Co. is a director of Pacific Coast Colleries Ltd., which controls 9,000 acres of coal lands and leases on Vancouver Island, and which recently offered for subscription, $200,000 of first mortgage bonds.

**E. N. Todd**, General Foreign Freight Agent, C.P.R., Montreal, has been decorated with the King Albert Medal for his services in connection with Belgian relief work.

**Guy Tombs**, until recently Assistant Freight Traffic Manager, Canadian National Rys., Montreal, and now Traffic Manager, Canadian Export Paper Co. Ltd., has been made a Chevalier of the Order of Leopold II. of Belgium for his work in connection with Belgian relief.

## The Farmers' Policy on the National Railways.

Hon. T. A. Crerar, M.P. for Marquette, Man., and ex-Dominion Minister of Agriculture, is reported to have said in speaking at the United Farmers of Ontario's annual meeting in Toronto, Dec. 18, that the farmers' policy in Dominion affairs, stands for public ownership in the widest sense. Canada has public ownership of railways, not from choice, but by virtue of necessity. If the Canadian National Rys. should be brought down to a proper basis of valuation, they would prove a valuable asset to the Dominion. In this regard he instanced the case of a stretch of some 250 or 300 miles in length in Western Canada whereon lie the rails of two nationally owned systems. These bits of line run through a section that involved a tremendous cost of construction and



The late Sir William C. Van Horne, K.C.M.G.

Second President, C.P.R. Co., 1888 to 1899. From bronze bust by Major Lessore. Sir William sat for this bust, at his summer place, Covenhoven, St. Andrews, N.B., in 1913 It is now in Lady Van Horne's house in Montreal.

maintenance, probably the most expensive in the Dominion. There are at present on every mile outstanding securities to the value of $90,000, on which the interest has to be paid and the securities eventually retired. He added: "Much of the line was lifted during the war, now on one railway, now on another, and I venture to predict that the rails will not be laid on that bit of line in the next 50 years. We must set our faces determinedly against political influence in the operation of these roads. It can be done, and how it can be done depends upon the attitude of our governments and upon the attitude of the people."

The following resolution was adopted without discussion:—"That the present method of the appointment of all the directors of the Canadian National Rys. by the Dominion Government is not in accordance with democratic principles, and not in the best interests of the people's railway. That provision should be made for the election as directors of a number of employes and superintendents of the railway, from among their number, by themselves, and that in the appointment of the remainder of the directors care should be taken to see that the chief sections of the country served by the railway are represented on the directorate."

## Canadian National Railways Earnings.

| | 1919 | 1918 |
|---|---|---|
| January | $ 6,744,018 | $ 4,696,567 |
| February | 6,000,342 | 4,421,504 |
| March | 6,827,491 | 5,710,660 |
| April | 6,909,632 | 7,165,890 |
| May | 7,518,244 | 6,580,745 |
| June | 6,009,585 | 6,868,864 |
| July | 7,657,402 | 5,733,299 |
| August | 8,274,882 | 8,255,942 |
| September | 8,627,268 | 7,058,381 |
| October | 9,389,795 | 8,480,468 |
| November | 8,739,457 | 7,836,384 |
| | $82,797,111 | $72,808,664 |

Approximate earnings for two weeks ended Dec. 14, 1919, $3,989,304, against $2,515,075 for same period, 1918.

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1919, compared with those of 1918:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $13,028,328 | $11,474,816 | $1,553,512 | $ 385,519 |
| Feb. | 11,064,167 | 10,083,051 | 981,116 | 390,218 |
| Mar. | 12,374,182 | 10,835,138 | 1,539,044 | *1,453,737 |
| Apr. | 13,108,905 | 11,020,281 | 2,088,624 | *1,366,765 |
| May | 13,569,411 | 10,535,650 | 3,033,761 | *654,015 |
| June | 13,577,274 | 10,586,852 | 2,990,421 | 178,274 |
| July | 14,720,362 | 11,723,659 | 2,996,703 | 826,692 |
| Aug. | 15,283,654 | 11,505,486 | 3,778,168 | 569,534 |
| Sept. | 17,513,691 | 13,421,771 | 4,091,920 | 970,479 |
| Oct. | 18,296,653 | 12,948,871 | 5,347,782 | 261,945 |
| Nov. | 17,366,850 | 14,517,041 | 2,849,809 | *548,663 |
| | $159,903,476 | 128,652,616 | $31,250,860 | $440.516 |
| Incr. | $ 18,116,633 | $18,557,149 | | |
| Decr. | | | $ 440,516 | |

Approximate earnings for 2 weeks ended Dec. 14, 1919, $7,732,000 against $7,260,000 for same period, 1918.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1919, compared with those of 1918:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $ 4,402,229 | $ 5,118,234 | $† 716,005 | $* 81,794 |
| Feb. | 4,088,028 | 4,397,953 | 309,952 | 660,229 |
| Mar. | 5,513,593 | 4,673,298 | 840,295 | 762,766 |
| Apr. | 5,357,537 | 4,601,550 | 755,987 | 92,889 |
| May | 5,272,060 | 4,603,411 | 668,649 | *36,495 |
| June | 4,947,795 | 4,644,659 | 303,136 | *707,067 |
| July | 6,021,746 | 4,886,147 | 1,135,599 | *35,347 |
| Aug. | 6,719,921 | 5,043,662 | 1,676,259 | *101,890 |
| Sept. | 7,004,277 | 5,611,125 | 1,393,152 | 164,047 |
| Oct. | 7,136,376 | 5,764,044 | 1,372,331 | 189,280 |
| | $56,463,562 | $49,344,083 | $7,119,479 | $906,618 |

†Deficit. *Decrease.

Approximate earnings for Nov., 1919, $6,092,603, against $6,169,272 for Nov., 1918.

**European Rolling Stock Building**—A recent London, Eng., cable states that Premier Lloyd George stated after a visit to Woolwich Arsenal that it would probably be developed as a railway center in order to meet the world shortage in locomotives. In this connection it is of interest to notice that the Krupp works, at Essen, Germany, turned out its first locomotive, Dec. 6. The Prussian state railways are reported to have undertaken to take 108 locomotives and 2,000 cars a year from the Krupp works, which is reported to have 3,500 engaged in rolling stock construction.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Bagotville Ry. Co.—The Quebec Legislature is being asked to incorporate a company with this title to build a railway from near Nairns Falls, on the Quebec and Saguenay Ry., northeasterly to Chicoutimi. The provisional directors named on application are:—J. L. Macdougall, W. Murdock, H. Fitzsimons, C. Watt, B. Moses, Ottawa, Ont.

Burrard Inlet Tunnel and Bridge Co.—The Dominion Parliament is being asked to extend the time for the commencement and completion of the railway, bridge and tunnel which the company is authorized to build. The company was incorporated in 1910 to build a tunnel under the First Narrows of Burrard Inlet, Vancouver, and a bridge over the Second Narrows of Burrard Inlet, for foot passengers, carriages, street railway and railway purposes, with approaches from some points on the south shore in or near Vancouver to points on the opposite shore of Burrard Inlet, so as not to interfere with navigation, and to connect the tunnel and bridge, or either, with the railways entering Vancouver to construct one or more lines not exceeding 10 miles long, a railway from the northern end of the bridge and tunnel, or either of them easterly along the shore line of North Vancouver District Municipality, to Deep Cove on the north arm of Burrard Inlet, and westerly from the north ends of the bridge and tunnel, or either of them along the shore line of the City of North Vancouver, to the Horse Shoe Bay on Howe Sound.

The company's stock is owned by the Cities of Vancouver, North Vancouver, and other local municipalities. Some years ago plans were completed for building the bridge, and some preparatory work in the way of boring for foundations was done. The war put a stop to the project, and it has since been an abeyance. In 1918 the company obtained an extension of time for two years for carrying out its project so as to keep the project alive, and give the municipalities interested an opportunity of realizing on the company's assets. (July, 1918, pg. 285).

Canadian Niagara Bridge Co.—A Bridgeburg, Ont., report stated that it was announced, Nov. 30, that the Toronto, Hamilton and Buffalo Ry. would undertake the building of an approach line from Welland for the proposed new bridge across the Niagara River at Black Creek, 6 miles from Bridgeburg, Ont. A further report stated, Dec. 5, that representatives of the C.N.B.C. has arrived at Black Creek and North Tonawanda, N.Y., and that a gang of men with drilling machinery were expected to arrive some days later to begin testing for the foundations of the shore abutments of the bridge. The latter report also stated that it was expected a start would be made on building the bridge during the summer.

The project is often described as a Canadian Pacific Ry. one, but we are officially advised that the work will be handled either by the Toronto, Hamilton and Buffalo Ry. or by the Michigan Central Rd., and more probably by the latter company, though the C.P.R. is, no doubt, interested in it. Dec., 1919, pg. 654).

Esquimalt and Nanaimo Ry.—The contract let to the Foundation Co. of British Columbia, Limited, Vancouver, covers the clearing of the right of way and the grading and bridging work on the branch from near Alberni to the Great Central Lake, about 10.5 miles. The track laying will probably be done by the E. and N.R. Co. in accordance with the universal practice on C.P.R. lines.

The Victoria, B.C., City Council has approved of the revised agreement with the company respecting the erection of a new bridge at Johnson St., which has been the subject of considerable negotiation for some years past. The agreement was forwarded to the British Columbia Government for approval, and when it has been finally accepted by the company, it will be submitted to the ratepayers for ratification. It is expected that this will be done early this year. (Dec., 1919, pg. 654).

Grand Trunk Ry.—The Board of Railway Commissioners has ordered the company to build a passenger shelter, and platform with shelter at the E. Clark section house, near Frome, Ont. (Dec., 1919, pg. 654).

Grand Trunk Pacific Ry.—The Board of Railway Commissioners has ordered the company to provide a stockyard at Heath, Alta., forthwith. A press report states that the territory between Edmonton and Tofield, Alta., is rapidly filling up, and is becoming a large stock producing area. Heath, mentioned above, is about 150 miles east of Tofield, and will probably be a center of trade for the eastern part of the area named. (Dec., 1919, pg. 654).

Kettle Valley Ry.—The Board of Railway Commissioners has approved a route map of the company's projected railway from Peuticton, B.C., southerly to the International boundary, on the east side of Osoyoos Lake. The board has also approved the location plan of a line from mile 1.62 to mile 3.99 from Penticton Wharf, B.C.

We are advised that the British Columbia Government has requested the company to consider an extension of its railway south from Penticton, B.C., and that the matter is receiving the company's consideration. (Dec., 1919, pg. 654).

Lacombe and North Western Ry.—We are officially advised that that the laying of track into Rimbey, Alta., was completed by the Alberta Government's Railway Department, Nov. 25, 1919. A number of residents of Bentley, heretofore the northern terminus of the line, made a trip over the line to Rimbey, Nov. 25, and joined the residents there in celebrating its completion. The line is being operated into Rimbey by the construction staff, a train being run in each direction three days a week.

W. Thompson, who has done a good deal of grading on the line, is reported to have said in Edmonton, Dec. 2, that the 20 mile extension, now completed, runs through one of the best farming districts in Alberta. The line now extends from Lacombe to Rimbey, 36.5 miles, of which about 20 miles from Lacombe to Bentley were built about three years ago. The Alberta Government took over the line, and in the spring, 1919, called for tenders for its completion. (Dec., 1919, pg. 654).

Lievre Valley Power, Traction and Manufacturing Co.—The Quebec Legislature is being asked to amend the company's charter powers by authorizing it to build a narrow gauge railway, and for other purposes. The Buckingham Electric Ry., Light and Power Co. was incorporated by the Quebec Legislature with various powers in 1895. In 1905, the legislature changed the name of the company to the Lievre Valley Power, Traction and Manufacturing Co., its powers as to railway construction being as follows, to build a single or double track railway from the City of Hull, or from a point in Hull Tp. to the mouth of the Lievre River in Buckingham Tp., Parish of L'Ange Gardien, through Buckingham, and along the Lievre River Valley to the National Transcontinental Ry. Power was given to operate the projected railway by electricity, steam or other motive power, and to generate and distribute electric power.

Normandin Farmers Railway Co.—The Quebec Legislature is being asked to incorporate a company with this title to build a railway across or near Roberval, Ashuapmouchouan Dumeules, Dufferin, Normandin, Girard, Albanel, Racine and Dolbeau Tps., as far as Peribonka and thence southeast to the Saguenay River at deep water, at or near Saint Fulgence. The provisional directors are:—C. Lagamier, A. Villeneuve, B. Fraser, J. S. Turcotte, Normandin, Que.

Pacific Great Eastern Ry.—We are officially advised that the British Columbia Government engaged Major C. Ewart in June, 1919, to make a survey for a route for railway between Clinton and Ashcroft to connect the Pacific Great Eastern Ry. with the Canadian Northern Ry. Major Ewart left subsequently to join the C.N.R. engineering staff on the Kamloops-Kelowna line, and was succeeded by R. Brunton, who has completed the survey for the suggested line, securing a route of approximately 42 miles. Beyond the making of the survey, nothing has been done in regard to construction. (Dec., 1919, pg. 654).

The Quebec Central Ry. has under survey an extension of its line from Scotts, Que., to a connection with the Canadian National Rys., 2.5 miles east of St. Isidore, Que., 8.11 miles.

Quebec Colonization Ry.—The Quebec Legislature is being asked to incorporate a company with this title to construct a railway from Mont Laurier, Labelle County, southwesterly to the C.P.R. near Maniwaki, and running through Campbell, Kiawika, Dudley, Pope, Robertson, Boutillier, Kensington, Cameron, Wabasse, Aumond, Egan, Maniwaki and Bouchille Tps., or any of them, or through unorganized territory; then from Maniwaki westerly in the direction of Lake Expanse and Lac des Quinze to the C.P.R., near Timiskaming, then southeasterly through Tabaret, Mercier and Gendreau Tps.; also to build a railway from the Coulonge River, in Pontiac County, northerly to near Nottaway on the National Transcontinental Ry., thence northerly to the Bell River north of Lake Shabogama; with connecting lines and branches. The lines to be operated by steam or electricity. Dessaules, Garneau, Desy and Lorrain, Montreal, are attorneys for applicants.

Quebec Eastern Ry.—The Quebec Legislature is being asked to amend the company's charter by extending the time for building following projected lines to

Oct., 1925: From Sherbrooke to the Quebec Bridge; from some point on the main line to Lyster, a branch from Lime Ridge and other branch lines to connect with existing lines not exceeding 15 miles long. The company was also authorized to acquire Lotbiniere and Megantic Ry. running from Lyster to St. Jean des Chaillons.

The act respecting the Quebec and Saguenay Ry. passed in 1912, provided as follows:—"The Quebec and Saguenay Ry. Co. is hereby authorized to amalgamate with, absorb and acquire, the Lotbiniere and Megantic Ry., and Quebec Eastern Ry., or either or both of said roads," etc. The present application to the legislation asks for a modification, on the suppression, of this section of the act.

Roberval-Saguenay Ry. — The Quebec Legislature is being asked to amend the company's charter of incorporation by giving it the power to build and operate by steam and electricity, or either of them, a branch line to connect any point on its actually constructed railway in Chicoutimi County with the Quebec and Saguenay Ry. at La Malbie, Que. It is also asked that the time for building this previously authorized lines shall be extended to Mar., 1922, provided that they be completed by Mar., 1925. The lines in question are from Roberval round Lake St. John to the Peribonka River and thence southerly to Jonquieres; branch lines from the Ha Ha Bay Ry., and a line to the Maurice River.

The company, we are advised, has under consideration a project for the building of a line from Ha Ha Bay Jct. to Mistassini, Que., 64 miles. (Nov., 1918, pg. 488).

St. John and Quebec Ry.—We are officially advised that the entire track on the extension from Gagetown to the connection with the C.P.R. at Westfield, N.B., was laid during 1918, and that during 1919 ballasting and other finishing up work was carried out. There still remain some small works to be completed, but this is not interfering with the operation of the line. The section was taken over Oct. 1, 1919, for operation by the Canadian National Rys., which is also operating the previously completed section between Gagetown and Centerville, N.B. (Dec., 1919, pg. 655).

Salmon River and Northern Ry.—The Quebec Legislature is being asked to amend the statutes of 1905, chap. 59, by authorizing a change in the location of the main line then authorized, by permitting the building of branches, and by extending the time fixed for construction. The statute referred to authorized the company to build a railway from Grenville, westerly to Montebello, thence northerly along the Salmon River Valley to the west side of Lake Papineau thence northerly on the east side of the Nation River and Lake Nomining to the Rouge River Valley, and along that to the National Transcontinental Ry. Authority was also given to build branch lines, and to develop water powers at points touched by the railway. The provisional directors named in the act are: J. S. Fassett, Elmira, N.Y.; G. W. Thayer, Rochester, N.Y.; C. Adsett, Hornersville, N.Y.; W. L. Haskell, Ulysses, Pa., and Westmount, Que.; F. W. Hibbard, Westmount, Que.; and Jas. Walker, Montreal.

Sarnia, Ont.—A press report states that the building of a spur line at an estimated cost of $37,500 is being considered by Lambton, Ont., County Council. There is a report that a steel plant is to be built near Sarnia, and this proposal probably is for the purpose of connecting the site of the projected plant with the railways at Sarnia.

Toronto, Hamilton and Buffalo Ry.—In connection with a switch connecting the Toronto, Hamilton and Buffalo Ry. into the Canadian Westinghouse Co.'s plant at Hamilton, Ont., the Board of Railway Commissioners recently ordered the city to pay the cost of guarding the crossing of Aberdeen St. The city board of works and the board of control are reported to have decided to appeal against the order on the ground that the cost should be borne by the concerns benefitting. (Sept., 1919, pg. 491).

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Toronto New Union Station—Mayor Church of Toronto, who is a candidate for re-election, said at the nomination meeting, Dec. 23:—The union station will be finished next year. The railway will buy the right of way from Cherry St. to Scott St. So far as the viaduct is concerned, I can only say that the city will stand out for the fulfillment of every clause of the agreement."

British Railway Management—A London, Eng., cable of Dec. 8, states Sir Eric Geddes, Minister of Transportation, announced recently that the railway executive controlling the British railways would cease, Jan. 1, 1920, and would be replaced by an advisory board, consisting of 12 general managers, and 4 representatives of employes.

## Railway Rolling Stock Orders and Deliveries.

Imperial Oil Ltd. has ordered 275 tank cars, and 25 compartment tank cars from Canadian Car and Foundry Co.

Algoma Steel Corporation has ordered 2 standard gauge car trucks, 40 tons capacity, from Canadian Car and Foundry Co.

The C.P.R., between Nov. 15 and Dec. 15, ordered a single track steel snow plough, and a double track steel snow plough, from its Angus shops, Montreal, and bought a 150 ton wrecking crane.

The C.P.R., between Nov. 15 and Dec. 15, received the following rolling stock from its Angus shops, Montreal,—10 steel tourist cars, 2 freight refrigerator cars, 1 all steel grain car, and 2 Santa Fe type locomotives.

Canadian Car and Foundry Co., between Nov. 11 and Dec. 13, made the following deliveries of rolling stock,—399 repaired box cars and 283 repaired hopper cars, to G.T.R.; 86 repaired box cars to Grand Trunk Pacific Ry., and 11 tourist cars, to Canadian National Rys.

The Canadian National Rys. will be in the market in the near future for a large amount of rolling stock. While no appropriations have yet been made, Canadian Railway and Marine World understands that tenders will be invited shortly, involving an expenditure of approximately $23,000,000, made up as follows: Locomotives, $4,000,000; freight cars, $16,000,000; passenger cars, $3,000,000.

The Canadian National Rys. 6 flangers, being built by Preston Car and Coach Co., as mentioned in our last issue, will be of wood, with metal draft arms, similar to a 30 ton wooden box car, with 8 longitudinal sills 5 x 9 in., simplex 30 ton trucks, McCord journal boxes, and with cupola in the roof, with air operating mechanism in cupola for operating the flanger. The chief dimensions are,—

| | |
|---|---|
| Length over end sills | 36 ft. |
| Width over side sills | 8 ft. 11 ins. |
| Width inside | 8 ft. 2 in. |
| Height from rail to top of cupola | 15 ft. |
| Center to center of body bolster | 21 ft. 4½ in. |
| Height, top of rail to center of drawbar | 2 ft. 10½ in. |

The Canadian National Rys. 6 steel snow ploughs, ordered from Canadian Car and Foundry Co., as mentioned in our last issue, are of the all steel type, with drop nose and wing, and are operated by air. Ice cutters are provided on the front truck, also air operated. The

Six Wheel (0-6-0) Switching Locomotive Canadian National Railways.

front of the plough is equipped with flexible type pilot coupler, with an extension cast, so that the plough can be coupled to any type of car, and the rear end of the plough is equipped with draft gear. The air brakes are Westinghouse 812, complete with signal and conductor's valves, and hand brakes are made to operate from inside and outside. The headlight is C.N.R. standard incandescent electric. The front end 40 ton trucks are equipped with outside bearings, of similar construction to the standard freight car trucks, with cast steel trucks, 5 x 9 in. axles; rear end trucks, standard 30 ton M.C.B. standard freight car trucks; journal boxes, McCord. The chief dimensions are (snow plough):—

| | |
|---|---|
| Length overall | 32 ft. 1 9-16 in. |
| Width over side sills | 8 ft. 9⅞ in. |
| Height, top of rail to top of eaves angle | 11 ft. 3 in. |
| Height, rail to top of cupola | 14 ft. |
| Width over wings, extended | 16 ft. |
| Extreme width, cupola | 9 ft. 8½ in. |
| Extreme length, cupola | 4 ft. 11¼ in. |
| Truck centers | 18 ft. |
| Wheel base, leader truck | 4 ft. 2 in. |
| Wheel base, rear truck | 5 ft. 3 in. |
| Weight, approximately | 60,700 lb. |

# Traffic Orders by Board of Railway Commissioners.

### Free and Reduced Railway Passenger Transportation.

General order 274, Nov. 20, 1919. See separate article: "Free and reduced railway passenger transportation," on another page of this issue.

### Indication of Changes in Tariffs.

General order 275, Dec. 16, 1919. Re indicating changes in tolls in freight, passenger, express, telephone, and telegraph schedules. Upon its appearing to the board that comparison of freight, passenger, express, telephone, and telegraph schedules, with those which they supersede or amend, should be facilitated, and in pursuance of the powers conferred upon the board by the Railway Act, 1919, sec. 324, and upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that all freight, passenger, express, telephone, and telegraph tariffs, and supplements thereto, applying between points in Canada, or from a point in Canada to a foreign country, hereafter filed with the board, shall, except as hereinafter provided, indicate advances thereby made by the symbol "A," and reductions by the symbol "R," with the necessary explanatory note, in the following manner, viz:

1. In schedules which show the rates opposite the station, the proper symbol to be shown against each rate, or each rule or regulation, changed.

2. In schedules in which the rates appear in a table separated from the station list: (a) Unless the station groupings have been varied relatively to their rates; the proper symbol to be shown in the rate table in the manner prescribed in sec. 1 hereof; (b) if the station groupings have been varied relatively to their rates; the proper symbol to be shown against the reference on the station page to the rate table and against each rule or regulation changed.

Provided that if it is found impracticable in a certain case to indicate changes by either of the methods herein prescribed, application may be made to the board, accompanied by a printer's proof of the proposed schedule, for relief from the provisions of this order in such case.

And it is also ordered that the character of the schedule be shown at the top of the title page, thus: "Advance," "Reduction," "Reissue," "New Rate or (Rates)" and so on, as the case may be. And it is further ordered that order 16,900, June 27, 1912, be rescinded.

### G.T.P.R. Coal Freight Charges.

29,102, Dec. 5, 1919. Re complaint of Great West Coal Co., Brandon, Man., against freight charges assessed by Grand Trunk Pacific Ry. on a car of coal shipped from Drumheller to Raymore, Sask., and afterward diverted to Punnichy, Sask. Upon hearing the complaint at Winnipeg, Nov. 15, 1919, in the presence of counsel for the railway company and a representative of the complainant company. It is ordered that the complaint be dismissed.

### Free Return Transportation for Live Stock Shippers.

29,110, Dec. 12, 1919. Re complaint of executive boards of Western Live Stock Shippers' Association and Winnipeg Live Stock Exchange against cancellation by the Canadian Pacific, Canadian Northern and Grand Trunk Pacific Railways of all free return transportation for live stock shippers west of Port Arthur, to take effect Feb. 1, 1916; and order 24,673, Jan. 22, 1916, suspending such tariffs. In pursuance of the provisions of the Railway Act, 1919, secs. 45, 345 and 347, it is ordered that order 24,673, Jan. 22, 1916, suspending the tariffs therein specified, be rescinded; this order to come into force Jan. 1, 1920.

### C.P.R. Class Freight Rates.

29,132, Dec. 11, 1919. Re C.P.R.'s proposed tariff of class freight rates between stations west of North Bay to Mackenzie and Sault Ste. Marie, Ont., and stations in Canada east of North Bay, on C.P.R. and connecting railways. Upon its appearing impracticable to indicate the rate changes by symbols, as required by order 16,900, June 27th, 1912; it is ordered that the C.P.R. be relieved from complying with the requirements of the said order.

### Car Demurrage During Winnipeg Strike.

29,134, Dec. 9, 1919. Re application of Winnipeg Board of Trade for an order determining whether, or to what extent, the Car Demurrage Rules shall apply in connection with delays to cars due to the general strike in Winnipeg during May and June, 1919. Upon hearing the application at Winnipeg, Nov. 15, 1919, the Winnipeg Board of Trade, Empire Sash & Door Co., Imperial Oil Co., Blackwood Limited, E. L. Drewry Limited, Canadian Manufacturers' Association, Canadian Car Service Bureau, and Tees and Persse being represented and what was alleged the railway companies affected consenting; it is ordered that the demurrage toll to be charged by railway companies in connection with delays to cars at Winnipeg due to the general strike in Winnipeg, from May 15 to the fifth day after its termination, viz., July 1, 1919, both dates inclusive, be $1 a car per day.

### Grand River Railway Passenger Fares.

29,145, Dec. 12, 1919. Re application of Grand River Ry., for authority to file tariffs providing for a general advance in tolls for the carriage of passengers in the same manner and to the same extent as permitted by the board in the case of steam railways. Upon reading what is filed in support of the application, it is ordered that the company be authorized to increase its standard maximum fare for the carriage of passengers to 2,875c a mile; such increased fare not to become effective until the company has complied with the requirements of the Railway Act, 1919, sec. 334.

### Coal Handling Facilities at Ottawa.

29,161, Dec. 17, 1919. Re application of O'Reilly & Belanger for an order under sec. 312, 316, 317, 319 and 320 of the Railway Act, directing the G.T.R. to provide reasonable and proper facilities for unloading, handling, storing and delivery of the applicants' coal at the coal trestle erected upon the railway company's lands in its station yards at Isabella St., Ottawa, and for mandatory order directing the railway company forthwith to terminate an agreement or lease, in respect to the said coal trestle, dated Oct. 25, 1916, made between the railway company and the Coal Trestle Co. Ltd.; upon hearing the application at Ottawa, Dec. 2, 1919, in the presence of counsel for applicants and the railway company, it is ordered that the application be refused.

## Steam Railway Track Laid in 1919.

The following is a preliminary statement showing new track laid on steam railways during 1919:

| | Miles |
|---|---|
| **Alberta and Great Waterways Ry.—** | |
| Mileage 276.90 to 283.50 | 6.60 |
| **Canadian National Rys.—** | |
| Thunderhill branch, Sask. | 17.45 |
| Swift Current branch, Sask. | 12.96 |
| Melfort-Humboldt line, Sask. | 0.35 |
| Luck Lake branch, Sask. | 19.75 |
| Hanna-Medicine Hat line, Alta. | 48.57 |
| Oliver-St. Paul de Metis line, lAta. | 55.57 |
| Peace River line, Alta. | 4.30 |
| **Vancouver Island line—** | |
| Mileage 24.59 to 52.43 | 27.84 |
| | 186.30 |
| ***Dolly Varden Mines Ry.—** | |
| Dolly Varden Mines to Alice Arm, B.C. | 18.00 |
| ***Lacombe and North Western Ry.—** | |
| From near Bentley to Rimbey, Alta. | 17.00 |
| **Pacific Great Eastern Ry.—** | |
| Lone Butte near Horse Lake to Deep Creek near Soda Creek, B.C. | 82.00 |
| Total | 309.90 |

*Approximate.

The Canadian National Rys. graded 261.10 miles on 17 branch lines during 1919 in the prairie provinces, and graded approximately 40% of the mileage of the Kamloops - Kelowna - Vernon - Lumby line in British Columbia. Track was laid on 158.46 miles on seven of the prairie branch lines. In addition 6.75 miles of second track was laid near Munson, Alta., in the Drumheller coal mining region.

While the Canadian Pacific Ry. did not lay track on any new lines during 1919, it put under contract, eight branch lines, or extensions, totalling 213 miles, in Manitoba, Saskatchewan and Alberta, on which grading is reported to be from 5% to 56% completed.

**Canadian Collieries (Dunsmuir) Ltd.** Reorganization—A London, Eng., cable of Dec. 5, states that a plan of reorganization for this company has been drawn up, and that a meeting of shareholders to sanction it will be held Jan. 19. The plan it is said will virtually hand over the property to the bondholders. The company a Mackenzie-Mann one was incorporated April 8, 1910, and acquired the capital stock and coal interests of the Wellington Colliery Co., and James Dunsmuir on Vancouver Island, B.C. The property includes the Wellington Colliery Ry. The liabilities include $15,000,000 of capital stock, $10,000,000 of funded debt and $2,599,885 accrued bond interest.

# Canadian National Railways Construction, Betterments, Etc.

**Sydney Terminal Facilities**—A press report states that Mr. Gregory, of the Dominion Government's engineering staff has been in Sydney, N.S., taking some soundings near the old government wharf, and running some levels in the vicinity of Victoria Park, in connection with some projected improvements of the railway and shipping terminal facilities. The report states that the government has all the necessary data on hand for the construction of the terminals, and it is expected that tenders will be called for shortly for the work to be done. The government is said to have provided $100,000 in the estimates for the erection of a new wharf to replace the old one destroyed by fire some years ago. The construction of railway facilities with the report states, involve an additional expenditure of $500,000.

**St. John Improvements**—A. P. Barnhill, one of the C.P.R. directors on returning to St. John, N.B., Dec. 5, after attending a meeting of the board in Toronto, is reported to have said: "The important matter now for St. John is not so much the railway service as terminal facilities for ocean business. The railway service is here but we still lack facilities adequate for the ocean business which must soon come here. In answer to my representations that. St John is entitled to consideration in the allotment of steamships equal to that given to any other port, the fear has been expressed that there will be congestion at this port, that is, that the facilities are not adequate for the steamships which are scheduled to arrive here. While I am assured by the harbor master and by others having knowledge of our facilities that these are adequate for the present year, yet it is apparent that they must be greatly increased at once to take care of the business of the immediate future."

**West River, Lachute Bridge**—The Board of Railway Commissioners has authorized the rebuilding of the railway bridge across the West River, Lachute, Que.

**Brockville Terminal Facilities**—The old Brockville, Westport and Northern Ry., now a part of the Canadian National Rys., had its southerly terminus at Brockville, Ont., with terminal yards, etc. Now that the G.T.R. is about to be taken over by the Dominion Government, an arrangement is reported to have been concluded under which the G.T.R. terminal facilities will be utilized for both lines. It is also reported that a new station may be built and the terminal facilities enlarged.

**Whitefish River Bridges**—The Board of Railway Commissioners has authorized the building of bridges over the Whitefish River, at miles 18.9, 20.3 and 21.6, North Lake Subdivision, Ont.

**Oakland Extension**—The Board of Railway Commissioners has authorized the building of the extension of the Oakland line across 23 highways in Manitoba.

**Amaranth Extension**—The Board of Railway Commissioners has approved location plans for the Amaranth, Man., extension, through Tps. 21 and 22, range 11 and 12, west principal meridian, mile 59.49 to 69.73, and has authorized the building of the line across highways between those points.

**Kamsack Station**—The Board of Railway Commissioners has ordered the completion of additions and alterations to Kamsack, Sask., station by May 15.

**Oliver-St. Paul de Metis Branch**—A press report states that track has been laid to the north end of Cache Lake, mile 98.5 from Oliver, in Sec. 31, Tp. 59, Range 12, west of 4th meridian, Alta. From this point to St. Paul de Metis, 21 miles, grading is reported to be practically completed, but owing to shortage of rolling stock, the track will not be laid at present. Ballasting is reported to have been completed from mile 38.9 to 98.5. A station has been built at Radway Centre, mile 43. A station and stock pens have been built at Sinoky, mile 65, and a freight shed and stock pens at Cache Lake.

**Peace River Branch**—Track lying was reported to be in progress on the extension of the line from Sangudo, Alta., in the direction of Peace River, early in Dec., 1919. The line has been in operation for some years between Peace River Jct., 36 miles westerly of Edmonton, to Sangudo, 31 miles, and grading was completed in 1913 to Whitecourt. This grading was repaired during the summer of 1919. Material for laying 15 miles of track was reported to be on the right of way at the end of Nov., 1919, and it was expected that rails for an additional 18 miles would be secured from Ranfurly, Alta., on the main line, where 60 lb. rails have been replaced by 85 lb. rails.

**Kamloops - Vernon - Kelowna - Lumby Branch**—The route map of this branch shows a line from Kamloops Jct., on the north site of the Thompson River, entering Kamloops by a bridge over the river and proceeding along the south bank for several miles, then turning south and east, passing by Monte Lake and reaching Armstrong, then almost directly south to Vernon, and passing by the west side of Long Lake, and the east side of Woods Lake, reaching Kelowna, on Okanagan Lake. From Lumby Jct., just south of Vernon, a branch runs easterly to Lumby.

The Board of Railway Commissioners has approved the location of the following sections of the branch: Mile 14.23 to 32.96 to 56 east of Kamloops Jct.; mile 66 to 88.22 east of Kamloops Jct. From Lumby Jct. to Lumby, mile 0 to 14.23; from Lumby Jct., north to Vernon, 1.29 miles, and from Lumby Jct., south to Kelowna, 33.26 miles. These approvals cover the entire line with the exception of a section between Kamloops and mile 14.23, east of Kamloops Jct., and between mile 88.22 (near Armstrong) and Vernon. The management's desire is said to be to link up its line with and to obtain running rights over the C.P.R. between the points named. (Dec., 1919, pg. 658).

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**Flin Flon Mine and Projected Railway**—A Winnipeg, Man., report, Dec. 18, states that nothing further has been done in connection with the proposed sale of the Flin Flon mine near Pas, Man., to Hayden Stone & Co., of Boston. Hon. E. Brown, Treasurer of Manitoba, stated that the present financial situation is responsible for the delay in the sale, but added that a sale would be made in the future though not necessarily to Hayden Stone & Co.

## Arrangements for Acquisition of G.T.R. by Dominion Government.

A meeting of G.T.R. shareholders will be held in London, Eng., in the middle of January, to ratify the agreement between the company and the Dominion Government, for the acquisition of the G.T.R. system. In referring to this, the London Times says that, while nobody will pretend that the government has been generous, the terms are better than at one time seemed probable, so on the whole the arrangement must be regarded as satisfactory, and that it renders safe something like $70,000,000 to $80,000,000 of British capital invested in Canadian railways.

It is said that in the arbitration proceedings between the Dominion Government and the G.T.R., in respect to the acquisition of the G.T.R. system, the G.T.R. will be represented by W. H. Biggar, K.C., Vice President and General Counsel; F. H. Phippen, K.C., Toronto; A. W. Atwater, K.C., Montreal; and Eugene Lafleur, K.C., Montreal.

## The Timiskaming and Northern Ontario Railway's Future.

In the course of a recent trip to Cobalt and other points in Northern Ontario, Hon. E. C. Drury, Premier of Ontario, received several delegations who presented for his consideration matters connected with the future of the Timiskaming and Northern Ontario Ry. In reply to what was suggested he is reported to have intimated at Cobalt, Dec. 8, that the Ontario Government might suggest the acquisition of the T. and N.O.R. by the Dominion Government. The T. and N.O.R., running from North Bay to Cochrane, connects the Grand Trunk lines in old Ontario, which are to be acquired by the Dominion, with the National Transcontinental Ry., which the Dominion now has. The Canadian National Railways system now has running rights over the T. and N.O.R. The Ontario Government railway might be considered a useful addition to the national system if it could be acquired on satisfactory terms.

An Ottawa dispatch of Dec. 9, stated that the Ontario Premier's suggestion did not occasion any surprise in government circles there, and that the opinion was that such a proposition would be favorably received.

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**Curtailment of Canadian Train Service**—In connection with the coal shortage in the United States, which affected the supplies for Canada, and the general curtailment of the train service south of the border, a very general withdrawal of trains was put in effect by Canadian lines Dec. 1, and on subsequent days up to Dec. 10. The last and most important train to be affected was the C.P.R. fast train, Trans-Canada Limited, which was taken off Dec. 31. The trains affected were mostly local ones although some having U.S. connections were cut off to suit the curtailments south of the border line. The G.T.R. is reported to have had about 90 trains, and the C.P.R. 35 trains cut off. For the convenience of Christmas traffic, most of the trains cut off were operated temporarily on Dec. 24, 25 and 26. With the settlement of the strike in the United States, the possibilities of the restoration of all the services is looked for, but it is reported that it will take at least two months to clear up the situation created.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian National Rys.—T.W.BROWN, heretofore Roadmaster, Muskoka and Orillia Subdivision, Toronto, who, as announced in our last issue, was transferred to other services, has since resigned.

T. CARROLL has been appointed Supervisor of Work Equipment, with jurisdiction south of the St. Lawrence River. Headquarters, Moncton, N.B.

C. P. DISNEY, formerly in the Bridge Department, Intercolonial Ry., Moncton, N.B., and more recently in military service overseas, has been appointed acting Bridge Engineer, Eastern Lines, Canadian Northern Ry., vice W. P. Chapman, who has been granted leave of absence, at the expiration of which he will leave the service.

G. F. FOWLER, City Passenger Agent, Hamilton, Ont., has resigned to enter White Star Line's service at Toronto.

J. MACGILLIVRAY, formerly Manager, and afterwards Receiver, Inverness Coal & Ry. Co., Inverness, N.S., is now attached to the office of the General Manager, Western Lines, C.N.R., Winnipeg, and is handling special work.

W. F. SECORD has been appointed Supervisor of Work Equipment, with jurisdiction north of the St. Lawrence River. Headquarters, Toronto.

Canadian Pacific Ry.—SIR JOHN EATON, President, The T. Eaton Co. Ltd., Toronto, has been elected a director of the C.P.R., succeeding the late W. D. Matthews.

H. L. McKEAN, heretofore, Soliciting Freight Agent, has been appointed Travelling Freight Agent, St. John, N.B., vice J. P. Doherty, resigned on his appointment as Port Agent, Canadian Government Merchant Marine, Ltd., St. John, N.B., as announced in our last issue.

Lieut.-Col. BLAIR RIPLEY, C.B.E., D.S.O., formerly Engineer of Grade Separation, North Toronto, later in military service overseas, has been appointed Engineer, Ontario District, vice A. L. Hertzberg, retired. Office. Toronto.

T. D. UTLEY, heretofore Car Inspector and relieving Car Foreman, Swift Current, Sask., has been appointed Car Foreman, Weyburn, Sask., vice F. C. Reid, transferred to Vancouver, B.C.

Canadian Pacific Ocean Services Ltd.—W. BAIRD, General Agent, Liverpool, Eng., has been appointed General Passenger Agent for Europe. Office, Liverpool, Eng.

E. T. STEBBING, heretofore Passenger Manager, Liverpool, Eng., has returned to his former position as General Agent, Passenger Department, New York.

Grand Trunk Pacific Ry.—J. T. ARMSTRONG, heretofore Chief Dispatcher. Biggar, Sask., has been appointed Chief Dispatcher, Edmonton, Alta., vice C. H. Brown, whose appointment as Assistant Superintendent, Edmonton, Alta., was announced in our last issue.

G. C. BARNETT, heretofore Roadmaster, Biggar to Wainwright, Biggar, Sask., has been appointed Roadmaster, Biggar-Calgary, and Battleford and Cutknife Branches, Biggar, Sask., vice A. Rimstad, transferred.

J. H. GROAT heretofore Assistant Superintendent, Edmonton Alta., has been appointed Chief Dispatcher, Biggar, Sask., vice J. T. Armstrong, transferred to Edmonton, Alta.

A. RIMSTAD, heretofore Roadmaster, Biggar-Calgary and Battleford and Cutknife Branches, Biggar, Sask., has been appointed Roadmaster, Biggar to Wainwright, both inclusive, Biggar, Sask., vice G. C. Barnett, transferred.

W. H. TURNBULL, has been appointed locomotive foreman, Biggar, Sask., vice J. A. Moran, resigned.

## Canadian National Railways Staff Concert, Etc.

The Canadian National Railways, Toronto office staff held a social evening recently, which included a concert and dance. During the evening a handsomely illuminated address was presented to the President, D. B. Hanna, reading as follows:—

C. P. Disney,
Acting Bridge Engineer, Eastern Lines, Canadian Northern Railway.

"We, the employes of the Toronto offices of the Canadian National Rys., take this opportunity of conveying to you an expression of our united loyalty, devotion and affection. We realize the great task you have undertaken as President of one of the largest publicly owned enterprises in the world and that the unfailing loyalty and support of all your employes are necessary to make this an unqualified success. We know that efficiency is the keynote to the ultimate success of the Canadian National Rys., and with your wonderful example of courage and devotion to duty always before us we wish to assure you that our great aim will be to assist you in making the service of this great railway one hundred percent efficient and sincerely hope that you may be spared to serve for many years as its President. 'Heaven keep ye free frae care and strife till far ayont fourscore.'"

Mr. Hanna, in replying, said he was at a loss for words to reply to such a testimonial and that it was something he would treasure more highly than anything else which could have been given him, and would be handed down to his family as an heirloom. While he did not require the address to assure him of the esprit de corps, loyalty and devotion existing between the employes of the Canadian National Rys. and himself, for he already had found it through years of service together, he appreciated this expression of it more than he could tell.

## Railways Taken Over by Dominion Government.

Following is a list of railways which have been acquired by the Dominion Government, since Aug. 1, 1914, and now operated as Canadian National Railways, the dates mentioned being those on which they were taken over:—

Owned Lines:

| | |
|---|---|
| International Ry. of New Brunswick | Aug. 1, 1914 |
| New Brunswick and Prince Edward Island Ry. | Aug. 31, 1914 |
| Moncton & Buctouche Ry. | June 1, 1918 |
| Salisbury & Albert Ry. | July 1, 1918 |
| Elgin & Havelock Ry. | June 1, 1918 |
| St. Martins Ry. | June 1, 1918 |
| York & Carleton Ry. | June 1, 1918 |
| Quebec & Saguenay Ry. | Sept. 1, 1919 |
| Hudson Bay Ry. | Oct. 1, 1918 |

Controlled Lines:

| | |
|---|---|
| Canadian Northern Rys. System | Nov. 20, 1918 |

Leased Lines:

| | |
|---|---|
| St. John & Quebec Ry. | Jan...1, 1916 |
| Vale Railway | May 1, 1915 |

**Dominion Engineering and Machinery** Co. Ltd., has been incorporated under the Dominion Companies Act with authorized capital of $3,000,000 and office in Montreal, to carry on the business of general engineers and contractors for the construction of public and private works and a variety of other businesses incidental thereto. The provisional are L. H. Ballantyne, F. G. Bush, G. R. Drennan, H. W. Jackson, and M. J. O'Brien, Montreal. In connection with the announcement of the incorporation of the company, there also appeared notice of the passing of a bylaw, numbered 21, increasing the number of directors from 5 to 12. The bylaw was passed at a meeting of directors Dec. 8, and the notice is signed by F. G. Bush, Secretary.

Department of the Naval Service.

### NOTICE OF SALE

SEALED TENDERS addressed to the undersigned and endorsed on the envelope "Tender for C.G.S. Thirty-Three," will be received up to noon of Thursday, the 22nd day of January, 1920, for the purchase of the steamer "Thirty-Three," as she now lies at Halifax.

The length of this vessel is 80' 1", gross tonnage 79, registered tonnage 33, H.P. 21, with a speed of approximately 9 knots and is constructed of steel.

Full particulars and permission to inspect may be obtained on application to the undersigned, or to the Captain Superintendent H.M.C. Dockyard, Halifax, N.S.

G. J. DESBARATS,
Deputy Minister of the Naval Service.

Department of the Naval Service,
Ottawa, December 27, 1919.

Unauthorized publication of this notice will not be paid for.

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ESTABLISHED 1898.

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Official Organ of various Canadian Transportation Associations.

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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.

ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of publication.

TORONTO, CANADA, JANUARY, 1920.

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## President Hanna's Christmas Message to Officers and Employes.

D. B. Hanna, President, Canadian National Rys., issued the following, Dec. 24: "To officers and employes:—In this Christmas message I desire to express my hearty appreciation of the co-operative efforts of officers and employes who, with gratifying results, have worked hard to make the first year of the Canadian National Rys. one of progress and success. During the new year let us keep up the good work and show that government owned railways in Canada can be operated efficiently. I do not believe that personal incentive and ambition are eliminated from the make-up of our officers and employes because they work for the government. You may rest assured that the opportunities for promotion are yours and that good work will be recognized and rewarded. In a spirit of goodwill I extend the wish that a full measure of happiness be yours at this Christmas season and that wellbeing attend you throughout the new year."

## Collection and Compilation of Transportation Statistics.

As foreshadowed in previous issues of Canadian Railway and Marine World, the collection, compilation, etc., of railway, canal, express, telegraph and telephone statistics carried on formerly in the Railways and Canals Department, by Comptroller of Statistics, J. L. Payne, has been transferred to the Trade and Commerce Department's, Dominion Bureau of Statistics, where it will be carried on under the direction of the Dominion Statistician and Comptroller of Census, R. H. Coats, B.A. The following staff have been transferred from the Railways and Canals Department to the Dominion Bureau of Statistics, viz.: J. S. Woodill, clerk, railway statistics; S. L. T. McKnight, clerk, canal statistics; C. B. Robinson, clerk, telephone and telegraph statistics; F. L. Kemp, clerk. J. L. Payne, Comptroller of Statistics, Railways and Canals Department, has not been transferred, and it is said that he will have no further connection with the work he has carried on heretofore.

In June and again in Oct., 1919, the Civil Service Commission issued the following notice inviting applications:—A railway accountant for the Transportation Division of the Dominion Bureau of Statistics, Department of Trade and Commerce, at an initial salary of $3,000 a year. Candidates must have a thorough knowledge of railway accounting and statistics in their various phases, based on experience in large railway accounting office, preferably head office of Canadian railway; they must be qualified by education and training to undertake original investigations in different aspects of cost accounting. The position requires initiative and resourcefulness, as well as first hand knowledge of existing railway accounting systems.

We are officially advised that G. S. Wrong, of Toronto, has been appointed to the position. He was in the Hydro Electric Power Commission of Ontario's service up to May, 1918, when he enlisted and he returned to the commission's service after demobilization.

**English Railways Freight Rates** are reported to have been advanced recently from 60 to 70%.

## Railway Finance, Meetings, Etc.

Canadian National Rys.—There has been deposited with the Secretary of State at Ottawa duplicate original of a deep of collateral trust and mortgage dated Oct. 1, 1919, between the Canadian Northern Ry., the National Trust Co., and the Crown, securing certain 5½% guaranteed secured notes of the Canadian Northern Ry.

There has been deposited with the Secretary of State at Ottawa, duplicate original of lease and assignment made between the Canadian Northern Rolling Stock Co. and the Canadian Northern Ry., and the Gerard Trust Co., dated Nov. 29, 1919, supplementary to a lease and assignment dated May 1, 1919, in connection with the Canadian Northern Equipment Trust, Series C, 1919.

The Guelph Jct. Ry.'s net earnings for the last financial period of 13 weeks, were reported, Nov. 26, to be to $20,675, out of which the directors authorized the payment of a dividend of $19,975 to the City of Guelph, Ont. The total amount paid to the city for the last financial year was $69,700, or 14⅝% on the capital stock held by the city. For the preceeding financial year the city received $61,569.86. The line which extends from Guelph Jct. to Guelph, is leased to the C.P.R.

Ottawa Terminals Ry.—Following are the directors for the current year:—President, H. G. Kelley; Vice President, W. D. Robb; Vice President and Treasurer, F. Scott; other directors:—J. E. Dalrymple, R. S. Logan, W. H. Biggar, all being G.T.R. officers.

Timiskaming and Northern Ontario Ry.:

| | | |
|---|---|---|
| Passenger earnings | $ 81,561.37 | $ 50,704.37 |
| Freight earnings | 233,167.82 | 204,219.57 |
| Total earnings | $314,729.19 | $254,923.94 |

## Grain Inspected at Western Points.

The following figures, compiled by the Dominion Bureau of Statistics, show the number of cars of grain inspected on railways, at Winnipeg and other points in the western division, for Nov., 1919, and for two months ended Nov. 30, 1919, and Nov. 30, 1918, respectively:

| | Nov., 1919 | 2 mons. to Nov. 30, 1919 | 2 mons. to Nov. 30, 1918 |
|---|---|---|---|
| C.N.R. | 6,848 | 22,593 | 20.107 |
| C.P.R. | 12,296 | 36,890 | 36,665 |
| G.T.P.R. | 3,169 | 10,056 | 7,519 |
| G.N.R. (Duluth) | 73 | 413 | 552 |
| Total | 22,386 | 69,952 | 64,843 |

Smoke From Railways' Stationary Plants—The Board of Railway Commissioners issued the following circular, Nov. 26, 1919:—Complaint has been made to the board of serious nuisance arising in cities by reason of the befouling of the atmosphere by dense or opaque smoke emitted fro mthe stationary plants of railways in such municipalities. The board desires to be informed by the railway companies subject to its jurisdiction, within 30 days of the date of this circular, whether they are agreeable to the issuance of a general order extending the application of general order 18 to stationary plants, and requiring that such stationary plants be equipped so as to prevent the unnecessary and unreasonable emission of dense or opaque smoke, failing which a hearing of all parties involved will be held and a decision arrived at in the matter.

# Railway Track Design and Manufacture.

By W. E. L. Dyer, A.M.E.I.C., Montreal.

The object of this paper is to outline in as few words as possible the steps taken to overcome difficulties in track construction, that have arisen from time to time, in an endeavor to keep pace with the increased loads and speeds so necessary to modern civilization. It would be impossible to give any detail and I trust these few words may give some idea of the necessity of having more co-operation between manufacturer and user. Our United States friends have several well known track societies, and their publications and standards are practically accepted as standard in Canada. This may have its advantages, as it saves us any responsibility, but on the other hand it does away with the possibility of developing our own ideas, which are usually turned down until they revert back from other sources. This does not seem reasonable and it looks as though the Engineering Institute of Canada might take this into consideration along with its other worries. To bring this point before you, I may say that the proper construction of track and the efficient and economical maintenance involve the science of engineering, although broadly it is not recognized as such.

Of the three recognized stages having to do with tracks in service, either construction or maintenance are as much engineering as that of track location, and when one considers that track and roadbed represent a much larger investment than bridges, water works and sewers combined, the subject is well worth consideration, but in this short paper it would be impossible to go into any detail and the chief points of interest only will be dwelt on.

The word tramway is of Scandinavian origin and primarily means a beam of wood, where the first reference was made in 1555. In lowland Scottish "tram" was used both as a beam of wood, and specifically of such a beam employed as the shaft of a cart, and in some places today the name is still given to wheeled vehicles used for carrying coal in mining. "Tramway" therefore is primarily either a way made with beams of wood or one intended for the use of "trams" containing coal. The usage of today has converted the meaning into the form of electric traction as applied to city traffic and with which we are all familiar.

There has been considerable experimental work done since the first beams of wood were used to lighten the labor of hauling loads, and it was not till 1767 that attempts were made to use better wearing materials, and build on a more permanent basis. The first rails were made of cast iron about 3 ft. long, the section at the middle being shown as in fig. 1, and tapering in depth to the ends, thus making each rail a small girder. The rails were placed 5 ft. between the flanges, which served the double purpose of keeping the wheels in place and strengthening the casting. This rail was not satisfactory to the general public who found difficulty in crossing the flanges, and in 1789 the edge rail shown in fig. 2 was tried, the wheel being kept in place by guards of either blocks or timbers. This rail was used extensively as it did away with the faults of the first experiment.

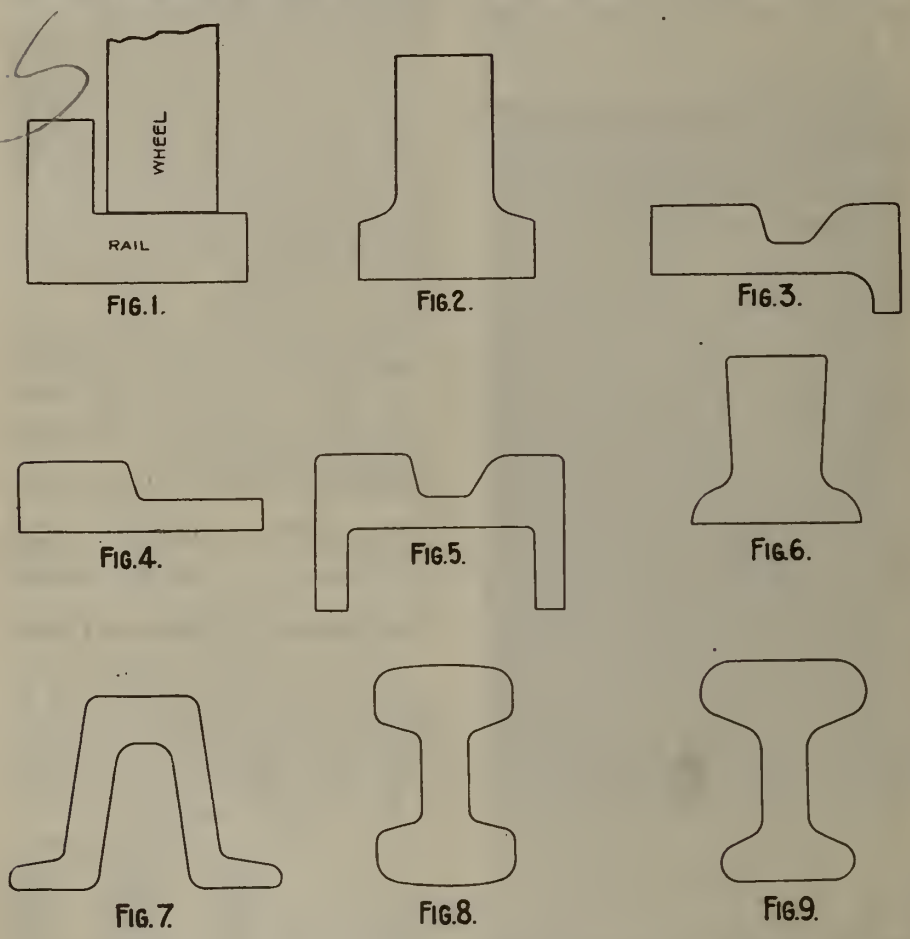


Fig. 1. Plate rail, 1767, cast iron. Fig. 4. Stringer rail without groove. Fig. 7. Bridge rail, 1837, 92 lb.
Fig. 2. Edge rail, 1789, cast iron. Fig. 5. Livesey rail. Fig. 8. Double head rail, 1837.
Fig. 3. Stringer rail, 1800. Fig. 6. Flat bottom rail, 1830, 36 lb. Fig. 9. Bull head rail.

About 1800 a complete change of design was required, owing to the introduction of flanged wheels. The first flanged wheels had a tread of 1¾ in. which probably established the standard track gauge of 4 ft. 8½ in., as used by us today, the first flanged rails having been laid 5 ft. between flanges as mentioned above. Improved methods of manufacture allowed of rolled rails being made about 1820. These rails were supplied in 18 ft. lengths, weighing 2.8 lb. per yard and of the section shown in fig. 3, the rails being spiked to longitudinal ties. This rail was not satisfactory, owing to vehicle wheels catching in the groove and the design was altered to fig. 4, which section was used extensively on American roads.

Fig. 5 shows the first step in obtaining vertical stiffness combined with side spiking.

Important developments in rails were rapid owing to increase in wheel loads, due to the introduction of steam traction and briefly were as follows:

Flat bottom rail (fig. 6), introduced in 1830, weight 36 lb.
Bridge rail (fig. 7), introduced in 1837.
Double headed rail (fig. 8), introduced in 1837.
Bull head rail (fig. 9), introduced in 1840.

The combination of the flat bottom and bull head rails gave the T rail, as used today. The girder rail, as used on public right of way, was first patented in 1859 and successfully rolled in 1877.

Rail joints have been the chief source of revenue to patent attorneys for a number of years and it is difficult to find two people with the same ideas as to what a joint should be. The evolution of joint fastenings has advanced through four stages: 1, Spikes at the end of a rail. 2, The chair, which maintained the ends of the rail in alignment and served as a bearing plate on the joint tie. 3, The fish plate, which kept the rail in alignment and gave partial support to the head. 4, The angle bar, which combining the features of the fish plate, effected a great improvement in both the vertical and horizontal stiffness of the joint and generally speaking is the universal joint fastening of today.

Experiments are being continually tried to eliminate the joint by welding and casting, but the results obtained have up to the present not been of such a nature as to warrant a wholesale adoption. One of the largest Canadian electric railways has developed a joint which is giving very satisfactory results; their method being to bolt up the plate as tight as possible with plates slightly staggered. The plate is then electric welded top and bottom to the rail.

This does away with bonding the track and tests show a perfect joint after severe service. To take care of expansion split points are introduced at proper intervals.

The total cost of joints as described is about $3 each for rails weighing 80 lb. per yard and increasing in proportion to the weight of rail.

In practice the length of splice bars varies from 20 in. to 48 in. A splice less than 26 in. is considered short and one exceeding 32 in. in length is considered long. The objection to a long splice bar is that when bolted up tight proper expansion is not allowed, whereas if bolted loose, there will be trouble very shortly with loose joints.

One method of overcoming bad joints is either to mitre the railends about 55° or to lap the joints. The cost of this method would be prohibitive on straight track, but on special work this practice is usually followed by manufacturers, especially when crossings are made of manganese steel and from my experience it is about the most satisfactory way. I have checked over several lap joints after 18 months service and could not find any additional wear.

The roadbed embraces the foundation or earth support, the fill, and lastly the track. We are only interested in this paper in the roadbed in so far as it allows proper support for the tracks and that is one thing that should have consideration.

Diamond crossings are made extra heavy, to withstand excessive strain, but railways still continue to treat the foundation for the crossings as though there were no undue strains, with the result that in a number of cases failure of the track is due to failure of the foundation. Little extra expense would be occasioned to put in a solid concrete foundation at these points, with ties properly cushioned with 2 in. stone and the life of a crossing would be increased in many cases at least 25%. This point is well worth experimental work as I know one case of a crossing failure, due to foundation being too weak to stand the strain, and satisfactory results were obtained by making a reinforced concrete foundation at that point.

**Special Work of Electric Railways**—It is safe to say that no railway has ever been built that has not had a piece of track that required some special preparation other than that given to plain, straight track before it could be laid in place. It may further be stated that no two street intersections have the same angle combined with similar manhole locations and that railways delight to lay tracks so that curves will run through diamond crossings. It is of course impossible to change location angles to any extent, but it should be possible, with co-operation between engineers in charge of gas, water, conduit and other departments to arrive at some standards of manhole location. Most systems have a considerable percentage of their trackage made up of curves, crossings, switches, etc., and as they are made specifically to fit given locations, they are called "special work."

The possibility of standardizing intersection work is practically impossible, although several spasmodic attempts have been made from time to time, and manufacturers and railway engineers have agreed that switches and mates be standardized for length and radius and that each manufacturer be allowed to supply his own designs; without doubt this makes a very satisfactory arrangement.

It is stated by some authorities that in tracks made with rails of 5 in. or under, all curves over 500 ft. radius may be 'sprung in" and that for heavier rails, such as girder rails, all curves of 1,000 ft. and over may be sprung. I am in favor of all curving being done either with power benders or a crow, as curves from sprung rails, after one year service, usually show angle joints.

The first special work manufactured was made with as small a radius as possible, and no attempt was made to ease off the ends of the curve. Consequently switches and mates were made the same radius as the curve. This practice was hard on the tracks, and required a heavy stock of spares being always kept on hand as in many cases there would not be two switches or mates interchangeable in the same intersection. This made an impossible condition and combined with increased speed and loads intersection work began to standardize on radii and curve easements.

The first step was to compound the curves, and as speeds and weights further increased, three centered curves were used for a number of years, only to be replaced by the spiral, or a curve of constantly changing radius. The selection of a spiral is governed by three main points, viz.: 1, The radius of the main curve must be less than the preceeding branch of the spiral, must be more than the next branch would be, were it produced, and should nearly equal the latter. 2, The longer the spiral the easier the entrance will be. 3, The larger number of branches, the easier on maintenance.

The manufacturer of special work has his own spiral standards and if a student wishes to get any special information he can easily obtain it from catalogues of different manufacturers. At first, special work was made by the nearest blacksmith, but today it is one of the highest branches of manufacturing skill, and very few realize that intersection work, going together on the street like a puzzle picture, has been calculated to about 10 decimal places and that not 1-32 in. variation is allowed in the joints.

Many of the larger intersections require more than a week for calculations, and after that the whole has to be designed so that the several pieces may be manufactured in sizes that can be readily handled in the shop and on the field. Maintenance engineers would prefer crossings made in one piece and the manufacturers would prefer them made in four pieces. This point has been the subject of considerable dispute between the interested parties and had the idea of single piece crossings been adhered to, the manufacturer would have been put out of business.

Special work was first built up from the rail section being laid, bolted together with corner brackets, and sometimes clipped to a bearing plate. To increase wear, the point proper was shortly afterwards machined out from blocks of tool or other toughened steel, held in place with cast iron, which was also used to hold rail ends in place, or of manganese steel.

K. W. Blackwell can be looked on as a pioneer in the introduction of steel centered frogs in Canada, he having imported the steel centers and bolted the rails in place in Montreal. These frogs, I understand, were put into service on the G.T.R., and I happened to see one after about 15 years service, which looked good for about another 15 years. However, traffic was not heavy at that point. For the cheaper types of intersection work this practice is adhered to, but with the advance of knowledge as regards manganese steel, the prospects are that eventually the entire intersection, including the closure rails, will be made of manganese steel. At present the prices asked for this class of work have to be considered. The first cost of solid manganese is higher, but with recent improvements in production the cost can be materially reduced.

There has been, and still is, considerable difference of opinion regarding the merits of what is known as "insert work" and solid managnese steel. One conclusion arrived at, after exhaustive study of the question, is that insert work equalled, and in some cases surpassed, the serviceability of solid manganese work. This conclusion was arrived at without taking into consideration the defects in the entire piece of insert work which develop in service, but was based on the quality of steel insert as compared with solid work. Insert work may be divided into three classes so far as the insert setting is concerned, viz., that which is supported entirely in a spelter bed, that which is partially supported on a machined bed and surrounded with spelter, and that which is supported with a completely machined bearing.

Insert fastenings are of two kinds, those which are renewed from pavement surfaces, and those which are renewed by removing portions of the pavement. The latter type may be either bolted down, or keyed down, construction; the former may be bolted down, keyed in, or have special set screw fastenings. The purchaser of this commodity has a wide range to choose from, and as they all have certain merits and none are perfect it is practically a question of cost which type to use. The defects of insert work may be loose rails, defective body casting or inferior shop practice placing inserts; and if any of the above mentioned defects develop, the wheel loads will rapidly set up a pumping action, which will affect the roadbed, causing complete failure of the piece.

Solid manganese work does not lend itself to any such defects and a piece properly designed, of good workmanship and quality, will not require continual inspection once installed, as breakages do not occur and wear only has to be considered. The first cost of solid manganese is higher, but with recent improvements in production the cost can be materially reduced.

**Special Work for Steam Railways:** It is advisable at this point to draw a distinction between the two types of special work as the operating conditions are so different. Canadian railways have about 40,000 miles of track, and 11,000 turnouts and a number of crossings, to maintain. The greater number of turnouts and crossings are built up from rail.

A frog of any of the kinds in general use, is made of 4 pieces of rail properly shaped and held together by some device or arrangement of minor parts. Frogs are of two kinds, rigid or stiff rail, and spring rail frogs. Rigid frogs are the cheaper type, wearing out rapidly, while spring rail frogs are more durable, and have a life generally conceded to be three times that of a rigid frog. Manganese frogs of various designs are beginning to be used where wear warrants the expenditure, and from tests made the life of a manganese frog is at least six times that of built up work and I have known them to be in service ten times as long. There is little doubt that the built up frogs will rapidly be replaced by manganese, rigid, and spring rail frogs.

To persons not familiar with tracks,

it may be opportune to say that a turnout consists of the combination of a pair of points or switches, with necessary connections for operation and support, a frog and guard rails. Turnouts are either right or left hand, depending on the direction in which they transfer the traffic when running towards the switch point. This point must be borne in mind when spring rail frogs are used, but is not so important with rigid frogs.

At the crossing of 2 tracks, 4 frogs are required. The manner of constructing them depends largely upon the angle at which the tracks meet and on the traffic to which they are subject. In a general way 4 styles of crossing construction are recognized. 1, For crossings of small angles—15° or less—the usual way is to use 4 frogs connected up with intermediate rails. 2, For angles 80° and less, the middle frogs are replaced by movable point frogs, operated mechanically from the signal tower. 3, For angles between 15° and 35° the crossing is made in 4 sections, the end and middle frogs meeting at joints all round. 4, For angles 35° and up the rails on the tracks subjected to heaviest traffic are continuous throughout the length of the crossing and grooves are slotted out to allow flangeway through them. These four styles are again subdivided into guarded and fourth rail types, depending on traffic conditions.

The advantage of using manganese steel for crossings is at once apparent, as the numerous bolts used in crossings will stretch in service, allowing the crossing to loosen, and unless track men are continually tightening the bolts the crossing will quickly wear out. A manganese crossing should not be used as a wear economic for angles of from about 75° to 90°, as between these angles it is not a question of wear, but of metal fatigue. On checking over failures of diamonds, I have found that after about 1,500,000 wheel impacts a manganese crossing is about ready to scrap, and the results obtained are no better than a built up crossing. For angles below 75° manganese can be used economically, and the smaller the angle the longer will be the life of the crossing.

In designing manganese castings, it is advisable to have the sections checked by those familiar with the action of the metal, and numerous failures could be avoided by following these few suggestions: Make the section of uniform thickness. Avoid abrupt changes in thickness. Use parallel ribs, instead of transverse. Arrange ribs to offer the least resistance to shrinkage. Shrinkage of managnese castings will go about ⅜ in. per ft. A bead along the thin edge of casting will prevent cracks and makes for sound castings.

The foregoing paper was read before the Engineering Institute of Canada's Montreal branch recently.

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**British Railway Rates**—London, Eng., cablegram, Dec. 29.—British shippers are to pay the increased cost of railway labor. The new freight rates, which go into effect Jan. 15, show advances from 25 to 100%. Thus the commerce of the country, struggling to revive, foots the bill of higher wages and enhanced cost of material. The revised rates, the government hopes, will put the railways upon a paying basis.

**The King Edward Construction Co.**, which has been formed to build an addition to the King Edward Hotel, Toronto, offered recently for subscription, $1,350,000 guaranteed 7% cumulative redeemable preference shares. The C.P.R. Co. subscribed for $75,000.

## C.P.R. Steel, Hopper, 75-Ton Grain Car.

The car illustrated on this page was built recently at the C.P.R. Angus shops, Montreal, to determine, by actual service test, the net advantages to be obtained from a grain tight, self clearing, car of maximum tonnage capacity, as compared with standard box cars of ordinary capacity.

The basis of the design for tonnage is 4 M.C.B. axles, having 6 x 11 in. journals. The length was determined by the distance, center to center, of unloading hoppers in the modern elevators at Montreal and West St. John, N.B., there is one elevator having hopper centers 48ft. The height was determined by the actual cubic space required to contain the full load of wheat, plus an allowance of at least 12 in. on top to permit of full load being placed in the car without trimming.

Steel Hopper Grain Car, 75 tons capacity, Canadian Railway.

The car is all steel, with the exception of the running board and the ridge on top of the center sill. The general design is practically the same as commonly used for coal cars of equal capacity, except that this car is built with a steel roof. The roof is provided with 3 hatch openings on each side of the running board. The hoppers are arranged 4 on each side of the center sill. The hopper openings are purposely made relatively small, and the frame and slides are machined and carefully fitted. The slides are opened and closed by a rack and pinion arrangement. The slides are locked by a sealing pin passing through the slide and hopper frame. The trucks are Vulcan type, built to U.S.R.A. dimensions.

The car, having given satisfactory performance on its initial trip between Port McNicoll, Ont., and Montreal, has been placed in regular service between the

same port and West St. John, N.B. We are intebted to W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., for the foregoing particulars.

## Locomotive Terminal Equipment Association.

The Locomotive Terminal Equipment Association has been organized, with headquarters in Chicago, "to make surveys for, and distribute data to the public and corporations interested, concerning the equipment of locomotive terminals, in order to secure speedy, efficient and economical handling, cleaning, repairing and returning to service of locomotives; such data to be impartially secured and published, without advertisement, or a special advantage to any individual, firm or corporation that may be a member of the association." There are two classes of members; active members, consisting of individuals, firms or corporations engaged regularly in the manufacture or sale of locomotive terminal equipment, or in any way interested in the construction of locomotive terminals; and honorary members, who shall be elected by the directors, but who shall have no vote nor pay any dues or assessments. The active member's fee is $1,000, and assessments may be made, not exceeding $1,000 a year for each active member.

The following are the officer: President, W. R. Toppan, Manager Railroad Department, William Graver Tank Works, Chicago; Vice President and Secretary, Bruce V. Crandall, Chicago; Treasurer, J. S. Maurer, Secretary and Treasurer, National Boiler Washing Co., Chicago; General Counsel, Frank J. Loesch, 1540 Otis Building, Chicago. Other directors: Spencer Otis, President, National Boiler Washing Co., Shicago; N. S. Lawrence, Vice President and Assistant Sales Manager, Whiting Foundry Equipment Co., Harvey, Ill; Wm. Robertson, William Robertson & Co., Chicago; R. A. Ogle, President, Ogle Construction Co., Chicago; F. W. Miller, President, F. W. Miller Heating Co., Chicago.

The association's headquarters are at 1824 Lytton Building, 14 East Jackson Boulevard, Chicago, where there is a conference room, and where data will be arranged for easy reference, so that railway officials may have every opportunity for obtaining information of every kind pertaining to the rebuilding re-equipping and laying out of locomotive terminals.

**Disposal of Worn Out Railway Ties**—The Railway Association of Canada has issued the following circular to member railways: A number of complaints have reached the association that notwithstanding the existing shortage of fuel, large quantities of worn out railway ties are burned on the right of way. Coupled with this complaint is the suggestion that railways arrange to give surplus old ties to the public and thereby alleviate the fuel shortage, at least to some extent. After consideration of the matter at a recent meeting of the association, the complainants were informed that the railways would be glad to dispose of the old ties as suggested, provided this can be done without expense to the railways. It is suggested that at places where surplus worn out ties are available, notice be given the municipal officials so that if they desire to do so they may avail themselves of the opportunity to obtain them.

# Freight and Passenger Traffic Notes.

The Canadian National Rys. has removed its lower town ticket office in Quebec City to 38 Dalhousie St., a few doors north of the ferry landing.

Owing to the continued increase in the cost of railway operation, no reduced fares were given the general public for the Christmas and New Year holidays.

Pacific Great Eastern Ry. traffic from Squamish, B.C., northerly is reported to have been interrupted for some days, pending the clearing out of a tunnel 18 miles out of Squamish, which caved in Nov. 29.

Alberta reports state that during Sept. and Oct., 1919, the railways handled over 800,000 tons of coal in Alberta. The outfit shipped from the mines is said to be between 500 and 1,000 tons a day in excess of the outfit for 1918.

The G.T.R., which was compelled to reduce its passenger train service, Nov. 30, on account of the coal situation, resumed its full service, Dec. 28, and all trains which has had been temporarily cut off were restored.

The Board of Railway Commissioners has authorized the Canadian Northern Western Ry. (Canadian National Rys.) to carry freight for its Hanna-Medicine Hat branch from Bonar to Saskatoon, Sask., for four months from Nov. 15, 1919.

Following is a comparative statement of the number of loaded cars hauled over Quebec Bridge for the week ended Nov. 29:

| | 1919 | 1918 |
|---|---|---|
| From Bridge Station to Chaudiere Jct.... | 424 | 359 |
| From Chaudiere Jct. to Bridge Station... | 359 | 230 |

The Board of Railway Commissioners has recommended the Dominion Government to sanction an agreement between the Edmonton, Dunvegan and British Columbia Ry. and the Alberta and Great Waterways Ry. respecting the joint use and operation of each company's terminal property at Edmonton, Alta.

Quebec City residents are reported to be agitating for a sleeping car for that city to be attached to the westbound Ocean Limited train, on the Canadian National Rys. Intercolonial section. At present, it is stated, travellers going into Quebec City from the Maritime Provinces, have to get off the train at Levis at 4 a.m.

The Edmonton, Dunvegan and British Columbia Ry., is reported to have carried out from Edmonton, Alta., during the 11 months ended Nov. 30, 1919 the following freight: Settlers effects, 527 cars; cattle, 709 cars; horses, 300 cars; sheep, 19 cars, and to have carried in and transferred to other railways at Edmonton, the following freight: Hay, 1,150 cars; wheat, 296 cars; oats, 414 cars; barley, 49 cars; cattle, 243 cars.

The Canadian National Rys. has arranged an exchange system with the G.T.R., under which additional facilities are offered passengers who desire to travel between eastern and western Canada via Montreal and Toronto. Travellers now have a choice of routes and may travel on "The National" train via North Bay and Cochrane or on train 1, via Caprcol and Port Arthur. "The National" leaves Toronto 9.15 p.m., Monday, Wednesday and Friday, arriving Winnipeg 6 p.m., Wednesday, Friday and Sunday. Train 1 leaves Toronto 9.15 p.m., Tuesday, Thursday and Saturday, arrives Winnipeg 6 p.m., Thursday, Saturday and Monday. Both these trains carry standard and tourist sleeping cars, dining car, first class and colonist coaches. This exchange system of tickets provides a daily, except Sunday, service from Toronto to Winnipeg.

The Chief Railway Commissioner, Hon. F. B. Carvell, is reported to have said at a sitting of the Board of Railway Commissioners in Winnipeg, Dec. 1, in connection with a complaint as to alleged insufficient accommodation on a Canadian National Rys. branch line: "In view of the fact that the cost of operating railways has more than doubled in the last two and a half years, and that the expense to the railways has increased by $60,000,000, the people may as well realize that they cannot have excessive railway accommodation, such as a train a day or two trains a day, unless they are prepared to pay for it."

The car ferry steamship Prince Edward Island, operating between Tormentine, N.B., and Port Borden, P.E.I., is reported to have made 288 trips in the 48 days from Oct. 1 to Nov. 21, 1919, an average of 3 round trips a day. The number of cars ferried across was 2,865, an average of 59 a day. On the third rail district of the P.E.I.R., there were 1,297 cars handled, of which 738 were received from and 559 forwarded to the mainland; while from the narrow gauge districts there were 1,440 cars forwarded to Port Borden and there transhipped to standard gauge cars, and 78 narrow gauge cars were loaded at Port Borden with freight from the mainland, during the period named.

The Edmonton, Dunvegan and British Columbia Ry., and its subsidiaries—the Alberta and Great Waterways Ry., and the Central Canada Ry.—put a new schedule of passenger trains in operation out of Edmonton, Alta., Nov. 30. A train leaves Edmonton at 3 p.m., Mondays and Thursdays, arriving at McLennan, 7.30 a.m., Spirit River, 2.20 p.m., and Peace River 1.30 p.m., on Tuesdays and Fridays. The return train leaves Peace River, 3.30 p.m., Spirit River 3.00 p.m., and McLennan, 11.20 p.m., Tuesdays and Fridays, and arrives in Edmonton, 2.50 p.m., Wednesdays and Saturdays. A train leaves Spirit River at 2.30 Tuesdays and Fridays, arriving at Grande Prairie at 8 p.m., the same days; and a train leaves Grande Prairie at 8 p.m., arriving at Spirit River 1.30 p.m. Tuesdays and Fridays. A train leaves Edmonton at 8.20 a.m. on Mondays and Thursdays, arriving at Lac la Biche at 6.30 p.m., and returns thence at 6.30 a.m. Tuesdays and Fridays, arriving at Edmonton, at 4.30 the same evenings.

**United States National Accident Prevention Drive**—The U.S. Railroad Administration has received a report from its safety section, showing the standing of all roads under Federal control, during the National Accident Prevention Drive from Oct. 18 to 31, 1919. The Grand Trunk Western Lines Rd. had 0.011 casualties per 100 employes during the drive, which is the lowest rate of any road having as many employes. The Atlantic Coast Line, with 24,307 employes, made a record of 0.012 casualties per 100 employes, which is the next best record. The Grand Trunk Western Lines Rd. has 1,001 miles of track and 9,699 employes, only 2 of whom were injured during the period mentioned.

# Electric Railway Department

## Taxation of Electric Railway Substructures and Superstructures in Ontario.

Under the Ontario Assessment Act, prior to the Ontario Legislature's last session, considerable discrimination was made between the mode of assessment of electric and steam railway companies properties. Previous to this year, a number of appeals were prosecuted by the Canadian Northern Ry.'s Tax Department on behalf of the Niagara, St. Catharines & Toronto Ry., a C.N.R. subsidiary company, on the grounds that the substructures and superstructure of an electric railway, when situated on the company's private right of way, was exempt from taxation. The grounds of the company's appeal were substantiated under sec. 44 of the Ontario Assessment Act, R.S.O., 1914, chap. 195, which provides that, "The property by paragraph 5 of clause (h) of sec. 2 of the act declared to be land . . . owned by companies operating steam and electric railways, etc., shall be assessed in the ward in which the head office of such companies or person is situate, and in assessing such property, whether situate or not situate, on a highway, street or road or other public place, shall be assessed at its actual cash value as the same would be appraised upon sale to another company, possessing similar rights and franchises."

The property referred to in paragraph 5 of clause (h) of sec. 2, is described under this particular section as being "All structures, fixtures, affixed to any highway, lane or other public communication."

The company, therefore, contended that the intention of the act was merely to assess the structures and fixtures, situate on a highway as declared by sec. 44 above referred to, and to exempt in a similar manner to steam railway lands, structures and superstructures situate on a private right of way. The matter was finally disposed of on appeal to the county judge in the case of Grantham municipality, where it was held that the ambiguous subsec. 3 of sec. 44, providing for the assessment of lands described under paragraph 5 of clause (h) of sec. 2 (superstructure situate on a public highway), would also include superstructure situate on a private right of way by virtue of the fact that the subsection ambiguously read, "The superstructure and substructure on any highway" should be assessed whether situate on any highway or not (private right of way), at its actual cash value as the same would be appraised upon sale to another company possessing similar rights and franchises. The decision of the county judge in this matter meant that where steam was the motive power, the superstructures and substructures situate on a private right of way were exempt from taxation under sec. 47 of the act (which specifically held this class of property exempt from taxation), while similar property of a railway operated by electricity would be held assessable.

Finally, the attention of the Ontario Government was drawn to the unfair discrimination and an amendment was passed at the legislature last session providing that "Notwithstanding anything contained in this section or any other section of this act, the structures, substructures, superstructures, rails, ties, poles and wires of an electric railway, shall be liable to assessment in the same manner and to the same extent as those of a steam railway are under the provisions of sec. 47 and not otherwise."

Irrespective of this amendment, the City of Toronto again assessed the Toronto Suburban Ry. Co., another C.N.R. subsidiary, for substructure, superstructure and machinery, etc., situate on the private right of way of the company. The C. N. R. Tax Commissioner, T.G. Watson, prosecuted the appeal before the court of revision on June 2. The assessment, however, was confirmed and further appeal was made to the county judge. The principal grounds of the appeal are as follows:

The amendment passed, at the legislature's last session, to sec. 44, relating to the assessment of electric railway companies, provides that, "The structures, substructures and superstructures, etc., of an electric railway company shall be liable to assessment and taxation in the same manner and to the same extent as those of a steam railway are under the provisions of sec. 47 and not otherwise."

Sec. 47 of the Assessment Act provides in subsec. (a) that the roadway or right of way of a railway company shall be assessed at its actual cash value, not including the structures, substructures and superstructures, rails, ties and poles, and other property thereon and subsec. (c) provides that the structures, substructures and superstructures, rails, ties and poles upon, in, over, under or affixed to any highway, shall be assessed at their actual cash value as the same would be appraised upon sale to another company possessing similar rights and franchises.

Subsec. 3 of sec. 47 provides that, "Notwithstanding anything in this act contained, the structures, substructures and superstructures, rails and other property on railway lands and used exclusively for railway purposes or incidental thereto (except station, freight sheds, offices, warehouses, elevators, round-houses and repair shops), shall not be assessed."

Further, it is provided, under subsec. 5 of sec. 47, that, "A railway company assessed under this section shall be exempt from assessment in any other manner for municipal purposes, except for local improvements."

The Toronto Suburban Ry. Co.'s appeal in the City of Toronto was filed on the two grounds: First, that the recent amendment to the Assessment Act, providing that the assessment of electric railway companies should be made in the same manner and to the same extent as the property of a steam railway under sec. 47 of the act, above referred to, would exclude from taxation the substructures, machinery, etc., of the company, situate on lands owned by the company in a similar manner as the exemption granted the same class of property of a steam railway. Further appeal was prosecuted on the grounds that the Toronto Suburban Ry. would be exempt from business taxes under the recent amendment to sec. 44, which provides that an electric railway shall be assessed in the same manner and to the same extent as steam railways under sec. 47 of the act.

Subsec. 5 of sec. 47 provides that, "A railway company assessed under this section shall be exempt from assessment in any other manner for municipal purposes except local improvements." This subsection has always excluded, without question, the lands of a railway company from business taxes, and it was, therefore, submitted that an electric railway company under the recent amendment is entitled to a similar exemption.

The act itself seems perfectly clear on this point, and on equitable grounds, it would seem reasonable that all railway companies, whether operated by steam or electricity, should be granted the same basis of assessment. On appealing before the court of revision for the City of Toronto, the court was smoewhat divided in opinion. The assessment was finally confirmed and further appeal was, therefore, made to the county judge.

The matter came before County Judge Coatsworth towards the end of October, when he at first decided to confirm the assessment and then, by request, consented to reserve decision. It appears that he is of the opinion that the company's transformers are not in the nature of a structure and are, therefore, correctly assessable under the provisions of the 1919 amendment to sec. 44 of the Ontario Assessment Act.

County Judge Coatsworth finally held that the Toronto Suburban Ry. Co.'s transformers could not be defined as structures under the 1919 amendment to the Assessment Act which provides that, "The structures, substructures and superstructures, etc., of an electric railway company shall be liable to assessment in the same manner and to the same extent as those of a steam railway company are under sec. 47 of the act."

In this particular case, the Toronto Suburban Ry. is not the owner of the building containing the transformers, and there was, therefore, no appeal by the railway as to the assessment of the building. The Grand River Ry. has appeals pending in Preston and Kitchener, where the power houses are assessed. It would seem that these buildings would be exempt from assessment under sec. 47 of the Assessment Act which declares that 'Structures of a railway company shall be exempt, except stations, freight sheds, offices, warehouses, elevators, hotels, round houses, machine, repair and other shops."

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**Service at Cost Defeated in Minneapolis**—The Minneapolis, Minn., City Council passed an ordnance, Sept. 4, 1919, granting a new franchise to the Minneapolis St. Ry. (Twin City Rapid Transit Co.), on a cost of service basis. The franchise was submitted to the ratepayers on Dec. 9 for ratification and was defeated by a vote of 30,546 to 23,161.

**Hydro Electric Power Commission of Ontario's Power Canal**—In connection with the construction of the new Chippawa Power Canal, the Hydro Electric Power Commission of Ontario received tenders to Dec. 22 for the erection of the steel superstructure for a bridge to carry the Michigan Central Rd. tracks across the canal at Montrose, Ont.

# The Hydro Electric Power Commission of Ontario's Electric Railway Projects.

The Ontario Premier, Hon. E. C. Drury, received a delegation of representatives of municipalities interested in hydro electric power and railway projects in Toronto, Dec. 12, and in reply to their representations, is reported to have said, among other things: "There is absolutely no friction between Sir Adam Beck and myself. It might not be wise at present to appoint him permanently as chairman of the commission. An arrangement will be made to suit Sir Adam.

The development has been the work of one man and we want it to be so that when that one man is taken from us the great work can go on. In regard to the proposed hydro radial railways, the situation has changed recently. The G.T.R. is about to become part of the Canadian National Railways. Some of the projected electric railways would parallel G.T.R. branches. I want to be assured that there will be no duplication.

The United Farmers of Ontario adopted the following resolution at their meeting in Toronto, Dec. 18:—"We view with alarm the proposed policy of hydro radials, involving expenditure of millions of dollars and intending in many instances the duplication of present railways, and be it resolved that the legislature be requested to move slowly in this matter."

In connection with the building of the projected Toronto-Hamilton Electric Ry., under the Hydro Electric Power Commission of Ontario's plans, a press report of Dec. 13, states that work will be started early this year, and that it is expected all problems in connection with the entrance of this and the Hamilton-Galt-Guelph-Elmira line into Hamilton will be solved by the end of January. It is reported that connection will be made with the G.T.R., either across a bridge or fill at Carroll's Point, or back on the G.T.R. level at the west of the ravine, where a bridge would not be necessary.

The municipalities interested in the proposal to build a line from Hamilton to Galt, Elmira and Guelph, will vote on Jan. 1 on the bylaws to provide their several allotments of the total cost of $6,530,659. Meetings have been held at various centers at which Sir Adam Beck spoke in favor of the bylaws. Considerable opposition to the bylaw developed in Kitchener. Upon the initiative of the Kitchener Light Commissioners, who operate the Kitchener and Waterloo Electric Ry. The objections were: (1) The serious shortage in Niagara power at present, and the likelihood of more serious shortage before the Chippawa development is completed. With the continuous increase in applications for power from all over the Niagara system, it has been estimated that the total load available at the new Chippawa plant will be required for domestic, commercial and manufacturing purposes, without the additional loads required for the proposed hydro radial railways. (2) The amount of $1,053,080, which is required to be guaranteed by Kitchener is altogether too large in view of the fact that Premier Drury has gone on record as saying that no duplication of existing lines will be sanctioned by the Ontario Legislature. At present there is the G.T.R. line from Elmira to Galt, which the proposed hydro radial would parallel, and Kitchener's estimate as above is based on building a new line. Should the present G.T.R. Elmira-Galt line be turned over to the Hydro Power Commission for electrification, the amount, which Kitchener should be asked for should be very considerably less. (3) The Kitchener Light Commissioners also objected to certain paragraphs in the agreement. The proposed extension of hydro radial railways includes operating their cars over the Kitchener and Waterloo St. Ry. tracks from the city limits to the northwesterly part of Waterloo. Paragraph C of the agreement gives the H.E.P.C.O. power to acquire the K. and W.S.R. Under clause E, the City of Kitchener is required to furnish free right of way for the H.E.P.C.O. railway and power lines. T. J. Hannigan, Secretary, Ontario Hydro Electric Radial Railway Association, met the Kitchener Light Commissioners, Dec. 20, and discussed with them points in the agreement to which they had taken objection. It is reported that an understanding was arrived at on the several matters, and that the H.E.P.O.C. will embody in a letter to the Kitchener Light Commissioners an interpretation of the sections of the agreement to which objection is taken, on acceptable lines.

The agreement between the Hydro Electric Power Commission of Ontario, the City of Toronto and a number of municipalities east of the city for the purchase of the Toronto Eastern Ry. from the Canadian National Rys. and its completion at a total estimated cost of $8,360,794, had been approved by bylaws voted on by the ratepayers of the towns of Whitby, Oshawa and Bowmanville, and the townships of Scarboro, Pickering, West Whitby and East Whitby, prior to Nov. 30. Darlington Tp. ratepayers passed a similar bylaw Dec. 18 by 186 to 24 votes. Toronto ratepayers will vote Jan. 1 on a bylaw to raise $4,328,665, as its quota of the cost of entrance and terminals and York Tp. ratepayers will vote on Jan. 17 on a bylaw to raise $381,587 for Toronto's share of the work.

## Proposals for Buying Ontario Electric Railways.

**Dominion Power and Transmission Co.**—A press report of Dec. 22 states with respect to negotiations which have been in progress for some time between the Hydro Electric Power Commission of Ontario and the Dominion Power and Transmission Co., that the price at which the company's common stock is proposed to be acquired is par. The common stock outstanding is reported to be $7,714,500. There is also outstanding $3,681,000 of preferred stock and $8,000,000 of bonds. The company's electric railway properties are: Hamilton St. Ry.; Hamilton and Dundas Electric Ry.; Hamilton Radial Electric Ry.; Hamilton, Grimsby and Beamsville Electric Ry., and Brantford and Hamilton Ry.

**Guelph Radial Ry.**—In connection with the Hydro Electric Power Commission of Ontario's offer to take over the Guelph Radial Ry., free of all encumbrance, as at July 1, 1920, for $150,000, Sir Adam Beck, spoke at a meeting of Guelph ratepayers, Dec. 4. He stated that the idea is to take over the railway and incorporate it with the proposed Hamilton-Galt-Elmira and Guelph line, the bylaws for which are to be voted on on Jan. 1. Guelph City Council, at a meeting Dec. 8, decided to have the ratepayers vote on a bylaw to raise $150,000 for the purpose of putting the G.T.R. with the H.E.P.C.O.'s railways.

**London St. Ry.**—The report of the Hydro Electric Power Commission of engineers as to the value of the London St. Ry.'s, was considered by the London City Council, Dec. 6. The estimated value of the property was stated as $1,356,000, and it was estimated that the city could not pay what the property was worth, and operate it as cheaply as the company is able to do. The council decided not to ask the ratepayers to vote on a purchase bylaw on Jan. 1. A press report states that the company is willing to sell for $1,208,000.

**Port Arthur Civic Ry.-Fort William Electric Ry.**—We are advised that at the request of the Port Arthur and Fort William City Councils, the Hydro Electric Power Commission of Ontario will make a valuation of these two electric railways. Some of the commission's engineers have visited the two cities and collected some of the information necessary, but, we are advised that further details will be required before a report can be completed.

**Sarnia St. Ry.**—The Sarnia City Council passed a resolution, Dec. 14, asking the Hydro Electric Power Commission of Ontario to make a report upon the Sarnia St. Ry. with a view to its acquisition by the city, and we are advised that the commission will have the investigation made. We are further advised that the company had not been approached up to Dec. 20, and no statement can be made as to whether it would sell.

## Proposal to Change the Rule of the Road in British Columbia.

According to a report from Vancouver, legislation will be incruded by the government at British Columbia Legislature's forthcoming session to change the rule of the road from the left to the right hand. The report adds that the Vancouver Board of Trade has passed a resolution asking the government in making the change to provide that the cost attendant upon the change be borne by the people of British Columbia by taxation. George Kidd, General Manager, British Columbia Electric Ry., attended the meeting and explained that the company would not oppose the change, provided that the cost of making it was provided for by the legislature. The estimated cost of altering street cars, switches and overhead equipment, is about $500,000. It was arranged that a delegation from the board of trade should interview the government upon the matter.

A Victoria report states that W. G. Murrin, Assistant General Manager, and T. Goward, Victoria Local Manager, B. C. E.R., met the Prime Minister and other members of the cabinet, Dec. 15, and discussed the matter. The report says it was estimated that the cost of making the necessary changes would be $700,000 (instead of $500,000 as stated at Vancouver), and that it would take a year to do the work. It was arranged for the B.C. Public Works Department's Chief Engineer and the company's engineer to meet and discuss details in order that a report on the whole matter may be prepared.

# The Montreal Tramways Co's Snow Fighting Work.

By Arthur Gaboury, Superintendent, Montreal Tramways Co.

The Montreal Tramways Co.'s snow fighting force comprises three separate and distinct elements, each necessary to a successful, complete unit, viz.:—1. Experience, in every one of the snow fighting staff employes, from the head down to the switchman. 2. Esprit de corps, between every one, from the head down to the switchman, and entire confidence in one another. 3. Machines; the best that science and experience have produced. These three elements combined, and added to a staff of assistants and car men, imbued with the determination to overcome obstacles, is the secret of the successful results obtained in maintaining a car service for the public of our city during snow storms and blizzards.

The snowfall for the past 20 winters has averaged 104 in., but recently we were given 128 in., that is nearly 11 ft., and when it is said that our sweepers were sent out on Nov. 23 that year, and that they were out 65 times after, it will tell you that the lot of a tramway man is not a very pleasant one in the winter. On the other hand, if it is looked upon from the right angle, there is quite a lot of real sport in it, as there is in fighting snow the same ambition to win as there is in playing hockey or lacrosse.

In the early stages of our industry, when street cars were in the experimental stage, and all other conditions somewhat similar, all we could do was to do our best. When beaten by the storm king, the public had to wait or walk, but today the public demands not only that we keep our cars running, but that we run them on time, and in spite of our modern equipment and thorough organization, we are kept on our tip toes all the time and we are taxed to the utmost to meet the ever changing conditions that arise. Every snow storm is different from the previous one; temperature, wind, kind of snow and road conditions are all factors, which never combine in the same way and keep all of us on the qui vive to overcome their different combinations. Early in November, we have cold rain and sleet, and from December until March we have snow; that is to say, from November until the end of March there is not a moment that we can safely say "We are out of danger."

Our snow fighting battery consists of 40 sweepers, 6 ploughs, 12 levellers and 10 other pieces of apparatus of different styles, and most of them are of the very latest type. Our sweepers have two brooms, which rotate rapidly, throwing out the snow from the rails to the right hand side. Each sweeper is equipped with two wings, a large one on the right side and a small one on the left side. The idea of having the large one is to open a drive way for the vehicles, and the small one is to remove the snow from the center of the tracks. Most of our sweepers are of the single truck type, but we have had built in the last few years a number of sweepers of the heavy type, specially designed for the steep hills with which our city has been so generously blessed by nature. Our ploughs are of the railway rotary type and are used on the suburban lines through the open country. During or immediately after a snow storm our tracks are the cleanest part of the road, and all vehicles, and especially autos, immediately take to them, and naturally to the detriment of our car service. We have, in consequence, designed the levellers, or wing cars, to open the road alongside of our tracks wide enough to allow horse vehicles and automobiles a safe roadway clear of our cars. Our sweeper wings push back the snow from our tracks for about 6 ft., and the levellers, which are some of our freight cars equipped with a heavy concave iron wing, pushed out by mechanism, push further back the snow left by our sweepers and leave a clear drive way of some 9 ft. for the traffic.

Next in importance to good equipment comes the need of making the best possible use of it, and long before winter comes, our organization is complete and plans have been carefully thought out and drawn up. The first actual moye towards the success of the winter's campaign, takes place at the beginning of November each year, when a meeting of all men in charge of the machines is called and addressed by the Superintendent. This address takes the form of a friendly heart to heart talk, which further cements the esprit de corps. Special care is taken to impress on each man in charge that he must feel proud to be called to act as lieutenant in this fight, and that he would not have been called if it was not felt that he was the best man that could be got. Suggestions are offered by the men and considered, and after further amicable testimony of confidence, we separate, each feeling that he is an essential spoke in the wheel, and each anxiously waiting the moment that he will be able to show what he can do.

Motormen in charge, and assistant motormen in charge, are appointed for each sweeper and leveller, at the beginning of a winter, and these men keep their own sweepers during the entire winter, subject, of course, to the proper performance of their duty. The idea of this is that if a man is in charge of one special sweeper all the time, he will soon learn its strength and its weakness, and consequently we get better work from both the man and the sweeper than if he worked on one sweeper today and on another one tomorrow. Each man in charge of a sweeper is given a certain one of the routes to cover and he remains on this route each time he goes out, and thus gets to know its difficulties and danger points, and how best to overcome them. From this system, a keen rivalry amongst the different crews has grown up, each claiming that his sweeper is the best and his route kept the cleanest.

On the other hand, the Superintendent and his assistants have prepared the routes and maps to take care of the inside work of the organization. The whole street railway system is divided into territories, which are assigned to the company's four operating divisions; regular routes are laid out for the sweepers, separate and distinct from the ordinary car routes, giving to each division the sweeper routes which can be handled to best advantage, and each piece of apparatus is assigned to a particular route. As far as possible the routes are arranged so that each can be completely covered by its sweeper in from 45 minutes to an hour, and also arranged so as to have one central converging point for three to four sweepers, the idea being that when help is needed, it can be quickly sent by diverting the sweeper from another route when it reaches this spot. Large blue prints of these routes are posted in the Superintendent's office at snow headquarters and at each respective station. Smaller blue prints are also posted in each piece of apparatus, giving the detailed route of that particular sweeper or leveller.

Thus we have the routes specially defined; sweeper designated for each route, a man in charge appointed, who is fully aware of the danger of that route and who understands his sweeper and knows how to handle it, so as to obtain the best results, and when the order is given from snow headquarters to pull out, there is no confusion, no valuable time lost in asking questions. Each man knows where to go and what to do, and he simply goes ahead and does it. The best recording barometers are installed in the home of the man in command, and in the snow headquarters down town, and the nightly consultations begin. "Will we sleep tonight or not?" "Will it snow or not?" are the questions that are asked hundreds of times during the winter, when looking at the barometer before going to bed.

The first storm of the season is always the one awaited with the most anxiety. Sweepers have not been in use for 8 or 9 months, the men are more or less rusty at the first run out, switchmen are not available, and all this, added to the fact that the first storm always comes when least expected, makes the men in charge do a lot of anxious thinking. When it does come we hustle out the 200 odd men to man all the machines and send them all out, even if they are not all absolutely needed, so as to give each machine a real test and see whether they are all ready for thir winter's work. It has always been our ambition to pull out our whole snow battery in less than an hour, and when this is done and the order given in time, it takes quite a blizzard to stop the movement of the cars.

There is little worry as regards men attached to daylight snow storms. The real worry begins between midnight and 5 a.m., and special care has to be taken, so as to be able to locate our men on time if snow begins between these hours. Call boys are held in each station and sent out to get crews as soon as the danger appears, so that all our sweepers are ready to go out when the first grain begins to fall. Our men generally live around the stations, and as they expect to be called at any moment during the winter, it does not take them long to get dressed and on the job, especially as each one is anxious to keep his own line better than the other fellow.

The first trouble in snow storms comes at switches and intersections. The snow blocks the switchpoint, and motormen have trouble in opening the switches, which explains the delays at intersections at the beginning of every storm. We have continually some 80 odd men looking after the hills and switches, brushing off the snow and salting the switches, and attending to the rails on the hills, to keep them soft and clean; but when the storm comes, some 200 additional men are rushed to help them, so as to keep hills and switches in perfect condition.

Sweeper crews are also provided with good lunches when the need arises. If possible, the sweeper is pulled into a convenient siding and the crew given a good meal at a nearby restaurant, or if it is possible to spare the sweeper off the road for half an hour, cans of coffee and good sandwiches are sent around to them.

Our snow headquarters are at our central car barn, Cote St., where special telephones are in operation, and dispatchers are at hand, and here the Superintendent takes up his position at the center of the web, and directs the movement of his forces. All orders are issued from this spot and all news is transmitted there, and I can tell you that there is lots of that. Divisional superintendents and inspectors report every hour. Sweeper and leveller crews also report every trip, giving their sweeper number, the place they are reporting from, the ground they have covered and the condition of their road, and this means some 90 calls an hour. All this information is tabulated in such a way that the assistant superintendent in charge at the desk during the snow storm can tell at a glance, the position of each sweeper or leveller. There is a lot of thinking to do and he must be a man having the whole system engraved in his mind, as the number of telephone messages per minute would not allow time to consult any map. In this way a close check can be kept on the whole system and help can be sent where it is needed and a sweeper transferred from its own line to another, where danger threatens.

Our snow season begins, as I said before, in November and continues right through till St. Patrick's Day. The snow in December is soft and comparatively easy to handle, as the cold is not severe, but in January and February, our snow storms live up to their reputation, and when the thermometer acts in conjunction and drops to 20 or 25 degrees below, then indeed we have our work to do. Storms in these two months often commence one day, continue all that day and night and the next day sometimes, and although the snow fall is scientifically given as 10 or 12 in., this means that the streets are covered with piles of snow 3 or 4 ft. deep.

In storms like these, something more is needed than equipment and plans, and that is men. If your men are of this kind that work only for pay, then the most complete equipment, the most carefully laid out plans, will not pull you through. What you need, and need badly, are men who are real men, men who work not only for their pay, but do work such as cannot be paid for, in mere money. Esprit de corps must permeate your whole staff from Superintendent down to switchman. Men are wanted whose ideals are so well put by Kipling when he says:

"No one shall work for money,
No one shall work for fame, but
Each for the joy of the working."

Men who answer the call, on the jump, who phone headquarters even before they are called, who pull out their sweepers at the beginning of a storm, and return it only when the storm is over, whether it be after 12, or 24, or 36 hours, and who are indignant when offered relief for a few hours of needful rest. With a staff that starts in with the storm and stays right with it, eating sometimes, sleeping at no time, but fighting at all times, you feel your feet on solid ground and are ready to do your best in the battle with nature's storm king. And after the storm, when the last sweeper has been ordered in and your inspectors are phoning in "cars on schedule time," you turn homeward for a much needed clean up, tired and worn out physically, but your mind at ease, and as you see the streets piled up with snow, but with the car track clean and shining in the sun, the cars filled with passengers riding safely and comfortably down to work, you are suddenly filled with a feeling of joy and pride—joy in the doing of a man's work, and pride in the organization of which you are the head.

The foregoing paper was read before the Montreal Publicity Association.

## Sale of Sandwich, Windsor and Amherstburg Ry. to Hydro Electric Power Commission of Ontario.

The voting by ratepayers of Windsor, Ont., and 8 other and adjoining municipalities for bylaws providing for the raising of $2,100,000 by debentures for the construction and operation of an electric railway under the Hydro Electric Power Commission of Ontario, details of which were given in Canadian Railway and Marine World for Dec., 1919, pg. 667, took place Dec. 6, and resulted in the bylaws being carried in all the municipalities except Anderdon Tp. Following are particulars of the votes:

| | For | Against |
|---|---|---|
| Sandwich East Tp. | 214 | 14 |
| Sandwich West Tp. | 123 | 45 |
| Anderdon Tp. | 56 | 133 |
| Ford City Town | 180 | .... |
| Walkerville Town | 198 | 7 |
| Sandwich Town | 179 | 17 |
| Ojibway Town | 8 | .... |
| Amherstburg Town | 216 | 40 |
| Windsor City | 1,100 | 29 |
| Total | 2,254 | 285 |

The figures for Sandwich West Tp. are stated to be incomplete.

In connection with the defeat of the bylaw in Anderdon Tp., a resolution was passed by the Sandwich West Township Council, Dec. 10, guaranteeing that that township would assume its proportion of the $143,536, which Anderdon Tp. was to have provided and other municipalities will probably do the same.

While the bylaws and the agreements to be signed by the municipalities under them provide for the construction of an electric railway, no new line will be built, but the Sandwich, Windsor and Amherstburg Ry. lines will be acquired from the Detroit United Ry. for $1,849,000. It was reported that the company's property would be taken over within sixty days, from the voting, and that very soon thereafter work would be started on certain betterments which are required, and for which there has been considerable agitation. The bylaws provide $251,000 for this purpose.

The bylaws state that the amount estimated to be required for the maintenance of the railway, apart from operating expenses is $134,000 a year. The operating revenue is estimated at $491,000 and the operation and maintenance expenses are estimated at $339,000.

The Sandwich, Windsor and Amherstburg Ry. also owns a light and power plant, which it is also proposed to be acquired by the Hydro Electric Power Commission of Ontario for $190,000. The total price therefore for the railway and the light and power plant, is $2,039,000, which will be paid in the Hydro Commission's 40 year 4½% bonds. The light and power plant is operated entirely in the City of Windsor, and will be handed over to the city's hydro electric commission for operation. A bylaw to raise the $190,000 necessary to pay for this plant will be voted on by Windsor ratepayers on Jan. 1.

## Electric Railway Employes Wages, Working Conditions, Etc.

**British Columbia Electric Ry.**—We have received a copy of the agreement made between the British Columbia Electric Ry., and its employes, under the terms of the award of the board of conciliation's award referred to in Canadian Railway and Marine World for Dec., 1919, pg. 671. The new wage schedule was made retroactive to Sept. 8, 1919, and is to continue in operation until changed; 30 days notice of any desired change to be given by either party. As the wages to be paid differ in some cases from those mentioned in our last issue, the schedule of conductors and motormen, as contained in the agreement, is given as follows:

| City and Suburban Lines: | Per hour |
|---|---|
| First 6 months | 45c |
| Second 6 months | 50c |
| Third 6 months | 53c |
| Thereafter | 56c |

Motormen and conductors in work train service receive 2c an hour in addition to the above rates.

Interurban Lines—District 1, District 4, Saanich Line, 16th St. Yard and Carroll St. Yard:

| Passenger Conductors and Motormen: | Per hour |
|---|---|
| First 6 months | 45c |
| Second 6 months | 51c |
| Third 6 months | 57c |
| Thereafter | 58c |
| Freight Conductors and Motormen: | |
| First 6 months | 47c |
| Second 6 months | 53c |
| Third 6 months | 57c |
| Thereafter | 60c |
| Passenger Brakemen: | |
| First 6 month s | 45c |
| Second 6 months | 59c |
| Third 6 months | 52c |
| Thereafter | 55c |
| Freight brakemen | 53c |
| Trolleymen | 52½c |

Work done on Sundays and holidays to be paid time and a half. Extra men to be guaranteed 6 hours work a day.

**Edmonton Radial Ry.**—As a result of an application by the Street Railwaymen's Union of Edmonton, Alta., the City Commissioners were reported, Dec. 15, to have taken up with the Alberta Government the question of securing for the Edmonton Radial Ry. employes, full pay from the Workmen's Compensation Board for sickness, or injury, caused by accident over which they have no control.

**The Montreal and Southern Counties Ry.** has advanced its conductors and motormen's wages as follows:

| | Suburban lines | Interurban lines |
|---|---|---|
| Conductors and motormen.. | 37c to 46c | 38c to 48c |
| Conductors and motormen.. | 46c | 48c |

The new rates are an advance of from 6c to 9c an hour.

**The Quebec Ry., Light and Power Co.** increased its conductors and motormen's wages on its city division 3c an hour on Nov. 15 and 2c an hour more on Dec. 1, the rates per hour now being:

| | |
|---|---|
| First year | 31c |
| Second year | 34c |
| Third to 6th year | 36c |
| After 7 years | 38c |

**Toronto Ry. and the Don Bridge**—In connection with the building of a bridge on Queen St., Toronto, over the Don River, the Board of Railway Commissioners made an order in 1909, allocating the cost of the bridge among the several parties interested. The amount which the Toronto Ry. was ordered to pay was approximately $110,000; the total cost of the bridge being $748,035. The company appealed, and subsequently paid $80,000 on account under protest. The case went to the Imperial Privy Council, which gave judgment Dec. 18, against the company with costs.

# Canadian Electric Railway Association's Annual Meeting.

The Canadian Electric Railway Association's annual meeting was held in Montreal, Dec. 3 and 4, the President, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway, in the chair.

The Honorary Secretary - Treasurer, Acton Burrows, reported on the association's work during the year, the report being discussed under its different headings.

J. A. Coderre, in charge of Division of Wood Preservation, Forest Products Laboratories of Canada, Interior Department, in co-operation with McGill University, read a paper on the preservation of ties, poles and other timber used by

J. E. Hutcheson.
General Manager, Montreal Tramways Co., who has been elected Honorary President, Canadian Electric Railway Association.

electric railways, which was illustrated by lantern slides.

The resignation of Acton Burrows, as Honorary Secretary - Treasurer, after serving for over 12 years, tendered by him in July, 1919, and at the executive committee's request, held in abeyance until the annual meeting, was discussed, and as Mr. Burrows stated that it was absolutely impossible for him to continue to occupy the position, owing to demands on his time for his business and his private interests, it was accepted with an expression of regret, and he was elected as the association's first honorary member.

Considerable time was spent in discussing a proposed re-organization of the association, so as to widen its activities, and extend its work, and the revision of the constitution and bylaws was referred to the executive committee, which reported at the second day's meeting. It is proposed to appoint a paid secretary-treasurer or manager, to devote his whole time to the association's work.

The following officers were elected for the current year:—

Honorary President, J. E. Hutcheson, General Manager, Montreal Tramways Co.

Honorary Vice President, Acton Burrows, Managing Director, Canadian Railway and Marine World.

President, A. Gaboury, Superintendent, Montreal Tramways Co.

Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

Honorary Secretary - Treasurer (pro tem), A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

Executive Committee—The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway, Light and Power Co.; Lieut.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

## Mainly About Electric Railway People.

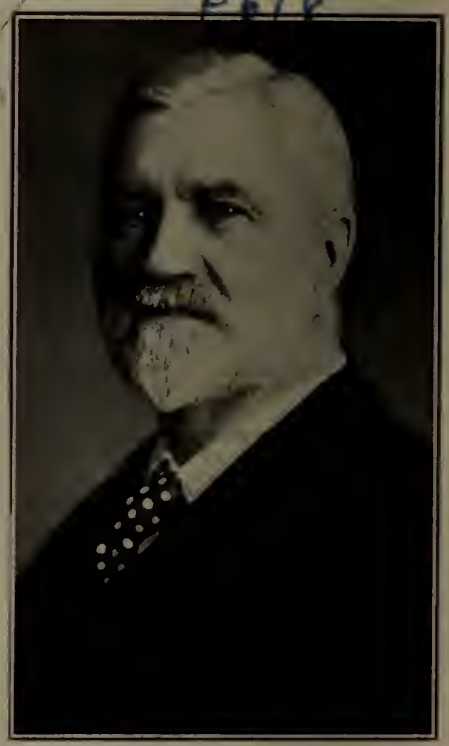
**O. E. Baldwin** is reported to have been appointed Manager, Guelph, Ont., Radial Ry., at a salary of $1,800 a year.

**Sir Adam Beck**, Chairman, Hydro Electric Power Commission of Ontario, was presented with an illuminated Christmas card by the London, Ont., Rotary Club, Dec. 8, on the eve of his departure for England, where Lady Beck is ill.

**Albert Eastman**, who was Vice President, Canadian Electric Railway Association, 1917-1918; President, 1918-1919, and who on Dec. 4 was elected Honorary Secretary-Treasurer, pro tem, was born in Bosanquet Tp., Ont., Aug. 21, 1870. He entered transportation service in 1889, and was to 1891, operator, Michigan Central Rd.; 1892 to 1900, freight and ticket clerk and operator, G.T.R., Detroit, Mich.; 1901, assistant agent, Michigan Central Rd.; 1892 to 1900, to Nov., 1902, Travelling Express and Passenger Agent, Detroit United Ry.; Dec., 1902, to May, 1903, General Express Agent, Utica and Mohawk Valley Ry.; May to Nov., 1903, Division Superintendent, Detroit United Ry.; Nov., 1903, to Nov., 1907, Superintendent of Employment, Public Service Corporation of New Jersey; Nov., 1907, to May, 1910, General Express and Passenger Agent, New York State Railways, Syracuse and Utica, N.Y.; May, 1910, he was appointed General Manager, and in 1914, also Vice President, Windsor, Essex and Lake Shore Rapid Ry., Kingsville, Ont.

**Arthur Gaboury**, who has been elected President, Canadian Electric Railway Association, was born at Montreal, April 6, 1875, and entered Montreal Street Ry. Co.'s service, June 4, 1894, since when he has been, to Oct., 1900, conductor and motorman; Oct. to Nov., 1900, Assistant Inspector; Nov. to Dec., 1900, night clerk, Cote St. Barn; Dec., 1900, to Sept., 1903, day chief clerk, St. Denis; Sept., 1906, to May, 1906, Claims Agent; May, 1906, to 1907, Assistant Superintendent; and from 1907, Superintendent, which position he still occupies in Montreal Tramways Co.'s service. He was, early in 1918, appointed, by the French Government, an officer of the French Academy. He has been a member of the Canadian Electric Railway Association's executive committee for several years, and was its Vice President, 1918-1919.

**G. Gordon Gale, M.E.I.C.**, who has been elected Vice President, Canadian Electric Raliway Association, after having been a member of the executive committee for several years, was born at Quebec, Que., Oct. 9, 1882, and prior to 1907 was Assistant Engineer, Canadian



Acton Burrows,
Managing Director, Acton Burrows Ltd., proprietors, Canadian Railway and Marine World, who has resigned the Honorary Secretary-Treasurership of the Canadian Electric Railway Association, after having been unanimously re-elected for 12 consecutive years, and who has been elected an honorary member of the association and its Honorary Vice President.

Rubber Co.'s electrical plant; 1907 to Nov., 1908, Superintendent of Power, Hull Electric Co.; Nov., 1908 to 1909, acting General Superintendent, same company; 1909 to June, 1914, General Superintendent, same company; June, 1914 to Jan., 1917, General Manager, same company, and from Jan., 1917, Vice President and General Manager, same company.

**J. E. Hutcheson**, who has been elected Honorary President, Canadian Electric Railway Association was born at Brockville, Ont., Sept. 10, 1858, and entered railway service in 1874, in the G.T.R. mechanical department, afterwards serving in that company's ticket, freight and telegraph departments. In 1884 he was appointed a dispatcher, C.P.R., at Ottawa, in 1886 Chief Dispatcher, and in 1888 Trainmaster, which position he held to 1891, when he took charge of the Ottawa Electric Ry. Co.'s operation of which he was Superintendent until July, 1912, when he was appointed General Manager, Montreal Tramways Co. He

has taken an active part in the Canadian Electric Railway Association's work since its inception, having served for several years as a member of the executive committee, and also having been Vice President, and for the year 1908-09, President. He was, for several years, a member of the 43rd. Regiment, retiring with the rank of Major, in 1910, on his return from England, where he acted as Adjutant in charge of the Canadian team at Bisley. He was subsequently appointed an honorary lieutenant colonel. He has been a member of the Militia Department's small arms committee for several years.

H. A. Lemmon has been appointed Secretary, Nova Scotia Tramways & Power Co., vice H. R. Mallison, resigned.

Alexander MacDonald, whose appointment as Traffic Superintendent, Winnipeg Electric Ry. was announced in our last issue, was born Apr. 7, 1872, and entered electric railway service June 5, 1897, since when he has been, to 1900, conductor and motorman; 1900 to 1903, Inspector; 1904 to July, 1912, Superintendent, Hochelaga Division, Montreal St. Ry.; July, 1912 to Nov., 1919, Superintendent, St. Denis Division, Montreal Tramways Co.

Arthur Gaboury,
Superintendent, Montreal Tramways Co., who has been elected President, Canadian Electric Railway Association.

H. C. Nickle, General Superintendent, Kingston, Portsmouth & Cataraqui Electric Ry., who has been elected mayor of Kingston, Ont., by acclamation, was born there, May 26, 1874, and entered transportation service in Sept., 1893, and has been with the K.P.& C.E.R. Co. ever since the introduction of electric cars in Kingston.

F. W. Summer, who was a director of the Moncton, N.B., Tramways, Electricity and Gas Co., from its inception, died recently.

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**The Electrification of the Italian State** Railways is, it is reported, to be carried out by an Italo-United States combine with a capital of 800,000,000 lire (at nominal rates of exchange $150,000,000).

## The Waterloo-Wellington Railway.

The Berlin and Bridgeport Electric Street Ry. Co., began operations between those two Ontario municipalities in 1902, and in 1912, with a view to extending the line northerly, an act was secured from the Ontario Legislature, changing the name to the Berlin and Northern Ry. Co. and authorizing the extension of the line to Fergus and Elora. In 1919, owing to the change of the name of the City of Berlin to Kitchener, the Ontario Legislature authorized the company to change its name to the Waterloo-Wellington Ry. Co. and extended the time within which the additional line of railway could be built for three years.

The company owns 2.75 miles of track serving Kitchener, Bloomingdale and Bridgeport, and operates over about a mile of the Kitchener and Waterloo Ry.

G. Gordon Gale,
Vice President and General Manager, Hull Electric Co., who has been elected Vice President, Canadian Electric Railway Association.

tracks, owned by the City of Kitchener. The company also owns a park and casino, on the Grand River at Bridgeport, where there is also a race track, country club and other features attracting a large summer business. The company operates its line directly, and uses thereon 3 motor cars, double truck and 2 single truck. One of the latter is a one man car and it is found entirely satisfactory. The company also owns 3 steel dump cars for hauling gravel, and 5 additional smaller cars.

We are officially advised that the company has had some negotiations with the City of Kitchener, as to the purchase or taking over and operating the W.-W. line in conjunction with the city's line, but no arrangement has been reached further than the conclusion of an operating agreement for the use of power and the use of trackage in the city for another year.

We are further advised that the company has a project under way for extending its line to Guelph; the city authorities of which are reported as having expressed themselves as being strongly interested in the project. With 26,000 people at the Kitchener end, and about 20,000 people at the Guelph end, and three villages directly on the route, with several more nearby, and a fine, prosperous rural territory and population intervening, an electric railway giving a good service between Kitchener and Guelph, 15 miles, would, it is contended, pay well within a few years. W. H. Breithaupt, Kitchener, Ont., is President.

## Toronto Ratepayers to Vote on Street Railway Questions.

Toronto ratepayers will vote on the following questions at the municipal elections Jan. 1: Are you in favor of:— (1) The operation of the Toronto Ry. System by a commission of three ratepayers, resident in the municipality, to be appointed by the city council and to act without salary? and (2) The city applying for legislation enabling it to borrow money without a further vote of the electors, to acquire the Toronto Ry. Co.'s property, which the city is entitled to take over under the agreement between the city and the company, and for the purposes of the transportation commission, and to make arrangements for the operation thereof?"

Albert Eastman,
Vice President and General Manager, Windsor, Essex and Lake Shore Rapid Railway, who was President, Canadian Electric Railway Association, 1918-1919, and who has been elected its Honorary Secretary-Treasurer, pro tem.

A third bylaw, which will also be voted on an Jan. 1, affirms the expediency of the city taking over certain real and personal property of the Toronto Ry. Co., pursuant to the statutes and to the agreement with the city.

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The Ontario Court of Appeal, on Dec. 8, refused to grant the Toronto and York Radial Ry. leave to appeal against an order of the Ontario Railway and Municipal Board, authorizing Toronto City Council to cross the company's line on Yonge St., with its projected Mount Pleasant civic car line. It is reported that the case will probably go on to the Imperial Privy Council.

# Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—We are officially advised that the company proposes to build early this year an extension of its Fraser Ave. line from King Edward St., on Grenville St., to connect with the tracks now laid on Wilson Road (41st St.), which will enable a direct service to be given between Kerrisdale and Vancouver. Under the agreement between the company and the C.P.R., the work is to be started at once. It is expected to have the new service in operation by May 1. (Nov., 1919, pg. 612).

Calgary Municipal Ry.—Tenders are being asked for 10,000 railway ties and 5 tons of trolley wire for use in reconstruction work on the various lines in Calgary, Alta., during this year. (Dec., 1919, pg. 670).

Chatham, Wallaceburg and Lake Erie Ry.—We are officially advised that although the company has bought rotaries and transformers to be used in connection with the installation of hydro electric power, the machinery has not been installed, and it is not expected to put it in operation before Jan. 15. It is intended to use two 250 rotary convertors at Chatham, Ont., one 250 rotary convertor at Wallace, and one of similar capacity at Cedar Springs. The line is still being operated by the company's own steam plant, and it is intended to use this as an auxiliary in case of failure of the hydro power.

Edmonton Radial Ry.—We are officially advised that the following new track is under construction in Edmonton, Alta.: To exhibition grounds, 3,000 ft.; to Calder suburb, 2,000 ft.

Grand River Ry.—We are officially advised in regard to the company's application to the Board of Railway Commissioners for approval of diversion of the line in Waterloo Tp. and the City of Kitchener, Ont., that the change in location has been brought about by the city advising the company, about a year ago, that on the expiration of the franchise on Oct. 8, 1919, the city intended exercising its rights by taking over the portion of the line on King St., between the city limits and Albert St., 4,700 ft., with a view to building a second track, and paving the street, for the purpose of extending the service on the Kitchener and Waterloo St. Ry. to the city limits. As the line in question serves the company's Kitchener freight terminal, and Waterloo, branching off between the city limits and Albert St., it became necessary for the company to seek a new location to carry on freight and express service properly, and it has been decided to do so on a private right of way. After preparing the plans and submitting them to the city for approval as to street crossings, the Hydro Electric Power Commission of Ontario appeared and opposed the application unless the G.T.R. agreed to grant the commission's proposed electric railway priority rights in the way of diamond crossing, signal plant and operation should the commission decide to cross this same land at some future date. This the G.T.R. refused to agree to, consequently its application for approval of plans was heard by the Board of Railway Commissioners at Hamilton, Oct. 29. The board's decision on the matter has not been announced. (Dec., 1919, pg. 670).

Nipissing Central Ry.—Residents of the part of Quebec lying round the northern end of Lake Timiskaming, are reported to be desirous of securing connection with Liskeard, Cobalt, Haileybury and other Ontario towns. A suggestion has been made that the N.C.R., which has a Dominion charter, and authority to build lines in Quebec, might be extended from Liskeard through the area in question, as far as the Des Quinze River, where a large water power could be developed. The N.C.R. is owned by the Ontario Government. (July, 1918, pg. 308).

Nova Scotia Tramways and Power C.—We are officially advised that the company has in progress the building of a new line on Cogswell St., Halifax, N.S., about 3,000 ft.; double track, which will connect the existing track on Gottingen and Windsor St., the rebuilding of 1,800 ft. double track on the Spring Garden Road, and the rebuilding of 3,400 ft. double track on Agricola St. The company has in contemplation the rebuilding of other track as follows:—Cobourg Road, 2,600 ft. double track; Quinpool Road, 4,100 ft., double track; Windsor St., 1,500 ft., double track; Gottingen St., 4,000 ft., single track.

Ottawa Electric Ry.—A press report states that laying rails for the street railon the new Chaudiere Bridge, Ottawa, is being gone on with, and that as soon as this work is completed the temporary bridge will be removed. The Ottawa City Council was asked by a citizens' deputation, Dec. 6, to favor the building of a loop on Creighton St., and decided to refer the matter to the company for consideration. (Dec., 1919, pg. 670).

Quebec Ry., Light and Power Co.—We are officially advised that the agreement between the company and the Quebec City Council, signed Nov. 25, under the provisions of the bylaw passed by the city council Nov. 15, contains the following provisions as to extensions of lines, etc., to be built in consideration of the increase of fares authorized to be charged: Extension on Dorchester St., about 0.5 mile; extension on Charlesbourg Rd., from Lamontagne St. to Commissioner St., 650 ft. Construction of subway under Canadian Northern Ry. Ry. tracks on Beauport Road instead of placing a railway diamond for level crossing, as previously provided, this extension is completed, leaving the subway only to be built. The company had undertaken previously to extend its line in Belvedere Ward, and by the new agreement the city has agreed to extend the time limit in connection with the building of this extension. The company is expected to commence the extension not later than July 1, and to complete it not later than Nov. 25.

The company has also agreed to pay the same amount as paid last year to proprietors and tenants in connection with the removal of snow thrown on their properties by its sweepers. (Dec., 1919, pg. 670).

Regina Municipal Ry.—A special committee of the Regina, Sask., City Council is reported to have recommended the council to authorize the building of a loop of the spur line now running to the Imperial Oil works plant, and to instal an interlocking plant at the intersection of the Fourth Ave. line with the C.P.R. Bulyea line. (Nov., 1919, pg. 612).

Regina Municipal Ry.—Superintendent Houston is reported to have recommended that the following works be carried out on the Regina, Sask., Municipal Ry., during this year: Building a second track on Fifth Ave., west of Angus St.; building another three track unit to the car barns, east of the existing units, and extend the building south to a line flush with the offices. If a second story is added to the office building, it would then be possible to carry the roof across to the new unit, providing a good sized covered area, the width of the existing units and the length of the present office building, which would also provide partial protection for cars not parked in the storage barns. The existing barns comprise a three-track unit, and a one-track unit in the repair shops.

The Sherbrooke Ry. and Power Co., during 1919, laid 1,800 ft. of additional track from Short St. to Drummond St., and 1,700 ft. of second track on Wellington St. The company is building about 3,000 ft. of new track on Alexander, Galt and Belvedere Sts. (Dec., 1914, pg. 670).

Toronto Civic Ry.—A second track is being built on Bloor St. West, between Quebec Ave. and Runnymede Road; 60 lb. rails being laid on gravel ballast. Other material is being secured and the work will be proceeded with as soon as weather permits. D. W. Harvey is Superintendent and Engineer. (Dec., 1919, pg. 671).

Winnipeg Electric Ry.—The Manitoba Public Utilities Commissioner was asked Dec. 10, to direct the removal of the Winnipeg Electric Ry. tracks to the center of Portage Ave., from the Winnipeg city limits to the intersection of the line of the westerly limit of Douglas St., and for the building of a double track subway. (Oct., 1919, pg. 553).

## London and Port Stanley Railway Betterments, Etc.

The London, Ont., Railway Commission asked the city council recently to have the ratepayers vote on Jan. 1, on a bylaw authorizing the issue of $218,000 of debentures for London and Port Stanley Ry. purposes. A city council committee recommended that the amount be reduced to $200,000, and this amount was inserted in the bylaw which will be voted on Jan. 1.

We are officially advised that the work proposed to be done includes the following:—An extension of car barns at London to provide additional space for repairs and storage, $7,000. Double tracking of line through St. Thomas, which in addition to tracks already laid, will give the railway 2.5 miles of double track through that city, $35,000. A new slip dock at Port Stanley, $8,500. An extension of Port Stanley station, $19,000. Extension of other buildings there $11,000. Installation of track scales in London, $9,500. Shelters and platforms at various concession stops along the line, $9,300. Overhead railway bridge in St. Thomas, $5,700. Electric locomotive and 5 or 6 passenger cars, $95,000.

These expenditures are said to be necessary on account of the business done on the railway being about two and a half times as great as was estimated when the citizens were asked to vote on the electrification of the line in 1913. The commission has spent on various betterments and on additional equipment

the surplus which have accrued from operation during the past four years.

The additional double track work in St. Thomas is necessary to take care of the heavy freight and passenger business into and through that city. The work at Port Stanley includes some additions to the station, the erection of a freight shed, and the provision of a closed terminal at the beach station, to properly control and handle the crowds that are carried to and from that resort during the summer. It is proposed to extend the other buildings at Port Stanley in order to accommodate the patrons of the various concessions there.

A press report states that the new station near Talbot St., St. Thomas, is nearing completion. It is of brick, with tile roof, and is thoroughly modern in all its appointments.

## Appraisal of Winnipeg Electric Railway's Properties.

It was reported in Winnipeg, Dec. 2, that a copy of the appraisal of the Winnipeg Electric Ry.'s property and made at the instance of the Manitoba Public Utilities Commissioner in connection with the company's application for an order for the fixing of passenger fare permanently at 6c, was delivered to the city officials Mar. 30. The reports as to the figures contained in the document are to the effect that the present value of the company's holdings is estimated as $12,934,293.85, and that it would cost $15,724,501.16 to replace the plant. This valuation, it is pointed out, represents a part only of the company's property, and does not include rolling stock, land, gas property, the Winnipeg River Power property, and intangible assets. Press comments on the figures further set out that the J. G. White Co.'s valuation of 1915 put the valuation of the company's holdings at $23,995,860, and that it would then have cost $27,182,322 to replace them. The company's rolling stock, which is not included in present valuation, was valued at $1,500,000 in the J. G. White Co.'s report, while the Public Utilities Commissioner, about a year ago, valued the company's gas plant at $2,200,000 for rate making purposes.

At a meeting of the city council, Dec. 9, it was resolved that the City Solicitor, after using the services of such city officials as may be found suitable, and after consultation with the chairman of the transportation committee, appoint such expert assistance as he may require in connection with the valuation of street railway properties, the finance committee to provide sufficient funds for such purpose. The mayor informed the council that the idea was to show the actual cash put into the concern. There was a great discrepency between the company's appraisal and the appraisal made by the Public Utilities Commission's experts, and the city wanted its experts to check over the different valuations.

The Toronto Board of Police Commissioners decided, Dec. 16, to make an allowance of 25c a day to all members of the Toronto police force who, during the period between the issues of the new police badges, which the Toronto Ry. refused to recognize, and the date of the issue of the present T.R.C. badges, paid their own street car fares. The amount involved is estimated at $600.

# Increases in Electric Railway Freight and Passenger Rates.

**British Columbia Electric Ry.** — The freight and passenger tariffs filed with the Board of Railway Commissioners as given fully in Canadian Railway and Marine World for Dec., 1919, are, we are officially advised, the same as were in force under provincial jurisdiction, on city lines in Vancouver, New Westminster and Victoria and the interurban lines.

The Board of Railway Commissioners considered the question of its jurisdiction over the B.C.E.R. at a sitting in Vancouver in Nov., 1919, reserving judgment, which had not been delivered up to Dec. 26.

Burnaby Municipality's Solicitor was in Victoria, Dec. 16, to discuss the matter with the B.C. Government. He is reported to have said:—"The point to be urged against the Board of Railway Commissioners' jurisdiction is that while the Dominion Parliament has the right to declare any railway system to be for the general advantage of Canada, and as such under its control, those railways must be specifically named, and parliament has no power to insert an omnibus clause bringing lines under control without specifying them."

The British Columbia Premier is reported to have said in connection with the matter on Dec. 20:—"I am not, of course, in a position to judge of the legal side of that question, but the Attorney General is taking it up with the Board of Railway Commissioners, and the province's side of the case will be thoroughly investigated. It is not possible to state just now what the final outcome will be, but the Attorney General will not neglect any phase of this question."

**Grand River Ry.**—The Board of Railway Commissioners passed order 29,145, Dec. 12, 1919, as follows:—Re Grand River Ry. application, for authority to file tariffs providing for a general advance in tolls for carriage of passengers for its lines, in the same manner and to the same extent as has been permitted by the board in the case of steam railways. It is ordered that the company be authorized to increase its standard maximum fare for the carriage of passengers to 2.875c a mile, such increased fare not to become effective until the company has complied with the requirements of the Railway Act, sec. 334.

**London St. Ry.**—London, Ont., ratepayers will vote Jan. 1 on a proposal to reduce the number of tickets sold for 25c by one. At present 7 tickets are available all day, and 9 limited tickets are sold for 25c.

**Quebec Ry., Light and Power Co.**—We are officially advised that the Quebec City Council passed a bylaw, Nov. 15, authorizing an increase in fares on the company's lines and a new contract was signed Nov. 25, the new rates becoming effective Nov. 20, remain in force for 5 years. The new tariff is as follows:—Cash fare, from 5 a.m. until midnight, 7c; cash fare after midnight, 10c; without privilege of transfer. Seventeen tickets to be sold for $1, and 4 tickets for 25c. Six "limited employes" tickets, heretofore known as workmen's tickets, to be sold for 25c, good between 6 and 8 a.m., and 5 and 7 p.m., daily except Sundays; all employes in factories, offices, stores, etc., will be entitled to use this style of ticket. School children 16 years and under, 10 tickets for 25c. Children, carried in arms with parents, and who do not occupy a seat, travel free; children under 7 years, 3c cash fare or 10 tickets for 25c. These rates replace those which had been in effect from June 22, 1918, as follows:—Cash fare, 5c; 21 tickets for $1. Seven workmen's tickets for 25c, good between 6 and 8 a.m., and 5 and 7 p.m., daily except Sundays; school children's tickets, 10 for 25c, good for children attending school, 14 years of age and under. Children carried in arms with parents and who do not occupy a seat, travel free; children 7 years of age and under, 3c cash fare, or 10 tickets for 25c.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry. and subsidary companies—**

| | Sept.,1919 | Sept.,1918 | 3 mons.to Sept. 30, 1919 | 3 mons.to Sept. 30, 1918 |
|---|---|---|---|---|
| Gross | $684,946 | $575,476 | $1,994,206 | $1,533,783 |
| Expenses | 503,135 | 444,928 | 1,496,478 | 1,295,634 |
| Net | 181,811 | 130,548 | 497,728 | 238,149 |

The net for Sept., 1919 includes $23,612, being 1c out of each 6c fare collected in Vancouver, and held in suspense under the terms of the Public Utilities Act, pending the commissioner's decision.

**Calgary Municipal Ry.**—Earnings, expenditure, etc., for Nov., 1919:

| | |
|---|---|
| Fares | $74,985 |
| Advertising | 1,256 |
| Total revenue | $74,231 |
| Expenditures | $64,908 |
| Profit | $11,328 |

Statement for the 11 months ended Nov. 30, 1919, is as follows:

| | |
|---|---|
| Revenue | $736,559 |
| Expenditures | 713,182 |
| Profit | $ 23,377 |

**Edmonton Radial Railway—**

| | Oct., 1919 | Nov., 1919 |
|---|---|---|
| Total revenue | $ 59,294.52 | $ 65,733.16 |
| Passengers carried | 1,006,012 | 1,121,492 |

**Montreal Tramways Co.**—At a meeting of driectors, Dec. 22, to consider the question of dividends on the common stock, which were deferred in 1918, it was decided to pay a quarterly dividend of 2½% at the rate of 10% per annum, for the year ended June 30, 1918, on the paid up capital stock of the company to shareholders on record Dec. 29, 1919. Financial circles takes this as an indication that the company will continue to pay regular dividends, and that a meeting of the directors will be held early in the new year to consider paying arrears.

**Regina Municipal Railway—**

| | |
|---|---|
| Passenger receipts Nov., 1919 | $29,503.75 |
| Number of passengers carried | 610,444 |

**Toronto Ry., Toronto & York Radial Ry., and allied companies—**

| | Sept.,1919 | Sept.,1918 | 9 mons.to Sept. 30, 1919 | 9 mons.to Sept. 30, 1918 |
|---|---|---|---|---|
| Gross | $1,124,159 | $1,119,925 | $9,318,458 | $9,596,597 |
| Expenses | 726,221 | 565,069 | 5,786,231 | 5,201,953 |
| Net | 397,938 | 554,856 | 3,532,227 | 4,394,644 |

**Winnipeg Electric Ry., and allied companies—**

| | Sept.,1919 | Sept.,1918 | 9 mons.to Sept. 30, 1919 | 9 mons.to Sept. 30, 1918 |
|---|---|---|---|---|
| Gross | $381,248 | $285,670 | $2,947,060 | $2,674,137 |
| Expenses | 316,037 | 207,477 | 2,346,188 | 2,028,450 |
| Net | 65,211 | 78,193 | 600,872 | 645,687 |

The surplus for October, after allowing for fixed charges, was $44,661.57.

# Electric Railway Notes.

The Hydro Electric Power Commission of Ontario has ordered 2 trucks for electric locomotives from Canadian Car and Foundry Co.

Sudbury-Copper Cliff Suburban Electric Ry. has received a combination snow plough and sweeper from Ottawa Car Manufacturing Co.

The British Columbia Electric Ry. office staff has its annual dinner at Vancouver, Dec. 6; George Kidd, General Manager in the chair.

Three Rivers Traction Co., Three Rivers, Que., has ordered 2 one man, near side cars, making 4 now on order, from Ottawa Car Manufacturing Co.

A. L. Farquharson, Manager, Fort William Electric Ry., left Fort William, Ont., Dec. 7 to secure options on new and second hand cars to replace those destroyed in the recent fire.

The Ottawa Electric Ry. will, it is said, in future be the plaintiff in actions due to collisions between automobiles and street cars, where they are due to careless automobile driving.

The Brantford, Ont., City Council will consider the regulation of the speed at which Brantford and Hamilton Ry., and Lake Erie and Northern Ry. cars shall be operated within the city limits.

The Regina, Sask., Municipal Ry., management has under consideration the purchase of some motors from Winnipeg, which it is proposed to instal on the 6 old cars, which were bought in England, to speed them up.

The Niagara, St. Catharines & Toronto Ry.'s car barn at Niagara Falls, Ont., was destroyed by fire Dec. 10, together with 2 of the latest type of cars and a snow plough; the damage being estimated at $40,000.

The Winnipeg City Council on Dec. 8 authorized the preparation of a bylaw creating a standing committee on transportation to deal with all questions of transportation, and to consist of 5 members.

The Regina, Sask., Municipal Ry., is considering the question of the operation of cars on Sundays to a later hour at night than at present. Under the present schedule, all cars are in the barns a little after 10 p.m.

The Calgary, Alta., Municipal Ry., is reported to be buying 4 cars, and to be considering the buying of 2 additional cars. Superintendent T. H. McCauley, who was in the east recently, received telegraphic instructions as to the matter Dec. 5.

The Moncton Tramways, Electricity and Gas Co.'s car barn and machine shop, at Moncton, N.B., was burned Dec. 25; considerable machinery, one car, and a sweeper being destroyed. The watchman died from injuries received during the fire.

The Regina, Sask., Street Railway Department has begun the issue of a twice a month pamphlet, giving information and items of interest in connection with the street railway. It is entitled the Regina Municipal Railway Headlights, and is issued free to the public.

The Toronto Suburban Ry.'s bylaw authorizing W. J. Radford, Assistant Manager, to prepare and issue passenger tariffs, and F. Butcher, Freight Superintendent, to prepare and issue freight tariffs, was approved by the Board of Railway Commissioners by order 29,124, Dec. 6.

The Imperial Privy Council on Dec. 5, reserved judgment on the Toronto Ry.'s appeal against the City of Toronto regarding the removal of snow. A second appeal case, in which the same parties were involved, having to do with penalties for alleged inadequate service, was also heard.

County Judge Gunn, Ottawa, is Chairman of a board of conciliation which commenced its sittings in Toronto, Dec. 8, to interpret certain parts of the award of Sept. 23, 1919, respecting the Toronto Electric Co. and its employes. W. H. Moore is the company's representative, and F. Bancroft represents the men.

The Nova Scotia Tramways & Power Co.'s 24 cars ordered for its Halifax, N.S., electric railway as mentioned in our last issue, are of the standard Birney safety type, arranged for double end operation. They were ordered from American Car Co., St. Louis, Mo., for delivery during Dec., 1919.

The Montreal Tramways Co. is applying to the Quebec Legislature for an act determining its rights and obligations with regard to its contribution to the building and maintenance of sewers in Montreal and other municipalities to which its lines extend; to amend laws, relating thereto, and for other purposes.

The Hamilton, Ont., City Council's street railway committee is reported to have abandoned its idea of appealing to the Ontario Railway and Municipal Board for an order to compel the Hamilton St. Ry. to give an improved service pending the outcome of the negotiations between the Hydro Electric Power Commission of Ontario and the Dominion Power and Transmission Co., for the purchase of the latter's interests.

The Commissioner of Public Safety of St. John, N.B., is reported to have called the attention of the New Brunswick Power Co. to the frequent overloading of street cars in contravention of the law. The company is stated to have recently put on 6 extra cars on two routes, in order to lessen the overcrowding. During the rush hours and on rainy days the company's conductors could not keep people from getting on cars, even when they were already well filled.

The Winnipeg Electric Ry. put in effect on Dec. 7, a general rerouting of cars on a number of its lines, aiming, in so doing, as the more even distribution of car service, and permitting a greater number of extra cars in sections of the city, where traffic is heaviest during rush hours. A protest against this rerouting was made at a meeting of the city council, Dec. 8, when it was intimated that the council would determine whether or not the company is obliged to consult the city when making changes in routing.

The Winnipeg City Council and the Winnipeg Electric Ry. are reported as having arrived at an understanding in reference to taxation matters. The city claims approximately $500,000 for unpaid taxes from and including 1916. The company alleged overcharges, particularly in connection with street paving work. Representatives of the city finance department met A. W. McLimont, Vice President and General Manager, at the end of November and subsequently with the result that it was reported, Dec. 9, that an arrangement had been made.

The hearing of the New Brunswick Power Co.'s appeal in connection with the fixing of the original cost of the company's investment in St. John, N.B., for street railway purposes, has been concluded before the New Brunswick Court of Appeal and judgment reserved. The special commission appointed by the N.B. Legislature in 1918, after an investigation, fixed the value of the investment at $2,800,000 on which a return of 7% was to be secured. In the appeal, the St. John City Council asked for a reduction to below $2,000,000, while the company argued that it should be increased to about $5,000,000.

The Sandwich, Windsor & Amherstburg Ry.'s Superintendent suspended 4 conductors and motormen, in connection with their alleged refusal to handle a broken live trolley wire in Nov., 1919. The matter was referred to the Ontario Railway and Municipal Board, which sent the following telegram to the company's General Manager: "Ontario Railway and Municipal Board, on report of inspector, finds fault in car house foremen not acting promptly when telephoned, and finds motormen and conductors in fault in not telephoning between 9 and 11.30 o'clock, and orders reinstatement forthwith of 4 suspended employes and payment to them of half pay for period of suspension."

## Electric Railway Track Laid in 1919.

Following is a preliminary statement showing new. electric railway track laid during 1919:—

| | Miles | Miles |
|---|---|---|
| Brantford Municipal Ry.— | | |
| Colborne St. to St. Paul Ave..... | 1.95 | |
| T.,H.& B. tracks to G.T.R. tracks | .40 | 2.35 |
| Montreal Tramways Co.— | | |
| Cote de Neiges Cemetery gate to Queen Mary Road..... | 0.54 | |
| Monk Boulevard, Church to Allard ..... | 1.05 | |
| Iberville, Masson to Belanger..... | 1.15 | 2.74 |
| Ottawa Electric Ry.— | | |
| Raymond St. to Powell Ave..... | 0.20 | |
| Three other extensions ..... | 0.20 | 0.40 |
| Quebec Ry., Light and Power Co.— | | |
| Beauport Road, C.N.R., to city limits, going west..... | 1.15 | |
| C.N.R. to 3rd Ave., along 10th St., going west ..... | 0.50 | 1.65 |
| Sherbrooke Ry. and Power Co.— | | |
| Short St. to Drummond St..... | | 0.34 |
| Total ..... | | 7.48 |

The Nova Scotia Tramways and Power Co. is rebuilding about 4 miles of double track, which is being relaid with concrete filler in pavement.

The Sherbrooke Ry. and Power Co. laid 1,700 ft. of second track on its Wellington St. line.

The Wellington-Waterloo Ry., laid a turning Y in Bridgeport, Ont., about 320 ft. of track.

**London and Lake Erie Ry. and Transportation Co.'s Liquidation**—St. Thomas, Ont., ratepayers decided, Dec. 1, by a vote of 475 to 37 to authorize the issue of $25,000 of debentures to buy the company's car barns, power house and land in the vicinity of the Michigan Central Rd., and the overhead wiring on Talbot St. Negotiations are reported to be in progress for the sale of the company's property on Horton St., London, the buildings on which were used as a freight station and the ticket office by the railway before its abandonment.

# Marine Department

## Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

**Orders for Steamships**—The table on page 39 of this issue containing particulars on orders for steel cargo steamships for Canadian Government Merchant Marine Ltd., gives full particulars of 53 ships ordered by the Marine Department, and partial particulars of 3 others, 56 in all. We were officially advised Dec. 17, that the contracts for the 3 ships of which only partial particulars are given, viz.: 1 from Midland Shipbuilding Co. of approximately 3,950 d.w. tons, and 2 from Wallace Shipyards, Ltd., of approximately 8,350 d.w. tons each, had not then been signed. If not signed at the time of writing this (Dec. 26), they doubtless will be in the near future. Although no official information was obtainable up to Dec. 19, Canadian Railway and Marine World is aware that further orders have been decided on which will bring up the fleet to at least 60 ships. These additional orders include 2 'tween deck ocean going steel cargo steamships of approximately 3,950 d.w. tons each, to be built by Collingwood Shipbuilding Co., one at Collingwood, Ont., and the other at Kingston, Ont. It is said that the Nova Scotia Steel & Coal Co., New Glasgow, N.S., has another order for a steamship of approximately 2,800 d.w. tons, similar to the first two orders placed with it, and that the Port Arthur Shipbuilding Co. has an order for another steamship of approximately 4,300 d.w. tons, in addition to the orders placed with it previously.

**Oil Fuel**—Referring to the question of equipping the 4 steel cargo steamships, of approximately 8,350 d.w. tons each, which were ordered by the Marine Department from Canadian Vickers Ltd., on Sept. 30, to use fuel oil instead of coal, Canadian Railway and Marine World was advised Dec. 9, that the department had not come to any decision on the question in regard to any of the ships being built under its orders.

**Launchings of Steamships**—Since Canadian Railway and Marine World for December was issued we have been advised of the following launchings:

S.s. Canadian Importer; Marine Department contract 34; builder's yard no. 11; approximately 8,100 d.w. tons; J. Coughlan & Sons, Vancouver, B.C.; Dec. 6, 1919.

S.s. Canadian Beaver; Marine Department contract 31; builder's yard no. 15; approximately 3,750 d.w. tons; Collingwood Shipbuilding Co., Kingston, Ont.; Dec. 10.

S.s. Canadian Farmer; Marine Department contract 46; builder's yard no. 65; approximately 3,950 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont., Dec. 27, 1919.

S.s. Canadian Raider; Marine Department contract 7; builder's yard no. 102; approximately 5,100 d.w. tons; Wallace Shipyards Ltd., North Vancouver, B.C.; Dec. 11.

**Delivery of Steamships**—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following have been delivered to the Marine Department by the builders, and were transferred to Canadian Government Merchant Marine Ltd., for operation on the dates mentioned.

Nov. 18, 1919, s.s. Canadian Sower; Marine Department contract 20a; builder's yard no. 42; approximately 3,400 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont. She was loaded with general cargo at Montreal for St. John's, Nfld.

Nov. 22, 1919, s.s. Canadian Navigator; Marine Department contract 23; builder's yard no. 73; approximately 4,300 d.w. tons; Canadian Vickers Ltd., Montreal. She was loaded with general cargo at Montreal for London, Eng.

Dec. 2, 1919, s.s. Canadian Settler; Marine Department contract 13; builder's yard no. 5; approximately 5,100 d.w. tons; Tidewater Shipbuilders Ltd., Three Rivers, Que. She was loaded with general cargo at Montreal for St. John's, Nfld.

Dec. 6, 1919, s.s. Canadian Spinner; Marine Department contract 27; builder's yard no. 71; approximately 8,350 d.w. tons; Canadian Vickers Ltd., Montreal. She was loaded with general cargo at Quebec for South America.

Dec. 20, 1919, s.s. Canadian Sealer; Marine Department contract 40; builder's yard no. 5; approximately 2,800 d.w. tons; Nova Scotia Steel & Coal Co., New Glasgow, N.S. She has since been reported to be icebound at Pictou, N.S.

Three steamships are now at Quebec ready to be delivered to Canadian Government Merchant Marine Ltd., viz.: Canadian Planter, approximately 8,100 d.w. tons, built by Canadian Vickers Ltd.; Canadian Rancher, approximately 5,100 d.w. tons, built by Tidewater Shipbuilders Ltd.; and Canadian Trapper, approximately 5,100 d.w. tons, built Davie Shipbuilding & Repairing Co. In view of the unusual ice conditions in the St. Lawrence, they will not be put in service until next spring, and will be moored at Quebec for the winter.

**Officers of Steamships**—The following officers have been appointed by Canadian Government Merchant Marine Ltd. The first column contains the names of the ships, the second those of the captains and the third those of the chief engineers:

| | | |
|---|---|---|
| Canadian Importer | A. O. Cooper | ..... |
| Canadian Planter | A. L. Starratt | J. Young |
| Canadian Rancher | W. Bradley | ..... |
| Canadian Recruit | C. J. Murphy | W. Byers |
| Canadian Sower | ..... | L. Cunningham |
| Canadian Volunteer | E. C. Sears | J. Campbell |
| Canadian Voyageur | J. D. MacKenzie | ..... |
| Canadian Warrior | C. R. Bissett | ..... |

**Steamship Services**—The Vancouver Board of Trade is reported to have received word that as soon as possible, Canadian Government Merchant Marine Ltd., will establish a steamship service between Montreal, Halifax and British Columbia ports, via the Panama Canal.

The Canadian Merchant Service Guild has sent a petition to the Minister of Marine, asking that a government passenger steamship service be established between Vancouver, Victoria and San Francisco. It is pointed out that there was at one time an indifferent service given between these points by vessels under the U.S. flag, but that this was withdrawn some time ago.

The s.s. J. A. McKee has been chartered to the Newfoundland Government, for a short time, to carry coal from Cape Breton to Newfoundland, where there is a serious shortage. She is screw driven by engine of 204 n.h.p., and is 2,158 tons gross, 1,375 tons register.

The s.s. Canadian Recruit, 3,964 d.w. tons, built by Collingwood Shipbuilding Co., and delivered to Canadian Government Merchant Marine Ltd., June 7, 1919, left Montreal, Dec. 8, with a general cargo for Kingston, Jamaica, and Havana, Cuba. She was to call at Sydney, N.S., to fill her bunkers, and was to take a return cargo of sugar to St. John, N.B. She passed Crane Island Dec. 16, encountered serious ice trouble, lost her rudder, and went ashore on Vache Reef, near the mouth of the Saguenay, Dec. 20. The officers and crew were landed ashore, and the owners have notified the underwriters that the ship has been abandoned.

The s.s. Canadian Spinner, approximately 8,350 d.w. tons, built by Canadian Vickers Ltd., and delivered to Canadian Government Merchant Marine Ltd., Dec. 6, left Quebec Dec. 16, with a general cargo, via Halifax, for Rio de Janeiro, Santos, and Buenos Aires. She passed Red Island Dec. 18, and at the time of writing, Dec. 27, was stuck in the ice about 8 miles off Metane, with her rudder post being reported as broken. The Dominion Government ice breaking s.s. Lady Grey made two attempts to go to her rescue, leaving Quebec Dec. 24 and 25, but put back each time; the captain declaring it impossible to proceed owing to ice conditions.

S.s. Canadian Trapper—An action has been entered at Quebec by Tidewater Shipbuilders Ltd., Three Rivers, Que., against the Davie Shipbuilding and Repairing Co., Lauzon, Que., for $180,600, claimed to be due for installation of machinery by plaintiffs in the s.s. Canadian Trapper's hull, built by defendants.

The s.s. Volunteer, approximately 4,530 d.w. tons, built by Wallace Shipyards Ltd., and delivered to Canadian Government Merchant Marine Ltd., June 19, 1919, left Montreal Dec. 6, with a general cargo for London, Eng., and arrived at Quebec, Dec. 9, having struck three times near Cap la Roche, causing leaks in the bilges. Owing to the lateness of the season she will be kept at Quebec until the spring.

Canadian Vickers Ltd., Montreal, delivered the s.s. Canadian Navigator; Marine Department contract 23; builder's yard no. 73; approximately 4,300 d.w. tons; to the Marine Department, Dec. 2, 1919. She was immediately transferred to Canadian Government Merchant Marine Ltd., and was loaded at Montreal with general cargo for London, Eng.

The company also delivered the s.s. Canadian Spinner; Marine Department contract 27; builder's yard no. 71; approximately 8,350 d.w. tons; to the Marine Department, Dec. 6, 1919. She was immediately transferred to Canadian Government Merchant Marine Ltd., and loaded at Quebec with general cargo for South America.

Collingwood Shipbuilding Co., which has contracts from the Marine Department for 2 steel cargo steamships, of approximately 3,950 d.w. tons each, launched one of them, Canadian Farmer,

Marine Department contract 46; builder's yard no. 65; at its Collingwood, Ont., yard, Dec. 27, 1919.

The other ship, Canadian Observer, Marine Department contract 47; builder's yard no. 66; is expected to be launched at Collingwood in February.

The company launched at its Kingston, Ont., yard, Dec. 10, the s.s. Canadian Beaver; Marine Department contract 31; builder's yard no. 15; approximately 3,750 d.w. tons.

The company, during December, received orders from the Marine Department, for 2 more steel cargo steamships of approximately 3,950 d.w. tons each, one to be built at the Kingston plant and one at the Collingwood plant.

J. Coughlan and Sons, Vancouver, B.C., have, as stated previously in Canadian Railway and Marine World, contracts from the Marine Department for 4 steel cargo steamships of approximately 8,100 d.w. tons each. The first of these, Canadian Importer, Marine Department contract 34; builders yard no. 11; was launched Dec. 6, 1919, the christening ceremony being performed by Mrs. R. C. Cooper, wife of the Colonel of the 7th Battalion, who carried a bouquet showing the insignia, $\frac{C}{7}$, of the battalion. The steamship, when launched, carried the Canadian ensign, the Canadian Government Merchant Marine flag, and the Prince of Wales' honor flag, on the bow.

The second steamship, Canadian Exporter, was expected to be launched about Dec. 30, 1919. Approximate launching dates for the other two are, Canadian Inventor, Jan. 30; Canadian Prospector, Feb. 28.

Nova Scotia Steel and Coal Co., New Glasgow, N.S., delivered the s.s. Canadian Sealer; Marine Department contract 40; builder's yard no. 5; approximately 2,800 d.w. tons, to the Marine Department, Dec. 20, 1919.

The s.s. Canadian Miner, a sister ship to Canadian Sealer, is expected to be ready for launching by the end of January, but will probably be kept on the ways till the latter part of February, and should be delivered early in April if the river is free of ice.

**Port Arthur Shipbuilding Co.**, Port Arthur, Ont., delivered the s.s Canadian Sower, Marine Department contract 20a; builder's yard no. 42; approximately 3,400 d.w. tons; to the Marine Department, Nov. 18. She was immediately transferred to Canadian Government Merchant Marine Ltd., and was loaded at Montreal with general cargo for St. John's, Nfld. This was the fourth ship delivered to the Marine Department in 1919 by this company, the others being Canadian Trader, July 18; Canadian Sailor, Aug. 7, and Canadian Adventurer, Oct. 29; full particulars of which are given in the table on page 39.

The company is also building for the Marine Department, 2 steel cargo steamships of approximately 4,300 d.w. tons each, Canadian Runner and Canadian Carrier; the keels of which were laid Aug. 29, 1919. They will be launched early in the spring and should be ready to sail in June or July for Buffalo, N.Y., where they will be cut in two, so as to go through the canals to Montreal. After they are rejoined at Montreal their trial trips will be run and delivery made to the Marine Department.

**Tidewater Shipbuilders Ltd**, Three Rivers, Que., delivered the s.s. Canadian Settler; Marine Department contract 13; builder's yard no. 5; approximately 5,100 d.w. tons; to the Marine Department, Dec. 2, 1919. She was immediately transferred to Canadian Government Merchant Marine Ltd., and loaded at Montreal with general cargo for St. John's, Nfld.

The second ship, Canadian Rancher, Marine Department contract 14; builder's yard no. 6; left Three Rivers in the second week of December for Quebec to have some final work done and to be delivered to the Marine Department. The keels for the two other ships this company is building, Canadian Fisher and Canadian Forester, were laid Sept. 20 and Nov. 1, 1919, respectively.

## Details of the Different Types of Steamships for Canadian Government Merchant Marine Ltd.

The following are comparative details of the seven different types of steamships being built for Canadian Government Merchant Marine Ltd.:

| | 2,800 ton. | 3,400 ton. | 3,750 ton. | 4,300 ton. | 5,100 ton. | 8,100 ton. | 10,500 ton |
|---|---|---|---|---|---|---|---|
| Length, overall | 280 ft. | 260 ft. | 260½ ft. | 333 ft. 7 ins. | 344 ft. | 413 ft. 1 in. | 445 ft. |
| Length, bet. perpendiculars | 270 ft. | 251 ft. | 251 ft. | 320 ft. | 331 ft. | 400 ft. | 430 ft. |
| Breadth, moulded | 38 ft. | 43¼ ft. | 43½ ft. | 44 ft. | 46½ ft. | 52 ft. | 56 ft. |
| Depth, moulded | 20½ ft. | 23 ft. | 26 ft. | 25 ft. | 25½ ft. | 31 ft. | 38 ft. |
| Draft, loaded | 17¼ ft. | 20 ft. | 22 ft. 2 in. | 21 ft. 2 ins. | 21 ft. 8 ins. | 25 ft. 1 in. | 29 ft. |
| Type | S.d., p.b. & f'c's'le | S.d., p.b. & f'c's'le | Lake, s.d., p.b. & f'c's'le | S.d., p.b. & f'c's'le | S.d., p.b. & f'c's'le | 2d., p.b. & f'c's'le | 3d., p. & f'c's'le |
| Engines—Type | Tri-compound | Triple expansion | Triple expansion | Triple expansion | Triple expansion | Triple expansion | Triple expansion |
| Cylinders, diar. | 17½ x 28¾ x 47 ins. | 20½ x 34 x 56 ins. | 18 x 30 x 50 ins. | 25 x 41 x 67 ins. | 25 x 41 x 68 ins. | 27 x 44 x 73 ins. | 29½ x 50 x 80 ins. |
| Stroke | 33 ins. | 40 ins. | 36 ins. | 45 ins. | 45 ins. | 48 ins. | 54 ins. |
| Ind. h.p. | 875 | 1,300 | 1,200 | 1,800 | 2,500 | 3,000 | 4,000 |
| Boilers—Type | Single ended | Single ended | Single ended | Single ended | Single ended | Single ended. | Single ended |
| No. | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| Diar. and length | 12¾ x 10¾ ft. | 15 x 11 ft. | 14 x 10¾ ft. | 15½ x 11½ ft. | 14 x 11½ ft. | 15½ x 11½ ft. | 15½ x 11¾ ft. |
| Working pressure | 185 lbs. | 190 lbs. | 180 lbs. | 180 lbs. | 180 lbs. | 180 lbs. | 180 lbs. |
| Furnaces—No. | 2 | 6 | 6 | 6 | 9 | 9 | 12 |
| Grate surface | 80 sq. ft. | 135 sq. ft. | 100 sq. ft. | 132 sq. ft. | 156 sq. ft. | 198 sq. ft. | 270 |
| Heating surface | 3,000 sq. ft. | 4,670 sq. ft. | 3,900 sq. ft. | 5,162 sq. ft. | 7,275 sq. ft. | 7,743 sq. ft. | 10,500 sq. ft. |
| Speed | 8½ knots | 9 knots | 9 knots | 11 knots | 11 knots | 11 knots | 12 knots |
| Classification | Lloyd's | Lloyd's | Brit. Corp. | Lloyd's | Lloyd's | Lloyd's | Lloyd's |

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**Canada Steamship Lines Ltd. Dividends**—At the monthly meeting of directors of Canada Steamship Lines Ltd., at Montreal, Dec. 2, it was announced that the common stock had been placed on a 7% dividend basis, effective Jan. 1. The dividend of 1% for the then current quarter, payable to shareholders of record, Dec. 15, was declared. An increase in the dividend was expected, but it was anticipated that it would be made 6%, with a bonus of 2%; the directors, however, decided that a straight increase in the dividend was the better plan, as being of a more permanent character. Some confusion took place on the Montreal Stock Exchange, on account of the company not having notified the exchange of the change, but the company explained that as it was merely a decision to place the stock on a 7% basis for 1920, it was not considered necessary to notify.

**The Sinking of the Empress of Ireland**—The appeal of the C.P.R. against the Supreme Court of Canada's judgment in connection with the collision between the Norwegian s.s. Storstad and the C.P.R.'s s.s. Empress of Ireland, in the St. Lawrence River, May 29, 1914, came before the Judicial Committee of the Imperial Privy Council, Dec. 5. The Supreme Court decided that in the distribution of the proceeds of the sale of the Storstad, preference would be given to the claims of the passengers, but the Privy Council, has now decided that the C.P.R. shall share equally with the other claimants. The chief point dealt with was whether the disaster occurred in Canadian territorial waters or on the high seas.

**The Marine Navigation Co. of Canada** Ltd., which is operating several vessels between Canada and France, was incorporated at the end of 1916, and early in 1917 operated the steamships Nigaristan and North Cambria between Halifax and St. Nazaire. In addition to these steamships, several schooners, some with auxiliary power, were operated, chiefly in the lumber trade. The company is practically a subsidiary of the Marine Navigation Co., Ltd., of England, controlled by Sir William Garthwaite, Paris, France. Murray Kennedy, is President of the Canadian company, which is managed by McLean, Kennedy and Co., Montreal.

**Hudson's Bay Co.'s Steamships**—During 1919 the company's steamships, Athabasca River, Peace River and Port Simpson, and the motor boat Fort Churchill, were not in operation, and we are advised that the s.s. Athabasca River, and the motor boat, Taltahn, are being dismantled, the former at Peace River Crossing, Alta., and the latter at Port Simpson, B.C. The company has registered the steamboat Liard River, which was built at Fort Smith, Alta., in 1919. She is paddle wheel driven by engine of 3 n.h.p., and her dimensions are: length, 81.8 ft.; breadth, 16.8 ft.; depth, 3 ft.; tonnage, 113 gross, 77 registered.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w." and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

The following contractions are used in the column giving the type of the vessels to be built:—s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd | 66 | *4,575 | $207. | $ 947,025 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " " | 67 | *8,408 | 180. | 1,513,440 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbuilding Co | 61 | *3,995 | 205. | 818,975 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd | 100 | 4,530 | 207. | 937,710 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " | 106 | 4,300 | 217. | 933,100 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " | 101 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9, 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " | 102 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | ..... |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbuilding Co | 62 | *3,964 | 205. | 812,620 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | June 3, 1918 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " " | 63 | 3,750 | 205. | 768,750 | Lake, s.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " " | 64 | 3,750 | 205. | 768,750 | Lake, s.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | ..... |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | ..... | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co | 459 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 11, 1919 | Oct. 9, 1919 | ..... |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 28, 1919 | ..... | ..... |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co | 39 | *3,341 | 205. | 684,905 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 9, 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " " | 41 | 3,400 | 210. | 714,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " " | 40 | *3,357 | 205. | 688,185 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " " | 42 | 3,400 | 210. | 714,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards, Ltd | 1 | 8,100 | 195. | 1,579,500 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,100 | 195. | 1,579,500 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd | 73 | 4,300 | 215. | 924,500 | S.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18, 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8,382 | 188. | 1,575,816 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1,577,508 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | 8,100 | 188. | 1,522,800 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | 8,350 | 188. | 1,569,800 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8, 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | 8,100 | 188. | 1,522,800 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | ..... |
| 29 | Jan. 24, 1919 | Canadian Armourer | Harbour Marine Co | 1 | 8,100 | 198. | 1,603,800 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | ..... | ..... |
| 30 | Jan. 24, 1919 | Canadian Composer | " " " | 2 | 8,100 | 198. | 1,603,800 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,750 | 205. | 768,750 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | ..... |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co | 43 | 4,300 | 215. | 935,250 | S.d., p., b. and f'c's'le | Lloyd's | 10½ | Aug. 29, 1919 | ..... | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " " | 44 | 4,300 | 215. | 935,250 | S.d., p., b. and f'c's'le | " | 10½ | Aug. 29, 1919 | ..... | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | 8,100 | 198. | 1,603,800 | 2.d., p., b and f'c's'le | " | 11 | Apr. 26, 1919 | Dec. 6, 1919 | ..... |
| 35 | Nov. 22, 1918 | Canadian Exporter | " " | 12 | 8,100 | 198. | 1,603,800 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | ..... | ..... |
| 36 | Nov. 22, 1918 | Canadian Inventor | " " | 13 | 8,100 | 198. | 1,603,800 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | ..... | ..... |
| 37 | Nov. 22, 1918 | Canadian Prospector | " " | 14 | 8,100 | 198. | 1,603,800 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | ..... | ..... |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd | 3 | 10,500 | 197½ | 2,073,750 | 3.d., p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197½ | 2,073,750 | 3.d., p., and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co | 5 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8, 1919 | ..... |
| 41 | Mar. 31, 1919 | Canadian Miner | " " " | 6 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | ..... | ..... |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock and Engineering Co | 1 | 8,100 | 198. | 1,603,800 | 2.d., p., b and f'c's'le | " | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " | 2 | 8,100 | 198. | 1,603,800 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co | 4 | 4,350 | 215. | 935,250 | S.d., p., b. and f'c's'le | Bri. Corp. | 10 | Mar. 29, 1919 | ..... | ..... |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4,350 | 215. | 935,250 | S.d., p., b. and f'c's'le | " | 10 | July 14, 1919 | ..... | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbuilding Co | 65 | 3,950 | 180. | 711,000 | Lake, s.d., p. b., and f'c's'le | Lloyd's | 11 | Sept. 3, 1919 | Dec. 27, 1919 | ..... |
| 47 | Sept. 11, 1919 | Canadian Observer | " " " | 66 | 3,950 | 180. | 711,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | ..... | ..... |
| 48 | Sept. 2, 1919 | Canadian Artificer | Dominion Shipbuilding Co | 10 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd | 77 | 8,350 | 170. | 1,419,500 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,350 | 170. | 1,419,500 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,350 | 170. | 1,419,500 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8,350 | 170. | 1,419,500 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Midland Shipbuilding Co | 10 | 3,950 | 180. | 711,000 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Wallace Shipyards Ltd | 103 | 8,350 | 167.50 | 1,398,625 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | " " " | 104 | 8,350 | 167.50 | 1,398,625 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 334,793 | | $64,944,584 | | | | | | |

# St. Lawrence River Winter Navigation Possibilities.

By Hon. D. O. L'Esperance, Chairman Quebec Harbor Commission.

The possibilities of navigating the St. Lawrence in winter and making Quebec an all year open port, may at first glance look to many as a local subject affecting Canada alone, and, therefore, of little concern to the United States. However, if we throw a look at the map of the North American continent, we find that the routes of transportation by rail and water are so intimately connected and interlocked in all the territory along the St. Lawrence and the Great Lakes, that anything which is apt to affect or prolong the navigation on any portion of this great waterway is of vital concern, not only to Canada, but also to our great enterprising neighbor to the south. Any one who, in recent years, has followed closely the construction of railways in Canada, and the rapid improvement and development of our trade routes, may well ask himself why the port of Quebec from which flows clear and open water during 12 months of the year right through to the Atlantic, is closed during 4 months to ocean traffic, and this at a time when the use of that great waterway would be of immense advantage for the transportation of the ever growing products of the west. What is the chief reason for this unfortunate state of affairs? 1. Is it the lack of facilities in the port of Quebec? 2. Are the railways serving Quebec inadequate to handle the traffic which a more extended use of the port would develop? 3. Is the cause to be found in the fact that winter navigation as far as Quebec is a physical impossibility? To the first two questions I will reply briefly.

Quebec Port Facilities—Quebec, located on the St. Lawrence River, 181 miles above the entrance to the Gulf of St. Lawrence, at Father Point, and 166 miles below Montreal by the river, is in a commanding position at the widening of that great natural waterway. The facilities afforded in Quebec harbor for the accommodation of large vessels were demonstrated in a decisive manner when, during the embarkation of the first Canadian overseas contingent, in Sept., 1914, thirty-one steamships, ranging from 4,000 to 19,000 tons, were accommodated at the deep water docks and wharves, for taking on board men, horses, ammunition, and supplies for the contingent. In 1918, the last year of the war, there were on several occasions 14 large steamships lying at the berths at the same time, aggregating over 150,000 gross tons.

The harbor facilities are such that steamships of any size, or class, can be berthed at any time, day or night. The present shed space for ocean steamships has a capacity of 523,000 sq. ft. Eleven of these sheds have railway tracks serving them. The site selected for the development of wharves is unusually favored, from the standpoint of desirable requirements for water terminals. In addition to the large natural basin, with its many shelters, from a point several miles below Quebec, in fact, as far as Murray Bay, a distance of 85 miles, to 5 miles above the City of Quebec, the port affords the most ideal shelters for ships awaiting loads of wharf assignment, and provides ample sea room to guarantee at all times a full reserve of vessels to occupy dockage. This is a favorable feature in that, by providing the proper car storage room, the transportation companies can be always assured of constant employment of the yard and dock labor, which is necessary to maintain a permanent organization as well as an efficient one. The port of Quebec, in recent years has been properly and adequately equipped for handling of passengers, grain and other freight traffic. Unlimited space exists for further improvements in sheds, grain elevators, docks, etc., as the development of trade justifies. (For further information, see Quebec Harbor Commission's annual reports).

Railways Serving Quebec—From the standpoint of railways converging into Quebec the port offers unrivaled facilities. It is served by three through transcontinental railways, under unique management. The Canadian Pacific Ry., with its numerous branches and connections by rail and water all over the world; the National Transcontinental and the Canadian Northern Ry., now owned and operated by the Canadian Government. Besides, it is served by the Grand Trunk Ry., the Quebec Central Ry., the Quebec and Saguenay Ry. and the Intercolonial Ry.; the two latter roads owned and operated as part of the Canadian National Rys. These railways form a vast net all over Canada and tap all the great trade routes of the North American continent. Through the building of the National Transcontinental, Quebec has been made nearer to Winnipeg by some 214 miles, and owing to the low gradients of that railway, the grain of the west can be hauled at a much reduced rate. All these railways have direct access to the Quebec Harbor Commission's docks.

Winter Navigation—The approach by water to the City of Quebec via the Gulf of St. Lawrence and the St. Lawrence River, affords a most desirable entrance to the port of Quebec for the largest of ocean vessels, but in the past, this approach has not been navigated during the winter, usually closing early in December and remaining so until the latter part of the following April. Without seriously going into the problem, this condition has been accepted, and still, by some authorities, it is argued that navigation on the St. Lawrence River from the Gulf to the port of Quebec is impossible during winter. The principle obstacles that have been accepted in the past as making the navigation of the river impossible are, by order of importance: 1. Ice. 2. Snow storms. 3. Absence of navigation guides.

As early as the middle of November, in some years, the ice forming on the river above Montreal and to a point at Cap Rouge above Quebec, gradually flows with the current to the narrows of the river at Cap Rouge and at this point forms an ice bridge, effectually backing up the ice as far as the port of Montreal. Below this point the ice forms in the small bays and the gulf along the river to the port of Quebec and in the Straits of Belle Isle in the same manner, and with the rising of the tides, it is severed from its shores anchorage and forced by northeasterly winds into the channel. This ice obstacle never forms to any great extent in floes of sufficient size to impede navigation and with the outgoing tide usually disappears or remains in such small cakes as to be almost negligible as an obstacle. I give here in support of this contention the names of vessels and trips made in winter, from Quebec, after the official close of navigation:

December—
- Montmagny left for Halifax Dec. 9, 1910.
- Carleton left for Anticosti, Dec. 13, 1911, returning Dec. 22.
- Montmagny left for Halifax, Dec. 13, 1913.
- J. D. Hazen left for Archangel, Russia. Dec. 21, 1916.
- Sicoa left for Halifax, Dec. 21, 1917.
- Castalia left for sea, Dec. 30, 1916.

January—
- Montcalm left for north shore ports, Jan. 14, 1913.
- Favorite left for Boston, Jan. 11, 1918.
- Montcalm left for Gaspe ports, Jan. 16, 1918, returning Jan. 23.
- Canadian Voyageur left for Halifax, Jan. 21, 1919.

February—
- Lady Grey left for north shore and Gulf ports, Feb. 29, 1908.
- Montcalm left for Gulf ports, Feb. 5, 1911.
- Montcalm left for Gulf ports, Feb. 9, 1912.

March—
- Savoy left for Gulf ports, Mar. 26, 1903.
- Montcalm left for Gulf ports, Mar. 23, 1910.
- Montcalm left for Gulf ports, Mar. 16, 1912.
- Montcalm left for Gulf ports, Mar. 31, 1913.
- General Wolfe left for Gulf ports, Mar. 24, 1910.
- Aranmore and Natashquan left for north coast, Mar. 28, 1912, returning April 6.

April—
- St. Olaf left Quebec for Gulf ports, April 7, 1900.
- King Edward left for Gulf ports, April 9, 1904 and April 12, 1905.
- Polino left for Newfoundland, April 12, 1905.
- Aranmore left for north shore ports, April 4, 1909.
- Aranmore left for Gulf ports, April 9, 1911, returning April 19.
- Savoy left for Anticosti, April 15, 1911, returning April 22.
- Laurentian left for north shore ports, April 15, 1916.
- Druid left for Gulf ports, April 4, 1917.

These sailings have been made in winter, during all kinds of weather, with signal stations all closed up, and without any of the improvements which are suggested hereafter to make winter navigation safe. This fact alone should suffice to convince the unprejudiced mind that, with the inventions and means that modern science has placed at our disposal, winter navigation on the St. Lawrence as far as Quebec can easily become an accomplished fact.

Ice—Another obstacle to navigation in the form of ice affecting the operation of the Gulf is caused in the spring from the middle of April to the middle of May by the rush of ice out of the Gulf, causing a block between the St. Paul Islands, northwest of Cape Breton Island, and Cape Ray, the southwest point of Newfoundland. This block, which sometimes lasts for two weeks and completely prevents the passage of ships, is known as the bridge and it is a matter of record that at one time 300 ships have been detained by this obstacle and many wrecks have occurred in consequence on the Newfoundland coast. Ice from the Gulf is generally met with in Cabot Strait early in January, and at this time it is thin, but increases gradually to as much as 5 ft. thick. Occasionally small bergs, some 18 ft. high, are seen, although a large berg is seldom visible, and the ice has been known to float in this manner as late as the beginning of June. The prevalence of northwesterly and northerly winds drive the ice towards the strait and along the north coast of Cape Breton, while incoming vessels meet no ice except southward of St. Paul Island. Southwest gales occasionally take ice be-

tween Magdalen Island and Cape Breton Island. When this ice meets the main body flowing past Bird Rock, and closes the strait between St. Paul Island and the Newfoundland coast, northwesterly winds open the Newfoundland coast, and the strait clears quickly, so that in about 36 to 46 hours very little ice in visible quantities passes through for some period after navigation is open, particularly with north winds. Vessels not strongly built to encounter this ice are seriously impeded by encountering it, but it has been found that vessels specially strengthened for ice conditions have no difficulty in navigating.

This last condition appears to be the most serious obstacle in the operation of the St. Lawrence River during winter, but when it is considered that this condition at its worst, exists for but a short period of two weeks, at most, it is concluded that vessels encountering this obstacle can be diverted to Halifax, N.S., and St. John, N.B., and as the time that this occurs is not at a period when rail traffic is most seriously congested, the operation for the handling of traffic diverted to those ports could adequately be carried on by the present facilities afforded at those ports and lines serving same.

As an extra precaution and guard to navigation, information as to ice, wind, temperature, and weather conditions can be obtained by communication between vessels and any of the marine or signal stations in the Gulf and River St. Lawrence at Cape Ray, St. Paul Island, Magdalen Island, Anticosti, New Brunswick coast points, Gaspe coast and as far north as the Labrador coast. It is only necessary that the small additional expense of operating these stations during the winter and early spring be added to that of the summer season, and the short distances between those points of warning are an additional safeguard in that they afford sufficient time for ships to seek shelters that are numerous, enabling them to be protected against any unusual conditions.

Investigations have shown that strandings in the Gulf and River St. Lawrence, and the approaches, including the Newfoundland coast, are not, owing to the danger of the route, but to the want of care and attention to navigation. There is a wide variation in the magnetic bearing between Belle Isle and Montreal, particularly between the first named point and Anticosti, and the frequent wrecks which occurred formerly on the eastern part of Anticosti, in foggy weather, were doubtless due to non allowance for change in variation, but such obstacles to a route should not be considered a hindrance when modern day care and navigation instruments are considered.

Snow Storms are at times severe, lasting from 24 to 48 hours. They constitute the most serious menace to navigation on the St. Lawrence River during their duration, owing to the impossibility of sight. From observation during one of these storms it was found that objects at a distance of 50 ft. were entirely obliterated. This condition can be adequately met, so as to entirely eliminate any chance of collision or groundings, by careful warning of vessels, as suggested in the meeting of the ice condition, and anchorage can be had in shelters. The most serious wrecks occurring during those snow storms have resulted from vessels anchoring in the stream, and drifting to shore, after having anchor chains cut by the floe ice. To meet this condition, two breakwaters, providing adequate shelters could be established along the river, behind which ships would be sheltered from the floe during the storms. Other recommendations have been suggested, such as guards carried by vessels for anchor chains. It is estimated that if it was found necessary to establish the breakwaters mentioned, a total investment of $1,000,000 would be adequate.

It would also be necessary to fit every ship coming up the river with an iron or wooden apron over the bow, and vessels so equipped become in themselves icebreakers of no mean ability. Such outfits are in use on all ships running to Russian ports, and adequately protect ships from harm.

During the past the keepers of some lighthouses have been withdrawn from service during the winter, and other river markings have been removed during the flow of ice. This practice can be discontinued and the markings made sufficiently permanent to place them above the danger resulting from the ice flow, and the expense of such works and their operation would be almost negligible when compared with the great economy effected by the handling of freight by water transportation.

It appears that in short there are no serious obstacles for the entire winter navigation of the St. Lawrence River. In all northern countries, when the average winter temperature is below the freezing point, the water becomes frozen, and attempts to continue navigation are made with great difficulty. As population increases, and demands for cheaper and more effective communication grow, the question will arise as to the feasibility of operating the waterways and harbors in Canada during the winter. This matter has been found to be of no very serious moment, except in one or two instances. Winter navigation has been maintained for many years between Prince Edward Island and the New Brunswick mainland and similar communication has been carried on with Newfoundland, but when the volume of trade grows there can be no question as to the needs of cheaper methods of transit as afforded by water. In Russia winter navigation has been found to prove feasible and many ports require icebreakers in summer to reach northern

## Vessels Registered in Canada During October, 1919.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing vessels of less than 100 tons register.

STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 103690 | Luckport (1) | Midland, Ont. | Midland, Ont. 1898 | 126.0 | 21.6 | 12.0 | 231 | 134 | 57 | Sc. | Midland Transportation Co., Midland, Ont. |
| 141484 | Vaudreuil (2) | Montreal | Cleveland, Ohio 1889<br>Lauzon, Que. 1919 | 278.0 | 40.0 | 20.3 | 2514 | 1436 | 136 | Sc. | C. A. Barnard, Montreal, Que. |

(1) Formerly, Magnolia, a recovered wreck. (2) Formerly, Frontenac.

SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141383 | Audrey P. Brown | LaHave, N.S. | Schr. | Liverpool, N.S. 1919 | 123.4 | 28.9 | 10.8 | 252 | 218 | C. H. Ritcey, M.O., La Have, N.S. |
| 141151 | C.P.R. No.6 | Victoria, B.C. | Barge | Nelson, B.C. 1919 | 225.5 | 42.0 | 8.0 | 652 | 652 | C.P.R. Co., Montreal. |
| 141228 | Charlotte Comeau | Weymouth, N.S. | Schr. | Little Brook, N.S. 1919 | 172.0 | 37.4 | 13.4 | 779 | 728 | I. M. Comeau Shipping Co., Little Brook, N.S. |
| 141448 | Dollar VIII | Vancouver, B.C. | Scow | Dollarton, B.C. 1919 | 107.0 | 36.0 | 8.4 | 235 | 235 | Canadian Robert Dollar Co., Vancouver, B.C. |
| 141447 | E. C. E. 8 | " | " | Vancouver, B.C. 1899 | 97.3 | 28.5 | 6.8 | 161 | 161 | Evans, Coleman & Evans, Ltd., Vancouver, B.C. |
| 141485 | F. L. Heidritter | Montreal | Barge | Whitehall, N.Y. 1901 | 96.5 | 17.8 | 7.3 | 123 | 108 | Richelieu Transportation Co., Montreal. |
| 141409 | Freda M. Himmelman | Lunenburg, N.S. | Schr. | Lunenburg, N.S. 1919 | 125.4 | 26.9 | 10.6 | 174 | 114 | A. Himmelman, M.O., Lunenburg. |
| 141095 | Holmes A. Frank | Chatham, N.B. | " | Nordin, N.B. 1919 | 174.0 | 38.5 | 13.0 | 690 | 637 | J. Robinson, Millerton, N.B. |
| 141449 | J. C. No. 14 | Vancouver, B.C. | Scow | New Westminster, B.C. 1911 | 84.0 | 28.1 | 7.0 | 139 | 139 | J. McL. Macmillan, Vancouver, B.C. |
| 141450 | K. 50 | " | " | " 1919 | 87.9 | 33.7 | 8.9 | 227 | 227 | S. S. McKeen, Vancouver, B.C. |
| 141410 | Marjorie Hennigar | Lunenburg, N.S. | Schr. | Chester Basin, N.S. 1919 | 116.1 | 27.0 | 10.6 | 161 | 108 | C. H. Ritcey, Riverport, N.S. |
| 141411 | Mary H. Hirtle | " | " | Lunenburg, N.S. 1919 | 124.2 | 26.8 | 10.6 | 169 | 111 | J. Hirtle, M.O., Lunenburg, N.S. |
| 141227 | Nettie C. | Weymouth, N.S. | " | Saulnierville, N.S. 1919 | 150.0 | 33.3 | 13.1 | 495 | 449 | Acadia Shipping Co., Meteghan River, N.S. |
| 138438 | Peaceland | Annapolis Royal, N.S. | " | Annapolis Royal, N.S. 1919 | 114.0 | 30.0 | 10.6 | 287 | 262 | Annapolis Shipping Co., Annapolis Royal, N.S. |
| 141230 | Rose Anne Belliveau | Weymouth, N.S. | " | Belliveau's Cove, N.S. 1919 | 130.5 | 30.8 | 10.5 | 311 | 282 | B. Belliveau, Belliveau's Cove, N.S. |
| 141517 | Seaman, A. O. | Parrsboro, N.S. | " | Cape d'Or, N.S. 1919 | 152.0 | 34.5 | 12.7 | 470 | 435 | S. M. Field, Cape d'Or, N.S. |
| 141516 | Whiteson | " | Bkn. | Alma, N.B. 1919 | 175.0 | 37.6 | 18.1 | 812 | 762 | C. T. White & Son, Sussex, N.B. |

Siberia. Winter navigation has been maintained for many years on the Great Lakes, and at some points on Lake Ontario, icebreaking ferries are operated through 3 or 4 ft. of solid ice for a distance of 50 or 60 miles.

The whole cost of making the St. Lawrence River navigable in winter as far as Quebec, including the construction of two icebreakers, the dredging of the channel to a minimum of 40 ft. and proper equipment of lights and buoys, has been estimated at $10,000,000, in round figures. The advantages to be derived by keeping the port of Quebec open the year round are so great that the cost of equipment to meet these conditions appears insignificant.

The foregoing paper was read before the American Association of Port Authorities at its annual meeting in Galveston, Texas, recently.

## Wreck Commissioner's Enquiries and Judgments.

### Stranding of s.s. Germanicus

Held at Montreal, Nov. 21, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. C. Lapierre and Commander C. J. Stuart, R.N.R., into the cause of the stranding of the s.s. Germanicus on the northwest reef of Bicquette Island in the River St. Lawrence, Nov. 7, while bound to Montreal from Rotterdam. The s.s. Germanicus was formerly a German steamship and is being operated by Ropener & Co., on behalf of the British Ministry of Shipping.

The court found that the master's evidence showed a marked indifference as to the manner in which the vessel was navigated. At Cape Magdalen the vessel had apparently deviated from her course, and the evidence showed that either the courses by compass were faulty, or were badly steered, or other agencies were at work which were not explained. There were no unusual currents and, though strong winds were experienced, it was said that they did not tend to take the ship from her course. At the time of the stranding, the mate was in charge, it being alleged that the master was intoxicated, and that it was impossible to arouse him. The vessel struck while going at half speed and immediately the order full speed astern, was given, and at that time the master appeared on the bridge. Subsequent effort to release the vessel proved unavailing and further attempts will be made if possible, in the spring.

With regard to the pilot boat, the court expressed the opinion that there was nothing in the weather conditions to prevent her being, if not at the pilotage grounds, at least at her station, which is Father Point and not Bic. It may happen in rough weather that the pilot boat would be forced to take refuge at Bic Island, but the moment the weather moderated her place would be Father Point, and the court was assured that at the time of the stranding, the pilot boat was west of the reef on which the vessel stranded and in a position not justified by the weather existing.

The court found that the master, Capt. John Olive, was incapable of administering or exercising the vigilance and care for property with which he was entrusted, through having indulged freely in intoxicating liquors. It cancelled his certificate as master, but recommended that a mate's certificate be granted to him. On account of the extenuating circumstances, the court exercised leniency towards the mate, Thomas Pinkney, and did not deal with his certificate, but severely reprimanded him for not taking into account the state of the tides. The second officer was exonerated from all blame and his certificate returned to him. With regard to the pilot boat being away from her station, the court expressed the opinion that it is a matter which should be investigated by the Marine Department, and recommended that that course be adopted at the earliest moment possible.

### Stranding of s.s. Rio Negro.

Held at Quebec, Que., Dec. 3, 1919, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. C. Lapierre and Commander C. J. Stuart, R.N.R., into the stranding of the s.s. Rio Negro near Point des Monts, on the north shore of the Gulf of St. Lawrence, Nov. 17. The master's evidence, which was given in a very straightforward manner, indicated that the ship's courses and distances had been made good up to Martin River, and a safe distance was allowed off the land in order to reach Father Point. On leaving the bridge, he left written instructions in the night order book, as well as verbal instructions, that he should be called when Cape Chat was visible, or the distance run. When the distance had been run, the second officer did not carry out the instructions to call the master, and the ship proceeded on the course. He was succeeded by the first officer, who stated that the weather was clear, though his log book shows that a heavy snow storm had come on. Seeing what he considered to be the Matane light ahead of him, he immediately put the ship full speed astern and hard aport, and called the master. The first officer then ordered half speed ahead, and then full speed, with the intention of leaving the light, thought to be the Matane light, astern of him, and getting an offing. This speed was maintained for about four minutes after the master came on deck, and then full speed astern was ordered, when land became visible, the ship striking at that time.

The court was of opinion that the cause of the casualty was the disobeying of instructions by the second officer, as to calling the master, and he was declared in default for not carrying out implicitly the instructions he had received. The first officer erred in judgment, by being led astray as to the light he saw being the Matane light, and considered that he should have made sure of the nature of the light before acting on his assumption, or to have taken soundings and stopped the ship until his position was verified. He was, therefore, found in default for lack of judgment. The court considered that there was nothing in the master's conduct to give rise to criticism, but, on the contrary, the fact that he released the ship from her precarious position, with such slight damage under the circumstances, is much to his credit. The certificate of the second officer, David Davies, was suspended for three months, and the first officer, Alfred Hodder, had his master's certificate suspended for two months, dating from Dec. 3, 1919. The master and third officer were exonerated from all blame.

## Repair of German Ships Interned in South America.

The Montreal Gazette's London, Eng., correspondent sent the following copyrighted cable dispatch, Dec. 4:—The award of the contract to repair enemy ships interned in South American waters to a German instead of a Canadian firm, has been explained in the House of Commons at the instance of Percy Hurd, M. P. Col. Leslie Wilson, Parliamentary Secretary to the Minister of Shipping, under took to defend the contract, but to anyone with inside knowledge of the negotiations, his statement appears very curious. He said: "The ships which could not be properly repaired on the spot, are being towed to German yards to be repaired, the expenses being met by Germany." There would not be a year's delay, as suggested would be occasioned, but on the contrary, the work should be expedited, as the majority of the ships were built in Germany, and German shipbuilders are in possession of the drawings, patterns, etc., of the damaged parts. Even if it had been possible for any British or colonial firm to have undertaken the repairs, it would have cost a large sum, which would have to be financed in cash by the British Government.

Col. Wilson appears to have been badly misinformed. Had the Canadian contract been accepted, the ships would have been accepted, the ships would have been ready six months ago, and their operation would have paid the whole cost of repairs by now. As it is, it will be another six months before they are ready. As for Germany bearing the expense of the repair, the Secretary admitted to your correspondent, provision had to be made for this under the treaty obligation. Meanwhile Canada has been deprived of the use of the ships.

Proposed Drydocks at Vancouver—In addition to the applications for subsidies for the construction of drydocks at Vancouver, made by J. Coughlan & Sons, Davidson & Cameron, and Wallace Shipyards, Ltd., details of which were given in Canadian Railway & Marine World for Nov., 1919, page 621, we are officially advised that the Raymond Concrete Pile Co. Ltd., Montreal, has applied for a subsidy in connection with its project to build a masonry graving dock of the first class at Burrard Inlet, Vancouver. The Drydock Subsidy Act provides that a drydock of the first class shall cost not more than $5,500,000, and shall be of the following dimensions, clear length of bottom from caisson groove or hollow-quoin to head, 1,150 ft.; clear width of entrance, 125 ft.; depth of water over sill at high water ordinary spring tides, 38 ft. The subsidy to be paid for such dock is at the rate of 4½% per annum of the cost of the work, payable half yearly for not exceeding 35 years from the completion of the work.

The s.s. Frontenac, which, as stated in Canadian Railway and Marine World for Nov., 1919, was bought from U.S. owners by the Davie Shipbuilding and Repairing Co., Lauzon, Que., has been thoroughly overhauled at the company's yard and has been placed on the Canadian register under the name of Vaudreuil, in the name of C. A. Barnard, Montreal. She is screw driven, by engine of 136 n.h.p., and her dimensions are: length, 278 ft.; breadth, 40 ft.; depth, 20.3 ft.; tonnage, 2,514 gross, 1,436 registered.

# General Shipbuilding Matters Throughout Canada.

**Steamships for French Government**—In reference to the Ottawa press report, to the effect that the French Government was prepared to order 121 steel cargo steamships, to be built in Canada, at $170 a ton, which was referred to in Canadian Railway and Marine World for December, we are informed by the head of the Technical Department of the Merchant Marine, French High Commissioner's office, New York, that nothing is known there of such an intention, but that M. Falcoz, a representative of the Messageries Maritimes, has been in the United States for the purpose of pricing the construction of several cargo steamships for themselves.

Virtually all of the vessels contracted for in the U.S. are completed, although a few remain to be finished. A question that is still pending between the U.S. and French Governments is said to be preventing a large number of contracts for tank steamships being given to U.S. shipyards.

**Omar Blinn**, Grosses Coques, N.B., launched a barquentine of 692 net tons for C. E. K. Warren, Halifax, N.S., early in December. She is equipped with gasoline engines for hoisting, and full electric light installation.

**Canadian Vickers Ltd.**, Montreal—In addition to the 4 steel steamships which this company is building for Canadian

**Dominion Shipbuilding Co.**, Toronto—Of the 8 steel steamships delivered during 1919, by this company, as mentioned in our last issue, the first was sold to the Marine Trading Co., New York; 4 have been sold to the Aalesund Steamship Co., of Norway, and the other 3 are being operated by Christoffer Hannevig Inc., New York.

The company launched the steamship T. L. Church, Dec. 20, the christening ceremony being performed by Mrs. L. H. Clarke, wife of the Lieut.-Governor of Ontario. The ship has been designed for ocean service and was built on yard account. Her dimensions are: length, 261 ft.; breadth, moulded, 43½ ft.; depth,

**Steamship War Vixen, 3,500 d.w. tons, for British Government.**
The s.s. War Vixen, and sister ship, War Magic, were both built by Canadian Allis-Chalmers Ltd., Bridgeburg, Ont., for the British Government, under orders from the Imperial Munitions Board, and went into service in Nov., 1918. Canadian Allis-Chalmers Ltd., are building two precisely similar ships for private account.

A New York press dispatch of Dec. 20 said:—An executive officer of French High Commission states that France has definitely decided not to build ships in United States or Canadian yards. It is stated that the decline in the exchange rates is responsible for the decision. Should the rate of exchange become much more favorable, it is possible that the French Government will change its attitude. Until recently it was anticipated that France would order about 150,000 tons of ships from American yards. An unverified report was current this week to the effect that a French syndicate had placed a contract in U.S. yards for the construction of 11 tank steamers; 9 of large dimensions and 2 of small register. Enquiry at the French High Commission revealed that the tankers had not been ordered by the government, and an executive stated that he knew nothing of private interests having placed this contract. In Canadian yards, the French Government has had a number of oil barges of about 1,500 d.w. tons register built, but these have been completed and are now on their way to French ports.

Government Merchant Marine, Ltd., for delivery during 1920, it has orders for 2 steel steamships, each of approximately 8,350 d.w. tons, for Norwegian interests.

**Collingwood Shipbuilding Co.**, Collingwood, Ont.—The Northern Navigation Co., s.s. Hamonic will be docked by this company during the winter, for wheel repairs.

**J. Coughlan & Sons**, Vancouver, B.C.—The trial trip of the s.s. War Chariot, the last of the ships built by this firm for the British Government, under orders from the Imperial Munitions Board, made her trial trips in November, completed her cargo at Burrard Inlet and sailed for Great Britain at the end of November. This firm has built 10 steamships of 8,800 d.w. tons each, for the British Government, viz.: War Camp, War Charger, War Chariot, War Chief, War Noble, War Cavalry, War Convoy, War Column, War Company, and one other which was christened Alaska, and was on the stocks at the time the Imperial Munitions Board placed its original order, and was taken over by it on behalf of the British Government.

moulded, 23 ft.; deadweight carrying capacity, 3,350 tons. She is equipped with triple expansion engines of approximately 1,200 h.p.

**Grant & Horne**, St. John, N.B., launched the 4-masted schooner Cutty Sark, Dec. 8.

**Halifax Shipyards Ltd.**, Halifax, N.S.—The s.s. Troja, which was built by the Dominion Shipbuilding Co., Toronto, and which stranded on the Old Proprietor Ledge, early in 1919, and became almost a total loss, has been practically rebuilt by Halifax Shipyards Ltd. After docking and examination, it was found that all the bottom plating to the bilge strake, floors, intercostals, and 85% of the double bottom, with 11 tank top plates in the fore hold and a large number of frames and hold supports, had to be renewed. The interior fittings were destroyed by fire, while the vessel was on the ledge, and considerable damage was done to the steel plating in connection with the officers' quarters. The engines and boilers had to be completely overhauled and all missing parts replaced. The contract was awarded the Halifax

company, after competition with several large U.S. yards, Aug. 29, 1919. The accompanying illustrations show the Troja undergoing repairs in Halifax drydock, and afloat after the repairs had been completed.

Steamship E. D. Kingsley, 1,500 d.w. tons.
Built for Kingsley Navigation Co., Vancouver, B.C., by Canadian Car & Foundry Co., Fort William, Ont. This ship was fully described in Canadian Railway and Marine World for Nov., 1919, pg. 617.

**Foundation Co.**, Victoria, B.C.—The trial of the s.s. Nouvelle Ecosse, took place Dec. 3, and was considered satisfactory, a general average of 12.42 knots an hour on the Parry Bay course being obtained. This is the last of the 20 wooden steamships of approximately 3,000 d.w. tons built by this company for the French Government.

**Wm. Lyall Shipbuilding Co.**, North Vancouver, B.C. This yard, at which a number of wooden steamship bulls were built for the British Government, under orders from the Imperial Munitions Board, and also for the French Government, and which was closed on the completion of its contracts, will, it is reported locally, be reopened for resumption of business in the near future. The plant was offered for sale recently.

**W. N. MacDonald**, Sydney, N.S., is building a concrete motor ship, Permanencia, which was launched at Sydney, N.S., Dec. She was built under Lloyd's special survey for classification at the highest rating. She is 128 ft. long over all, 27½ ft. beam, and with a depth of 12½ ft. There are two hatches, each 12 by 14 ft., with the deck house and bridge placed amidships, between the hatches. The vessel will have deadweight carrying capacity of from 450 to 500 tons, and sleeping accommodation for 10 passengers, in addition to the crew. She will be equipped with a Bolinder crude oil engine of 240 b.h.p., for a speed of from 9 to 10 knots an hour when loaded, supplied by the Swedish Steel and Importing Co. Ltd., Montreal. When completed she will be operated between Cape Breton, Prince Edward Island, and Newfoundland ports.

**McKay and McLean**, Economy, N.S., launched the tern schooner Hiram D. McLean, 450 tons register, at midnight, Dec. 6. She is fitted with all the latest improvements, including gasoline power for hoisting the sails and anchor, and is classed in Bureau Veritas for 12 years. She subsequently went to Walton to load plaster for New York. She was named after Hiram D. McLean, one of the partners, who died recently, and it is stated that, on account of his death, the yard will be closed.

**Midland Shipbuilding Co., Ltd.**, Midland, Ont., is building a full canal size steel steamship under its yard no. 9, of approximately 2,500 d.w. tons, for the Great Lakes Transportation Co. It is being built so that it can operate on either the lakes or the ocean, which ever it may be called upon to do. It will be equipped with complete electric lighting installation and all modern appliances. The boilers will be 11½ ft. diar. by 11 ft. long, for a working pressure of 180 lb., but the engines will probably be transferred from another vessel.

The s.s. F. P. Jones, which, as stated in our last issue, was purchased recently from the United States Shipping Board by the Great Lakes Transportation Co., has been thoroughly overhauled by the Midland Shipbuilding Co., and a complete derrick arrangement, with 8 deck winches, has been installed. All steam pipes have been placed on deck, as for a regular ocean type vessel, and the boilers have been equipped for burning fuel oil, instead of coal as heretofore. Arrangements have also been made so that enough oil for various voyages can be carried in no. 3 tank, and also for storage, so that she may run oil into a land storage tank, to enable the owners to operate mills on land for grinding sugar. The derrick posts have been put on in such a way that they can be easily removed, should the vessel be transferred from ocean to lake service. The vessel has been chartered for operation in southern waters, to carry sugar cane, and the accommodation for the crew has all been remodelled, and spare lifeboats added. The name of the vessel has been changed to Glencaden, and not Glencadam, as stated in our last issue.

Steamshp Troja, undergoing repairs in Halifax Shipyards Ltd., drydock at Halifax, N.S.

**New Westminster Engineering & Construction Co.**, New Westminster, B.C.—It is reported that the shipbuilding yard at Poplar Island, New Westminster, B.C.,

operated recently by this company for building wooden steamship hulls, for the British Government, under orders from the Imperial Munitions Board, has been sold, and that it will be remodelled and equipped to build steel steamships under the management of Haley and Christian.

**The Port Arthur Shipbuilding Co.,** Port Arthur, Ont., in addition to building the steel cargo steamships for the Marine Department, which are referred to under "Canadian Government Merchant Marine Ltd.," on another page, completed early in 1919, four trawlers for the Naval Service Department, which were commenced late in the autumn of 1918. The company, during 1919, repaired over 30 ships, over 20 of which had to be docked. Although in 1918 the company turned out six 3,400 d.w. ton steel cargo steamships and 6 trawlers, and a tug, 13 ships in all, as against 8 in 1919, a lot of the 1918 work was done under war rush conditions and entailed a lot of overtime work. During 1919 the plant was steadily busy and the increased amount of repair work done over 1918 was large, so that the number of employes throughout 1919 was within about 200 of the number employed in 1918.

Steamship Troja, after having been repaired by Halifax Shipyards Ltd.

**Prince Rupert Dry Dock and Engineering Co.,** Prince Rupert, B.C.—The Grand Trunk Pacific Coast Steamship Co.'s steamships, Prince Rupert, Prince George, Prince Albert and Prince John, will, each in turn, be overhauled at this yard, during the winter. The s.s. Prince Rupert was withdrawn from service, for that purpose, towards the end of December.

Victoria, B.C.—When the Minister of Finance was in British Columbia recently, a plan was outlined by the Cameron Lumber Co., by which it would undertake to build a number of wooden sailing vessels, provided some government assistance was given. The proposal was made by J. O. Cameron, President of the company, that it would build 2 such vessels, and that H. C. Hansen would build 2, and he is reported to have stated that plans were in course of preparation, and that it was expected orders would be received to proceed within a few weeks. D. O. Cameron, of the same company, is reported to have stated that the matter was merely a proposal laid before the minister, with the object of trying to get some government assistance for the revival of wooden shipbuilding, and that it would be impossible to build vessels without such assistance.

**Wallace Shipyards Ltd.,** North Vancouver, B.C., laid the keel recently for a steel steamship for the Union Steamship Co. of British Columbia, and it was announced that the builders hoped to launch the ship by the end of January. All the material, including the engines, is on the ground, and no delays are anticipated. The steamship will be 173 ft. long, and approximately 800 d.w. tons.

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**Vancouver Steamship Co. Ltd.,** has been incorporated under the British Columbia Companies Act with $2,000,000 authorized capital and office at Vancouver, B.C., to own and operate steam and sailing ships, and to carry on a general navigation and transportation business.

The British Government is reported to have allotted the German steamship Kronprinz Friedrich Wilhelm, one of the vessels taken over from the enemy, to Canadian Pacific Ocean Services Ltd., to replace the s.s. Melita, which has been requisitioned to return troops from Great Britain to India.

## Projected Harbor Improvements at Vancouver, B.C.

In connection with the recommendations placed before the Vancouver Harbor Commission, for a number of improvements in the harbor, as outlined in our last issue, we are officially advised that the Vancouver Harbor Commissioners have submitted to the Marine Department, a proposal to purchase the necessary site and to build thereon a modern pier 1,200 ft. long, with double deck sheds and the latest loading and unloading devices. Among other matters submitted for approval, are, the operation of a car ferry service between Vancouver and North Vancouver, and a proposal for terminal railway construction.

A Montreal press dispatch of Dec. 11, stated that the Vancouver Harbor Commissioners and the Dominion Government had approved of the general scheme of harbor development for Vancouver as prepared by A. D. Swan, M. Inst, C.E., Montreal, and that the commissioners, after an extended tour of harbors in eastern Canada, and in the United States, had authorized Mr. Swan to prepare plans and specifications, so that tenders may be asked as early as possible, for the first unit, which will consist of deep water accommodation, by the provision of 4 modern steamship berths with 2-story reinforced concrete sheds, equipped with mechanical devices for handling cargo, the estimated cost of the work being about $5,000,000.

The Marine Department at Ottawa, advised Canadian Railway and Marine World, Dec. 18, that up to that date none of the harbor commissioners' proposals, as outlined above, had been approved.

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**A Novelty in Ship Repair**—The British Government has completed, at its Chatham dockyards, the joining together of the bow of the destroyer Zulu and the stern of the destroyer Nubian, thus making a new vessel out of the wrecks of two. Both vessels were damaged by mines, during the war. The new vessel has been named Zubian.

**The Convoy Steamship Co. Ltd.,** has been incorporated at Halifax, N.S., to own and operate the s.s. War Convoy, one of the steel steamships of 8,800 d.w. tons, built by J. Coughlan & Sons, Vancouver, B.C., for the British Government, under orders from the Imperial Munitions Board. The name of the vessel has been changed to Willdomino.

**The Canadian National Rys. Train Ferry Steamship Scotia** running between Mulgrave and Point Tupper, N.S., ran aground Dec. 5 at 5 a.m. while transferring the night express passenger train for Sydney across the Strait of Canso. The ferry was released on the following day without damage and the service was resumed.

**Tide Tables for Eastern Coast,** including the St. Lawrence River and Gulf, Bay of Fundy, Northumberland and Cabot Straits, have been prepared by the Tidal and Current Survey, Naval Service Department, under the superintendence of W. Bell Dawson.

**The St Lawrence Navigation Season** of 1919 was officially closed Dec. 10, so far as ocean shipping was concerned, with the departure of the Elder Dempster and Co.'s s.s. Bassa. The Canadian Government Merchant Marine Ltd., s.s. Canadian Planter, just completed by Canadian Vickers Ltd., left for Quebec, to take on cargo, Dec. 12.

# Canadian Notices to Mariners.

**Ontario—Light to be established** on southern extremity of Pointe aux Pins, about 2.5 miles east of Rondeau harbor. Occulting white acetylene light shown from a lens lantern on a pole. The light is unwatched.

**Ontario—St. Marys River, Pointe aux** Pins, main light, on outer end of low sand point, the 6th order dioptric apparatus will be replaced by a 4th order dioptric apparatus. The light will be fixed white as at present.

**Ontario—Lake Superior, Port Arthur** Harbor—During the past season the slip at the Thunder Bay elevator wharf, 1,200 ft. long by 150 ft. wide, was dredged by the Public Works Department to 21 ft. below the zero of the harbor gauge.

**United States—St. Marys River, Vidal** Shoals—Gas buoy established, on north side of channel; occulting red light every 10 seconds, thus: light 5 seconds, eclipse 5 seconds; steel cylindrical; red; depth, 25 ft.

**British Columbia — Vancouver Island,** West Coast, Quatsino Sound—J. H. Bingham of the tugboat Canpack reports the existence of a rock, with 1 ft. of water on it, in the channel south of Limestone Island, between Single Island and Foul Islets, where the charts shows 20 fathoms.

**British Columbia — Chatham Sound,** Malacca Passage—Light established, on southwest side of Genn Island; occulting white acetylene light, automatically occulted at short intervals; elevation, 30 ft.; visibility, 7 miles from all points of approach; steel cylindrical tank, surmounted by pyramidal steel frame supporting lantern; color, white; the light is unwatched.

**British Columbia — Chatham Sound,** Entrance to Prince Rupert Harbor—Light established on northwest side of East Kinahan Island; occulting white acetylene light, automatically occulated at short intervals; elevation, 30 ft.; visibility, 7 miles from all points of approach; white steel cylindrical tank surmounted by a pyramidal steel frame supporting lantern; the light is unwatched.

**Ontario—Lake St. Clair, Thames River** —During the summer of 1919, the Public Works Department dredged a channel 2,500 ft. long by 25 ft. wide with a least depth of 5 ft, from about 1½ miles above the mouth of the Thames River through the marsh, on a bearing of 134° 30′ (S. 43° E. mag.) to Jeannettes Creek station.

**Ontario—Lake Superior, Port Arthur** Harbor, Dredging—Additional dredging has been performed by the Public Works Department in the approach to the Richardson and Saskatchewan Co-operative elevators and in the Richardson slip, as follows; the middle ground immediately in front of the elevators has been dredged to 25 ft. deep to within 200 ft. from the front face of the wharves; on the south side of the entrance basin a strip 120 ft. wide and 800 ft. long was dredged to 25 ft. deep from the 25 ft. contour shoreward; on the north side of the entrance basin a strip 120 ft. wide and 850 ft. long was dredged to 25 ft. deep from the 25 ft. contour shoreward; the Richardson slip was completed to a length of 1,300 ft. and a width of 150 ft. to 25 ft. deep for the outer 600 ft. and 22 ft. deep for the inside 700 ft.

**United States—St. Marys River, Squaw** Island—Pipe Island Twins, light established on northerly end of East Twin Island in the lower St. Marys River; flashing white light, showing one flash of 0.5 second duration every 2 seconds; elevation, 26 ft; black pyramidal steel skeleton tower on concrete foundation pier; gas buoy 5B, will be discontinued; on southerly edge of Squaw Island in the lower St. Marys River; flashing red light, showing one flash of 0.5 second duration every 2 seconds; elevation, 26 ft.; red pyramidal steel skeleton tower on concrete foundation pier; gas buoy, 4, will be discontinued.

**United States—St. Marys River, Hay** Lake Cut—North entrance light no. 27 re-established on former position, on west side of north entrance to Little Rapids cut; occulting white light every 5 seconds thus; light, 2.5 seconds; eclipse, 2.5 seconds; elevation, 35 ft.; black pyramidal steel skeleton tower on concrete pier; temporary fixed red light will be discontinued.

**Ontario—Georgian Bay, Parry Sound** approach, Jones Island back range light, change in illuminant—The fixed white oil light has been replaced by an unwatched fixed white acetylene gas light.

**Ontario — Lake Superior, Whitefish** Bay, Corbeil Point, non-existence of shoal—During a recent examination of the vicinity of Corbeil Point, by the Hydrographic Survey, Naval Service Department, it was found that the shoal reported about 2.16 miles 287° 30′ (N. 69° 30′ W. mag.) from Corbeil Point lighthouse does not exist, a least depth of 14 fathoms having been found on this spot.

**Nova Scotia—West Coast, Yarmouth** harbor corner beacon temporarily discontinued—Position, ⅝ mile southwestward of the long wharf, Yarmouth; during dredging operations in Yarmouth harbor the corner beacon will be discontinued.

**Prince Edward Island—South Coast,** Bedeque Bay, Dunk River, Hurds Point pier, dredging—A channel 2,130 ft. long and 60 ft. wide with a least depth of 9 ft. has been dredged by the Public Works Department from deep water to Hurds Point pier, about 2½ miles south of Summerside, on the Dunk River; from a point 600 fe. north of the pier head the dredged channel gradually widens to 130 ft. in front of the pier, where there is a turning basin 130 ft. square.

**Quebec—Gulf of St. Lawrence, Mouth** of Rock River, Shelter Bay—Change in color of private range lights; on or about Dec. 1, 1919; on the islet south of the island about 1½ miles long at the mouth of Rock River; the range lights will be changed from fixed red to fixed white.

**Nova Scotia—South Coast, Ship Har**bor—Uncharted shoal; 2¾ cables 113° 30′ (S. 45° E. mag.) from Wolf Point light; depth, 13 ft; pinnacle of rock 10 ft. across, dropping immediately to 36 ft. of water to the eastward and 27 ft. of water to the westward.

**Nova Scotia—South Coast, Sheet Har**bor—Uncharted shoal; 1½ cables southward of Monahan Island (marked L. northeast of Malagash Island); depth, 11 ft.; large boulder, about 9 ft. square, dropping immediately off to 30 ft. water.

**Nova Scotia—South Coast, Mary-Jo**seph harbor—Uncharted shoals; 1 1-3 miles 91° (S. 67° 30′ E. mag.) from Thrumcap lighthouse; depth, 17 ft.; boulders over rock, 10 yds. across, with a depth of 5 fathoms; 3 cables 271° (N. 67° 30′ W. mag.) from Lang shoals; depth, 9 ft.; large stones covered with kelp over solid rock, 50 yds, across with a depth of 3½ fathoms; 1¾ miles 68° 30′ (E. mag.) from Gull Ledge; depth, 5 fathoms; pinnacle of rock, 8 fathoms of water 30 ft. off.

**British Columbia—Vancouver Island—** The car ferry slip on the south side of the Canadian Western Fuel Co.'s wharf in Nanaimo harbor has been dredged by the Public Works Department to a least depth of 17 ft. and a width of 60 ft. from the shore end of the slip to deep water.

**British Columbia—Grenville Channel,** Camp Point—Light established on point of land directly opposite Yolk Point, southern entrance to Grenville Channel; white acetylene light, automatically occulted at short intervals; elevation, 22 ft.; visibility, 10 miles from all points of approach; structure, concrete base, surmounted by a staff carrying a wooden structure, concrete base, surmounted by a staff carrying a wooden slatwork ball, with lantern on top; color, white; the light is unwatched.

## Vessels Added to and Deducted From the Canadian Register During October, 1919.

| | Steam. | | | Sailing. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| **Added.** | No. | Gross. | Registered. | No. | Gross. | Registered |
| Built in Canada | 2 | 193 | 118 | 24 | 6,440 | 5,922 |
| Purchased from foreigners | 1 | 2,514 | 1,436 | .... | ..... | ..... |
| Transferred from British possessions | .. | ..... | ..... | .... | ..... | ..... |
| New registers | 1 | 231 | 134 | 1 | 87 | 79 |
| Totals | 4 | 2,938 | 1,688 | 25 | 6,527 | 6,001 |
| **Deducted.** | | | | | | |
| Wrecked or otherwise lost | 1 | 149 | 75 | 5 | 956 | 881 |
| Broken up or unfit for use | 2 | 41 | 28 | 2 | 26 | 26 |
| Sold to foreigners | 1 | 41 | 28 | 2 | 26 | 26 |
| Transferred to United Kingdom | .. | .... | .... | .. | ..... | ..... |
| Transferred to British possessions | .. | .... | .... | 3 | 670 | 566 |
| New registers | .. | .... | .... | 4 | 121 | 114 |
| Tonnage alterations, without re-registry | .. | .... | .... | .. | ..... | ..... |
| Totals | 4 | 257 | 149 | 17 | 3,088 | 2,762 |

**Job Shipyard Corporation,** controlled by Job Bros. and Co., St. John's, Nfld., has opened a yard at Machias, Me., to build sailing and auxiliary powered vessels between 100 and 2,000 tons.

**The Canada Atlantic Transit Co.'s** directors for the current year, as elected at the recent annual meeting, are as follows: H. G. Kelley, President; W. D. Robb, Vice President; Frank Scott, Secretary and Treasurer; W. H. Biggar, K.C., and J. E. Dalrymple. They are all G.T.R. officials.

## The Proposal to Close the Straits of Belle Isle.

F. W. Hyndman, Charlottetown, P.E.I., has written the local press as follows:—I am satisfied that no sane man having a person knowledge of the conditions existing in the Gulf of St. Lawrence and Straits of Belle Isle would for one moment give favorable support to the proposal to close the Straits of Belle Isle, and thereby to cause a great change in climatic conditions in the Maritime Provinces.

Some years ago, when I was an assistant in the hydrographic survey of the Gulf of St. Lawrence and Newfoundland, working under the British Hydrographic Department, I spent two summers in the Straits of Belle Isle surveying those straits and the adjacent coasts of Labrador and Newfoundland. During those two seasons our particular attention was given to recording the currents of the straits and the action of this Arctic current.

We found that the flow of water from the River St. Lawrence, the Miramichi, and other rivers emptying into the gulf caused a continuous flow of the Straits of Belle Isle to be out to the Atlantic, and there was no current coming in. The consequence was that there was no flow of ice from the Arctic currents inwards through the straits, and in those two summers we only saw two small icebergs enter the straits, and they were driven by a heavy easterly gale which lasted three or four days. The fact is that the Arctic current which comes down along the Labrador coast, and east coast of Newfoundland is so wide, deep, and swift that it pays no attention to the Straits of Belle Isle; besides the constant outflow of water from the gulf to the Atlantic prevents it having any effect.

To close the Straits of Belle Isle, would, in my opinion, have a disastrous effect upon the climate and inhabitants of the gulf coasts and Prince Edward Island. The ice of the northern part of the gulf is now carried out with the outgoing current of the straits, which, if closed, would remain in the gulf until late in the summer, and have an exceedingly bad influence upon the farming portions of those coasts. The Gulf stream which passes eastbound some 120 miles south of Nova Scotia and Newfoundland would not be affected in the slightest degree by the closing of the Straits of Belle Isle.

I sincerely trust that before the Canadian Government take any steps, such as have been recommended, it will consult the British Hydrographic Office in London, where I am satisfied my contentions will be fully upheld.

Tugs for Fisheries Protection Service—The Naval Service Department, Ottawa, will receive tenders to Jan. 23, for the construction of 3 first class, single screw tugs, of approximately the following leading dimensions, viz.: length between perpendiculars, 75 ft.; breadth, moulded, 17½ ft.; depth, moulded, 9 ft.; mean draft, loaded, 7½ ft.; deadweight on that draft, approximately 30 tons; speed on measured mile, 10 knots; complement, officers and men, 6; to be delivered at Port Stanley or Kingsville, Ont., for use on Lake Erie. Contractors must submit with their tenders, an outline of the general arrangement plan and midship section, and detail specifications of hull and machinery.

## Wireless Telegraphy Requirements for British Ships.

An act to make further provision with respect to wireless telegraphy on ships (chap. 38), was passed by the British Parliament, Aug. 18, as follows:—

1.—(1) Every seagoing British ship registered in the United Kingdom being a passenger steamer or a ship of 1,600 tons gross tonnage or upwards shall be provided with a wireless telegraph installation, and shall maintain a wireless telegraph service which shall be at least sufficient to comply with the rules made for the purpose under this act, and shall be provided with one or more certified operators and watchers, at least, in accordance with these rules: Provided that the Board of Trade may exempt from the obligations imposed by this act any ships or classes of ships if they are of opinion that, having regard to the nature of the voyages on which the ships are engaged, or other circumstances of the case, the provision of a wireless telegraph apparatus is unnecessary or unreasonable.

(2) The Board of Trade, in consultamore than one operator would have been tion with the Postmaster-General, shall make rules prescribing the nature of the wireless telegraph installation to be provided, of the services to be maintained, and the number, grade, and qualifications of operators and watchers to be carried:

Provided that no ship shall be required to carry more than one operator unless required under the provisions of the Merchant Shipping (Convention) Act, 1914.

(3) If this section is not complied with in the case of any ship, the master or owner of the ship shall be liable in respect of each offence to a fine not exceeding £500, and any such offence may be prosecuted summarily, but, if the offence is prosecuted summarily, the fine shall not exceed £100.

(4) A surveyor of ships or a wireless telegraph inspector may inspect any ship for the purpose of seeing that she is properly provided with a wireless telegraph installation and certified operators and watchers in conformity with this act, and for the purpose of that inspection shall have all the powers of a Board of Trade inspector under the Merchant Shipping Acts, 1894 to 1916. If the said surveyor or inspector finds that the ship is not so provided, he shall give to the master or owner notice in writing pointing out the deficiency, and also pointing out what in his opinion is requisite to remedy the same. Every notice so given shall be communicated in the manner directed by the Board of Trade to the chief officer of customs of any port at which the ship may seek to obtain a clearance or transire, and the ship shall be detained until a certificate under the hand of any such surveyor or inspector is produced to the effect that the ship is pro-

## Sault Ste. Marie Canals Traffic.

Summary for 1919.

| Articles | | | Canadian Canal | U.S. Canal | Total |
|---|---|---|---|---|---|
| Lumber | Eastbound | M. ft. B.M. | 11,089 | 233,337 | 244,426 |
| Flour | " | Barrels | 3,197,770 | 4,889,784 | 8,087,554 |
| Wheat | " | Bushels | 25,299,090 | 88,435,758 | 113,734,848 |
| Grain, other than wheat | " | Bushels | 23,400,905 | 29,333,440 | 52,734,345 |
| Copper | " | Short tons | 10,801 | 47,608 | 58,408 |
| Pig Iron | " | Short tons | 1,897,688 | 44,887,789 | 46,785,477 |
| Iron Ore | " | Short tons | 899 | 2,958 | 3,857 |
| Stone | " | Short tons | 26,057 | 25,955 | 52,012 |
| General Merchandise | " | Short tons | 20,763 | 43,274 | 64,037 |
| Passengers | " | Number | 20,003 | 8,390 | 28,393 |
| Coal, soft | Westbound | Short tons | 275,323 | 11,186,639 | 11,461,962 |
| Coal, hard | " | Short tons | 7,900 | 2,405,089 | 2,412,989 |
| Iron Ore | " | Short tons | ..... | 67,985 | 113,856 |
| Manufactured Iron and Steel | " | Short tons | 45,871 | 67,985 | 113,856 |
| Salt | " | Short tons | 14,651 | 79,242 | 93,893 |
| Oil | " | Short tons | 2,600 | 384,423 | 387,023 |
| Stone | " | Short tons | 663 | 318,495 | 319,158 |
| General Merchandise | " | Short tons | 232,022 | 246,119 | 478,141 |
| Passengers | " | Number | 21,153 | 7,446 | 28,599 |
| **Summary** | | | | | |
| Vessel Passages | | Number | 4,070 | 13,517 | 17,587 |
| Registered Tonnage | | Net | 6,485,099 | 43,603,991 | 50,089,090 |
| Freight—Eastbound | | Short tons | 3,558,929 | 49,272,276 | 52,831,205 |
| Westbound | | Short tons | 579,030 | 14,825,307 | 15,404,337 |
| Total Freight | | Short tons | 4,137,959 | 64,097,583 | 68,235,542 |

The Canadian canal was opened Apr. 12 and closed Dec. 15, 1919; season, 248 days.

The U.S. canal was opened Apr. 10 and closed Dec. 15, 1919; season, 250 days.

COMPARATIVE STATISTICS FOR 1918 AND 1919.

| Items | | 1918 | 1919 |
|---|---|---|---|
| Vessels: Steamers | Number | 17,067 | 14,866 |
| Sailing | Number | 1,634 | 1,218 |
| Unregistered | Number | 1,909 | 1,503 |
| Total | Number | 20,610 | 17,587 |
| Lockages | Number | 14,903 | 12,302 |
| Tonnage: Registered | Net | 61,100,244 | 50,089,090 |
| Freight | Short tons | 85,680,327 | 68,235,542 |
| Passengers | Number | 34,990 | 56,992 |
| Lumber | M. ft. B.M. | 296,919 | 244,426 |
| Flour | Barrels | 82,28,844 | 8,087,554 |
| Wheat | Bushels | 122,718,146 | 113,734,848 |
| Grain | Bushels | 30,800,621 | 52,734,345 |
| Copper | Short tons | 86,078 | 58,409 |
| Iron Ore | Short tons | 60,551,296 | 46,922,792 |
| Manufactured and Pig Iron | Short tons | 38,767 | 117,713 |
| Coal: Soft | Short tons | 15,770,560 | 11,461,962 |
| Hard | Short tons | 2,211,050 | 2,412,989 |
| Salt | Short tons | 81,007 | 93,893 |
| Oil | Short tons | 334,134 | 387,023 |
| Stone | Short tons | 402,009 | 371,170 |
| General Merchandise | Short tons | 494,437 | 542,178 |

perly provided with wireless telegraph installation and certified operators and watchers in conformity with this act.

(5) The obligations imposed by this act shall not come into operation while the obligations with respect to wireless telegraphy on ships imposed by the Defence of the Realm Regulations remain in force, but shall be in addition to, and not in substitution for, the obligations as to wireless telegraphy imposed by the Wireless Telegraphy Act, 1904, or any order in council, or regulations made thereunder, or by the Merchant Shipping (Convention) Act, 1914.

2. The foregoing provisions of this act shall, as from a date three months after the coming into operation of the obligations imposed by this act on British ships registered in the United Kingdom, apply to ships other than British ships registered in the United Kingdom, while they are within any port in the United Kingdom in like manner as they apply to British ships so registered.

3.—(1) This act may be cited as the Merchant Shipping (Wireless Telegraphy) Act, 1919, and the Merchant Shipping Acts, 1894 to 1916, and this act may be cited together as the Merchant Shipping Acts, 1894 to 1919.

(2) This act shall be construed as one with the Merchant Shipping Act, 1894, and "passenger steamer" shall mean a steamer which carries more than 12 passengers, and "wireless telegraphy inspector" means an officer appointed under sec. 20 of the Merchant Shipping (Convention) Act, 1914, for the purpose therein mentioned.

## Re-organization of British Columbia Pilotage Authorities.

The pilotage districts and pilotage commissions of Vancouver, Nanaimo and Victoria-Esquimalt, have been abolished and the Pilotage District of British Columbia have been established in charge of Commander B. L. Johnston, D.S.O., as Superintendent, British Columbia Pilotage Authority. The Pilotage District of New Westminster has not been changed, and is still in charge of a commission.

Order in Council—The following order no. 1,876, was passed at Ottawa Sept. 10, 1919:—The Deputy Governor General in council, on the recommendation of the acting Minister of Marine, and under the provisions of the Canada Shipping Act, chap. 113, Revised Statutes of Canada, 1906, sec. 416, is pleased to order as follows:

The orders in council of Feb. 6, 1904; April 15, 1879, and Feb. 20, 1880; fixing the limits of the pilotage districts of Vancouver, Nanaimo, and Victoria-Esquimalt, are hereby cancelled.

A pilotage district, to be called to Pilotage District of British Columbia, is hereby established, with limits from the International Boundary, between Canada and the United States on the south, to the International Boundary between Alaska and Canada on the north, excepting thereout and therefrom the waters of the Pilotage District of New Westminster, as established by order in council of Feb. 6, 1904.

The Deputy Governor General in council, under the provisions of sec. 430 of the said act, is hereby further pleased to order that the payment of pilotage dues in the said Pilotage District of British Columbia shall be compulsory.

The Deputy Governor General in council, under the provisions of sec. 432 of the said act, as amended by the Statutes of 1919, chap. 41, hereby appoints the Minister of Marine, the pilotage authority for the said Pilotage District of British Columbia.

The above provisions shall become and be effective on and after Jan. 1, 1920.

Notice to Mariners—The Marine Department issued the following notice, Dec. 2, 1919:—Pilotage stations at Vancouver and Nanaimo will be discontinued as from midnight, Dec. 31, 1919. A pilot may join a ship before it reaches British Columbia waters, on request, and by the ship paying in addition to the regular pilotage dues, the pilot's transportation and living expenses.

PILOTAGE DUES shall be the same for vessels propelled by sails, steam or in tow, other than scows.

To or from Quarantine, Royal Roads or Brotchie Ledge, into Victoria, or vice versa—50c a ft. draft, and ½c a ton net registered tonnage to a maximum of 3,000 tons net registered tonnage. Esquimalt and the inner harbor of Victoria shall be deemed to be part of the port of Victoria.

To or from Quarantine, Royal Roads or Brotchie Ledge, into any ports or ports (other than Victoria and ports on the Fraser River, including New Westminster) as far as Union Bay or Comox, or vice versa—$2 a ft. draft, and 1c a ton net registered tonnage.

On entering or leaving any port in the Pilotage District of British Columbia shall be $2 a ft. draft, and 1c a ton net registered tonnage, but vessels calling at more than one port on the same voyage shall pay only $1 a ft. draft and 1c a ton net registered tonnage on entering the second or subsequent ports, provided such port is not Victoria. Chemainus and Boat Harbor shall be deemed to be part of the port of Ladysmith.

In case of ships registered elsewhere than in Canada, engaged exclusively in the coastal trade between any port or ports in British Columbia and any Pacific port in the U.S., including Alaska, the following pilotage charges shall be paid:—

Victoria:—½c a ton net registered tonnage, if over 1,000 tons, to a maximum of 2,000 tons net registered tonnage; movages free, if pilots are not used.

In all other ports—½c a ton net registered tonnage, if not exceeding 1,000 tons net registered tonnage; 1½c a ton net registered tonnage, if over 1,000 tons net registered tonnage; 1½c a ton net registered tonnage, on every scow; movdues shall be paid both in and out of each and any port.

MOVAGES—(a) In the port of Vancouver: (1) in Burrard Inlet, between first and second narrows, $10 a move; (2) in Burrard Inlet from any place below second narrows to any lace above second narrows or vice versa; $15 a move; (4) from False Creek to any place in Burrard Inlet above second narrows, or vice versa, $30 a move.

(b) In the port of Ladysmith $15 a move.

(c) In all other ports not already specified, $10 a move.

The charges for the services of a pilot shall be $10 while compasses are being adjusted, $15 for trial trips, and $20 for trial trips if compasses are being adjusted at the same time.

While a pilot is on board, a special rate of $30 a day or fraction of a day, shall be payable, in addition to any other pilotage dues, on any vessel proceeding to ports north of Comox to the Alaska boundary, or to ports on the west coast of Vancouver Island or Queen Charlotte Islands.

For determining the pilotage dues payable under the preceding sections, it shall be understood that they are to be calculated on the draft, or on the net registered tonnage, of the vessel, or on both, as provided; any portion of a foot not exceeding 6 ins. shall be paid for as half a foot and any portion of a foot exceeding 6 ins. shall be paid for as 1 ft.

Appointment of Superintendent—The Dominion Civil Service Commission, in August, 1919, invited applications as follows:—A Superintendent for the British Columbia Pilotage Authority, with headquarters at Victoria, B.C., Marine Department, at an initial salary of $3,060 a year. Candidates must hold a master mariner's certificate, and must have been actually in charge of a seagoing or coasting passenger ship for at least one year. They must be thoroughly familiar with the work of the masters, seamen, and pilotage branch, and must have administrative ability. Preference will be given to residents of British Columbia.

We are officially advised that Commander B. L. Johnston, D.S.O., has been appointed to the position. He was at one time captain of the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert, and was a pilot at Vancouver, for a number of years, except from Aug. 14 to June, 1919, when he was on war service.

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C. W. Morse, President, United States Steamship Co., suggests a federal ship loan act to provide capital to enable the U. S. merchant marine to maintain the advantage given it by the war and to keep the U. S. flag on the seas as a powerful competitor for a fair share of the world's trade.

## Grain Shipped From Port Arthur and Fort William, Ont.

The following table shows the bushels of each kind of grain shipped from Fort William and Port Arthur, Ont., in Canadian and U.S. ships to Canadian and U.S. ports, from Sept. 1 to Dec. 12, 1919:

| | Canadian ships | U.S. ships | Total | Canadian ports | U.S. ports | Total | Same period 1918 |
|---|---|---|---|---|---|---|---|
| Wheat | 52,257,608-30 | 645,275-20 | 52,902,883-50 | 51,585,497-20 | 1,317,386-30 | 52,902,883-50 | 50,571,281-30 |
| Oats | 7,706,052-21 | 1,439,123-14 | 9,145,176-01 | 7,041,010-03 | 2,104,165-32 | 9,145,176-01 | ..... |
| Barley | 3,273,702-13 | 403,285-52 | 3,676,987-45 | 3,273,702-13 | 403,285-32 | 3,676,987-45 | 373,202-31 |
| Flax | 223,158-42 | 96,011-48 | 319,170-34 | 122,760-50 | 196,409-40 | 319,170-34 | 546,140-45 |
| Rye | 500,327-30 | ..... | 500,327-30 | 500,327-30 | ..... | 500,327-30 | 106,474-54 |
| Mixed | 4,011,661-00 | ..... | 4,011,661-00 | 4,011,661-00 | ..... | 4,011,661-00 | ..... |
| Screenings | 8,957-00 | 13,197-00 | 22,154-00 | ..... | 22,154-00 | 22,154-00 | 8,152-18 |

# Canadian Merchant Shipping Losses During the War.

The following particulars have been compiled from a return "Merchant Shipping Losses," prepared by the British Admiralty, and presented to the British House of Commons recently. They show the names and tonnages of Canadian registered merchant ships which were destroyed or captured by the enemy during the war, together with the approximate places of capture, the means of destruction, when destroyed, and the number of lives lost. Where the name of the ship is followed by the letter "(s)," it was a sailing ship:

1914

Dec. 2.—Drummuir (s), 1,800 gross tons) owned by Ship Drummuir Co., Victoria, B.C., captured and sunk by bombs by the s.s. Leipzig, near Cape Horn.

1915

May 26.—S.s. Morwenna, 1,414 gross tons, owned by Ardeola Steamship Co., Liverpool, Eng., and chartered to Dominion Coal Co., Sydney, N.S., captured and sunk by torpedo by a submarine near Fastnet; one life lost.

July 1.—L. C. Tower (s), 518 gross tons, captured by submarine and set on fire near Fastnet.

Aug. 13.—Royal Edward, 11,117 gross tons, owned by Cunard Steamship Co., and owned formerly by Canadian Northern Steamships Ltd., torpedoed and sunk without warning by submarine near Kandeliusa; 132 lives lost.

Aug. 4.—S.s. Midland Queen, 1,993 gross tons, owned by Midland Navigation Co., Midland, Ont., captured and sunk by submarine gun fire near Fastnet.

Sept. 28.—S.s. H. C. Henry, 4,219 gross tons, owned by Steamer H. C. Henry, Vancouver, B.C., captured and sunk by submarine gun fire near Cape Matapan, Mediterranean Sea.

1916

Feb. 27.—S.s. Empress of Fort William, 2,181 gross tons, owned by Canada Steamship Lines, sunk by mine near Dover.

Mar. 27.—S.s. Empress of Midland, 2,224 gross tons, owned by Canada Steamship Lines, sunk by mine near Kentish Knock.

May 13.—S.s. Eretria, 63,464 gross tons, owned by Steamship Eretria Co. Ltd. (Battle Line), St. John, N.B., sunk by mine near I'le d'Yeu.

Dec. 2.—S.s. Palacine, 3,268 gross tons, captured by submarine and sunk by bombs near Ushant.

Dec. 6.—Duchess of Cornwall (s), 152 gross tons, owned by R. Moulton Ltd., St. John's, Nfld., captured by s.s. Mowe, and crew made prisoners; fate of vessel unknown.

Dec. 24.—Harry W. Adams ((s), 127 gross tons, owned by H. W. Adams, Lunenberg, N.S., captured and sunk by submarine gun fire near Cape Villana.

Dec. 30.—Jean (s), 215 gross tons, owned by T. DesBrisay, Bathurst, N.B., captured and converted into a raiding vessel by s.s. Mowe, near St. Paul Rocks; fate of vessel unknown.

1917

Jan. 19.—Lillian H. (s), 467 gross tons, owned by Lillian H. Ship Co., Fox River, N.S., captured by submarine and sunk by bombs near Old Head of Kinsale.

Jan. 28.—Perce (s), 364 gross tons, owned by Robin Jones & Whitman Ltd., Halifax, N.S., captured by s.s. Seeadler and sunk by gun fire near St. Paul Rocks.

Jan. 31.—S.s. Dundee, 2,278 gross tons, owned by Canada Steamship Lines, sunk by submarine torpedo, without warning, near St. Ives Head; one life lost.

Feb. 16.—Mayola (s), 146 gross tons, owned by T. DesBrisay, Bathurst, N.B., captured by submarine and sunk by bomb near Cape St. Vincent.

Feb. 26.—British Yeoman, 1,953 gross tons, owned by Ship British Yeoman Ltd., Victoria, B.C., captured by s.s. Seeadler near St. Paul Rocks.

Mar. 10.—James Burton Cook (s), 133 gross tons, captured by submarine and sunk by gun fire near Malaga.

Mar. 11.—Kwasind, formerly Turret Belle, 2,211 gross tons, owned by the Arctic Steamship Co., Quebec, Que. sunk by mine near Southwold.

Apr. 13.—S.s. Strathcona, 1,881 gross tons, owned by Canada Steamship Lines Ltd., captured by submarine and sunk by bomb near Ronaldshay, nine lives lost and master, chief and third engineers made prisoners.

Apr. 16.—Victoria (s), 165 gross tons, captured by submarine and sunk by bombs near Beachy Head.

Apr. 19.—Thomas (s), 132 gross tons, captured by submarine and sunk by bombs near Cape St. Vincent.

Apr. 22.—S.s. Neepawah, 1,799 gross tons, owned by Canada Steamship Lines, captured by submarine and sunk by bombs near Bishop Rock.

Apr. 25.—Invermay (s), 1,471 gross tons, captured by submarine and sunk by bombs near Eagle Island.

May 1.—S.s. C. A. Jaques, 2,105 gross tons, owned by Canada Steamship Lines, sunk by submarine torpedo, without warning, near Boulogne; three lives lost.

May 14.—Carnmoney (s), 1,299 gross tons, captured by submarine and sunk by bombs hear Fastnet.

May 16.—Dorothy Duff (s), 186 gross tons, captured by submarine and sunk by bomb near Cape Culena.

May 24.—McClure (s), 220 gross tons, captured by submarine and sunk by bombs near Cape Carbonara.

June 10.—S.s. Scottish Hero, 2,205 gross tons, owned by Hero Steamship Co., Halifax, N.S., sunk by submarine gun fire, one life lost.

July 21.—Willena Gertrude (s), 317 gross tons, captured by submarine and sunk by bombs near Azores.

Sept. 29.—Percy B. (s), 330 gross tons, sunk by submarine gun fire near Cape Villana.

Nov. 5.—Hilda R. (s), 100 gross tons, captured by submarine and sunk by bombs near Cape St. Mary.

Dec. 11.—S.s. D. A. Gordon, 2,301 gross tons, owned by Canada Steamship Lines sunk by submarine torpedo, without warning, near Cape de la Huertas, one life lost.

1918.

Jan. 10.—W. C. McKay (s), 145 gross tons, attacked by submarine off the Azores; fate unknown; 6 lives lost.

Mar. 15.—S.s. Armonia, 5,226 gross tons, owned by Canada Steamship Lines, sunk by torpedo, without warning, near Porquerolles Island, 7 lives lost.

May 16.—S.s. Tagona, 2,004 gross tons, owned by Canada Steamship Lines, sunk by torpedo, without warning, near Trevose Head, 8 lives lost.

May 24.—Ruth Hickman (s), 417 gross tons, captured by submarine and sunk by bombs near Azores.

Aug. 2.—Motor ship Dornfontein, 766 gross tons, captured by submarine and burnt near Brier Island, N.S.

Aug. 5.—S.s. Freshfield, 3,445 gross tons, owned by R. L. Smith, Montreal, sunk by torpedo, without warning, near Cape Colonne, Italy, 3 lives lost.

Aug. 5.—Luz Blanca, 4,868 gross tons, owned by Imperial Oil Ltd., sunk by torpedo, without warning, near Halifax, N. S., 2 lives lost.

Sept. 16.—S.s. Acadian, 2,305 gross tons, owned by Canada Steamship Lines Ltd., sunk by torpedo without warning near Trevose Head, 25 lives lost.

Oct. 4.—Industrial (s), captured by submarine and sunk by bombs near Nantucket Island, N.Y.

The above particulars show a total of 43 vessels, of 74,323 gross tons, and 199 lives lost. The list does not include a number of Canadian vessels, and vessels engaged almost solely in the Canadian trade, the majority of which were on the British register, and which were destroyed by the enemy.

In addition to the foregoing, the following fishing boats were captured by the enemy during a sporadic raid on the Canadian Atlantic coast in Aug., 1918. All were sailing boats, except the Triumph, which was captured and converted into a raider. The following were captured and destroyed by bombs:—C. M. Walters, 107 gross tons; E. B. Walters, 107 gross tons; E. B. Walters, 98 tons; Elsie Porter, 136 tons; Gloaming, 100 tons; Lucille M. Schnare, 121 tons; Nelson A, 72 tons; Pasadena, 91 tons; Potentate, 136 tons; Uda A. Saunders, 125 tons; Verna D. Adams, 132 tons. The following were captured but not sunk:—Clayton W. Walters, 80 tons; Marion Adams, 99 tons. The s.s. Triumph, 239 gross tons, was, as mentioned, captured and converted into a raider.

These figures show a total of 13 boats and 1,536 gross tons; no lives were lost.

## United States Shipbuilding and Shipping Notes.

Chairman Payne estimates that marine and shipyard strikes during 1919 cost the U. S. Shipping Board $37,000,000.

The U.S. Shipping Board's chairman is reported to have stated Dec. 12, that its construction division had delivered 5,818,500 d.w. tons of ships up to Dec. 1 and that this would be increased to 6,000,000 tons by Dec. 31, 1919.

The U.S. National Marine League states that the U.S. merchant marine has expanded from 4 ships in deep seas commerce before the war, to a fleet of 9,733,000 tons in ocean service. The league also states that in addition U.S. Great Lakes shipping measures 2,000,000 tons, giving a total of 11,773,000 tons against Great Britain's 18,000,000 tons.

The U. S. Shipping Board has announced that, in order to coordinate its labor policy and bring about a more consistent method of dealing with labor problems, all questions of labor policy affecting the construction, repair, operation, loading and unloading of ships and marine equipment, will hereafter be handled, subject to the board's direction, through the Division of Industrial Relations of the Shipping Board at Washington, D.C. Darragh de Lancey, heretofore Director of Marine and Dock Industrial Relations Division, has been appointed Director of Division of Industrial Relations.

# Winter Moorings of Canadian Steamships.

Following is a list of Canadian steamships, and the ports at which they have been berthed for the winter, of which Canadian Railway and Marine World has been advised.

Algoma Central Steamships Line, Sault Ste. Marie, Ont. — Steamships Agawa, Goderich, Ont.; J. Frater Taylor, Port McNicoll, Ont.; Home Smith, Valcartier, Midland, Ont.; W. C. Franz, Collingwood, Ont.

Canada Atlantic Transit Co., Montreal —Steamships Arthur Orr, Buffalo, N.Y.; Kearsarge, Chicago, Ill.

Canada Steamship Lines Ltd.—Freight s.s. Toiler, Montreal; T. P. Phelan, Seguin and Brookdale, Kingston, Ont.; Fairfax, Wyoming, Omaha, Nipigon, City of Hamilton, City of Ottawa, Belleville, and Home Rule, Toronto; Bickerdike, Hamilton, Ont.; J. H. G. Hagarty, E. B. Osler, W. D. Matthews, Midland King and Martian, Goderich, Ont.; Maplegrove, Port Dalhousie, Ont.; B. L. Pennington, Rickarton, J. R. Binning, and Isabel Reed, Port Colborne, Ont.; W. Grant Morden, Midland Prince and Collingwood, Port McNicoll, Ont.; Stadacona, Port Huron, Mich.; Emperor, Haddington and Cadillac, Fort William, Ont.; Sarnian and Sir Trevor Dawson, Buffalo, N.Y.

Passenger Steamships — Longueuil, Louis Phillippe, Montreal, Murray Bay, Pierrepont, Quebec, Rapids King, Rapids Prince, Rapids Queen, Rochester, Saguenay, Syracuse, Ste. Irenee, Tadousac, Three Rivers, Sorel, Que.; America, Brockville, Ramona, St. Lawrence, Varuna, Kingston, Ont.; Cayuga, Chippewa, Corona, Kingston, Macassa, Modjeska, Toronto, White Star, Toronto, Ont.

Canadian Pacific Car and Passenger Transfer Co., Prescott, Ont.—S.s. Charles Lyon, Prescott, Ont.

Canadian Pacific Ry., British Columbia Lake and River Service—Steamships, Kokanee and Ymir, Nelson, B.C.; Bonnington, Kootenay, and tug Columbia, Nakusp, B.C.; s.s. Okanagan, and tugs Castlegar and York, Okanagan Landing, B.C.

Canadian Pacific Ry., Great Lakes Service—Steamships, Alberta, Assiniboia, Athabasca, Keewatin and Manitoba, Port McNicoll, Ont.

Canadian Towing and Wrecking Co., Port Arthur, Ont.—S.s. Vinmount, Collingwood, Ont.; steam tugs, A. B. Conmee, A. F. Bowman and James Whalen, Sarnia, Ont.; derrick barge Empire, and barge Coteau, Port Arthur, Ont.

Crystal Stream Steamship Co., St. John, N.B.—Steamships D. J. Purdy and Majestic, Indiantown, N.B., for general repairs.

Davidson and Smith Elevator Co., Port Arthur, Ont.—S.s. Robert L. Fryer, Port Arthur, Ont.

Donnelly Salvage and Wrecking Co., Kingston, Ont. — Steamships Cornwall, Frontenac, Harriet D., and William Johnston, Kingston, Ont.

George Hall Coal Co. of Canada—Montreal—Steamships, Fred Mercur, John Rugee, Senator Derbyshire; barges, A.D., Katie and Zapotec; steam tug, Margaret A. Hackett, Montreal; steam tug, J. H. Hackett, Quebec; steamships, Compton, James W. Follette, John B. Ketchum, Robert R. Rhodes, and Rockferry; barges, Cuba, F. D. Ewen, Gladys; steam tug, Florence, Ogdensburg, N.Y.

Gulf of St. Lawrence Shipping and Trading Co., Quebec, Que.—S.s. Guide, Louise Basin, Quebec; s.s. Labrador, Murray Bay, Que.; s.s. Lady Evelyn, Pictou, N.S.

Hudson's Bay Co., Winnipeg—S.s. Fort York, Port Nelson, Man.; s.s. Inenew and motor ship Fort Churchill, Moose Factory, Man.; motor ship Nannuk, Lake Harbor; s.s. Mackenzie River, Fort Smith, Alta.; motor ship Fort McMurray, near McMurray, Alta.; s.s. Athabasca River, Peace River Crossing, Alta.; s.s. Peace River, Fort Vermilion, Alta.; s.s. Port Simpson and motor ship Taltahn, Port Simpson, B.C.; motor ship Fort McPherson, Herschel Island.

Huntsville, Lake of Bays and Lake Simcoe Navigation Co., Huntsville, Ont. —Steamships, Algonquin, Phoenix and Ramona, Huntsville, Ont.; Iroquois, Minota, Mohawk Belle, Portage, Ont.

Imperial Oil Ltd., Toronto—Steamships, Iocolite, Iocoma and Imperial and barge 41, Sarnia, Ont.

Lake Erie Navigation Co., Walkerville, Ont.—S.s. Marquette and Bessemer No. 1, Conneaut Harbor, Ohio.

Marquette and Bessemer Dock and Navigation Co., Walkerville, Ont.—S.s. Marquette and Bessemer No. 2, Conneaut Harbor, Ohio.

Newcastle Steamboat Co., Newcastle, N.B.—S.s. Max Aitken, Chatham, N.B.

Niagara, St. Catharines and Toronto Navigation Co., St. Catharines, Ont.— Steamships Dalhousie City, and Garden City, Port Dalhousie, Ont.

North Bay and French River Navigation Co., North Bay, Ont.—S.s. Northern Belle, North Bay, Ont.

Northern Navigation Co., Sarnia, Ont. —Steamships, Huronic, Noronic, Thousand Islander and Waubic, Sarnia, Ont.; Hamonic, Collingwood, Ont., for wheel repairs.

Ontario Car Ferry Co., Montreal—S.s. Ontario No. 2, Cobourg, Ont. The car ferry steamship Ontario No. 1 operates throughout the winter.

Ottawa Transportation Co., Ottawa, Ont. — Steamships, Dolphin, Florence, Hall, Harris, Ottawan, Scotsman and Sir Hector, Hull, Que.

Pembroke Transportation Co., Pembroke, Ont.—S.s. Oiseau, Pembroke, Ont.

Prescott and Ogdensburg Ferry Co., Prescott, Ont.—Steamships, Ferdinand and Miss Vandenburg, Prescott, Ont.

J. F. Sowards, Kingston, Ont.—Steamships, H. N. Jex, Jeska and Shanly, Kingston, Ont.

Sparrow Lake Steamer Line, Sparrow Lake, Ont.—S.s. Glympse, Port Stanton, Ont.

Toronto, Hamilton and Buffalo Navigation Co., Hamilton, Ont.—S.s. Maitland No. 1, Ashtabula, Ohio.

Webster Steamship Co., Montreal— Steamships, Colin W., Eric W. and Richard W., Montreal; Howard W., Marian W., and Stuart W., Quebec, Que.

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U. S. Vessels Passed Through the Welland Canal—During 1919, 234 steamships built at U.S. shipyards on the Great Lakes, as well as 46 steam tugs, passed through the Welland Canal on their way to the sea. Of these, 10 took on cargo at Montreal for the United Kingdom, 10 took cargo for Mediterranean ports, and the balance took coastwise cargoes. In their passage from the Great Lakes to Montreal, 70,000 tons of coal were taken down.

## Steamship Inspectors for Quebec and Vancouver.

The Civil Service Commission at Ottawa gave notice early in December that applications would be received for the appointments of two steamship inspectors, one for the port of Vancouver and the other for the port of Quebec, to act in the dual capacity of inspector of boilers and machinery and of hulls and equipment, at an initial salary of $2,700 a year, which will be increased on recommendation for efficient service at the rate of $180 a year until a maximum of $3,240 has been reached. Candidates must have education equivalent to graduation in engineering from a technical school of recognized standing; at least 12 years of experience in the design, construction, maintenance or operation of ships, marine engines and boilers; thorough knowledge of the theory and the practice of marine engineering and ship construction; ability to make clear and concise reports on inspections and to make working drawings, specifications, and estimates for proposed work; tact and good judgment.

The successful candidate will be required to perform the following duties: To inspect the boilers and machinery and hulls and equipment of steamships during construction, and, as required by law, to determine whether they are sufficient for the service intended and in good condition; to examine plans of ships and their equipment, marine machinery and boilers, submitted for the purpose of determining by calculations of the strength of the various parts whether they can receive approval; to advise builders, owners, and others concerned in the matter of construction of ships and their machinery and the repairs required to keep the same in efficient condition; when satisfied as regards the sufficiency of ships, their boilers and machinery, and the laws as regards certificated officers, etc., has been complied with, to issue a statutory certificate of inspection, to examine candidates for marine engineer certificates; to act as a member of a board of steamship inspection occasionally as required; to investigate and report on accidents and breakdowns happening to ships, their boilers and machinery; to supervise and report on repairs to government ships, their boilers and machinery, and to perform other related work as required. Candidates should be not more than 40 years of age.

An examination will be held in connection with the filling of this position, and candidates will be notified later of the date and place of examination. Preference will be given to residents of the provinces of British Columbia and Quebec respectively.

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The Gulf of St. Lawrence Shipping and Trading Co.'s steamship services, some details of which were given in our last issue, will probably be extended considerably during this year. It is hoped to operate 7 or 8 steamships, 2 of which will be in service between Montreal, Prince Edward Island and St. John's, Nfld.; 2, or possibly 3, on the north shore of the Gulf of St. Lawrence; one on the south shore between Montreal and Paspebiac; one between Pictou, N.S., and the Magdalen Islands, and probably 2 between Pictou, N.S., Prince Edward Island and Cape Breton ports.

## Atlantic and Pacific Ocean Marine.

The Leyland Line s.s. Mercian, which sailed from Boston, Mass., Dec. 5, for Manchester, Eng., put into St. John's, Nfld., Dec. 12, with a fire in one of her holds.

The Red Line s.s. Lancastrian arrived at Halifax, N.S., Dec. 18, from Antwerp, Belgium, with fire in her no. 1 hold, among chemicals. The crew had been fighting the fire for four days.

The British s.s. Manxman, which left Portland, Me., Nov. 30, is reported to have foundered in mid ocean, with a loss of 43 of her crew, the balance of 16, being picked up by the British s.s. British Isles, and taken to New York.

Canadian Pacific Ocean Services' s.s. Empress of Asia was docked at Wallace Shipyards, North Vancouver, B.C., recently, for boiler repairs and other work. The s.s. Empress of Japan has had her boilers overhauled at the same yard.

The Cunard Line s.s. Carmania, which collided with another steamship, Dec. 14, when approaching Halifax, N.S., underwent temporary repairs by Halifax Shipyards Ltd. It is said that she will be thoroughly examined and overhauled in Great Britain.

Canadian Pacific Ocean Services' s.s. Empress of Russia, was docked at the B.C. Marine Railway Co.'s yards, Vancouver, B.C., recently, for the fitting up of coolie accommodation for the transportation of coolie labor back to China, and also underwent extensive repairs.

Elder Dempster and Co.'s s.s. Bassa, which stranded on a shoal in the St. Lawrence River, near Montreal, Nov. 28, through the failure of the steering gear, was released Dec. 7, and taken to Canadian Vickers' dry dock for examination and repair. She sailed again from Montreal, Dec. 10.

The Union Steamship Co. of New Zealand, which operates a steamship service between Canada and Australasia, is reported to be adding another passenger steamship to its fleet for the Canadian service. During the war some of the company's vessels were lost and the cargo steamships Waihemo, Waikawa and Wairuna, of approximately 9,000 tons each, were bought to take their places.

The Greek s.s. Platea, which ran ashore on Sable Island, early in November, and which was believed to be a total loss, will probably be salved. The ocean going tug Cruiser was working on the vessel early in December, and succeeded in moving her about 100 ft. nearer to deep water. It is anticipated that provided the weather abates somewhat she may be towed into deep water and repaired sufficiently to enable her to be docked for complete examination.

Furness Withy and Co.'s s.s. Messina, which sailed from St. John, N.B., Dec. 5, for Antwerp, Belgium, was reported by wireless, Dec. 12, to have been abandoned in a sinking condition about 430 miles from Newfoundland. She was a first class cargo steamship, of about 6,000 d.w. tons, and it is presumed that she encountered heavy weather, which was prevalent in the neighborhood during December. It is reported that the crew were saved by another steamship which had been standing by.

The Canadian Transatlantic Co.'s s.s. Bilbster, which was scheduled to sail from St. John, N.B., under Canada Steamship Lines' schedule, as general agents for the owners, Dec. 6, was requisitioned by the British Ministry of Shipping, to carry lumber to the United Kingdom. It is said that a protest was made, on the ground that so much lumber is being shipped that the docks are already badly congested. The ship was to have been utilized in shipping Canadian live stock to France, it being barred from England.

The wooden s.s. Colmar, which was built by Three Rivers Shipyards, Ltd., Three Rivers, Que., for the French Government, and which sailed from Quebec, Nov. 26, for Europe, sprang a leak about 60 miles from Halifax, N.S., Dec. 1, and after experiencing heavy weather, was abandoned by the crew, Dec. 12, and eventually sank. The crew took to the boats and set out for Halifax, in two sections, the first lot arriving there after considerable hardship, the second being rescued by the s.s. Mississippi and landed at St. John, N.B.

## Maritime Provinces and Newfoundland.

The Red Cross Line's s.s. Rosalind has been practically rebuilt at New York, subsequent to running aground in Sept., 1919, while en route from Halifax to New York. In addition to the rearrangement of her interior, she has been changed to a fuel oil burner.

The three-masted schooner Barbara Macdonald, which was built by J. A. Macdonald and Co., Charlottetown, P.E.I., in October, was wrecked and became a total loss, off Cape Vine, Nfld., Dec. 16, the master, T. Whitla, being washed overboard and drowned.

The Reid Newfoundland Co.'s s.s. Ethie, running between Curling, Nfld., and Labrador, went ashore during a storm, Dec. 10. The passengers and crew, numbering 92 persons, were taken ashore by a line which was landed from the vessel by a dog.

A press dispatch from Sydney, N.S., states that preliminary work has been commenced there in connection with the proposed government harbor terminal work. Soundings are said to have been taken, but it is stated that no work of a definite nature will be undertaken until the spring.

The Valley Steamship C.o's s.s. Granville III., which was built recently at Meteghan River, N.S., underwent her trial trips Dec. 8, where she developed 12 knots an hour over a measured mile. Her dimensions are: length, overall, 100 ft.; beam, 22.6 ft.; depth of hold, 9 ft. She is to be operated on the St. John River.

The construction of a canal through the Chignecto Isthmus, between Nova Scotia and New Brunswick, is again being agitated. For several years a short cut to the ocean at this point has been under consideration, either by means of a canal or a ship railway. An attempt to carry out the latter plan was made some years ago, but ended in failure.

The United States Shipping Board's steamships Lake Elmsdale and Lake Gatewood, were driven ashore on the Cape Breton, N.S., coast, during a snow storm, Dec. 10, the former at Cape Blue, and the latter at Port Hood Island. The Lake Elmsdale was bound for Halifax to load cargo for Santiago, Cuba. Both ships were built recently at Cleveland, Ohio.

The s.s. David C., which was built by Burns and Kelleher, Bayside, N.S., early in 1919, has been chartered by Job Bros., of Nefoundland, and has had her name changed to Edmund Donald. She loaded cargo recently at Sydney, N.S., for Wabano, Nfld. She is in charge of Capt. A. E. Seaman, formerly of the s.s. Stella Maris, with L. S. Freeman as chief engineer.

The steam tug Alert, owned by W. N. McDonald, Sydney, N.S., was reported to be ashore near Canso, N.S., early in December, after having collided with the U.S. Shipping Board's s.s. Lake Elmsdale, in connection with the salving of which she had been working for some time. The Alert's stern was badly battered and temporary alterations were carried out on this spot.

The s.s. E. D. Kingsley, owned by the Kingsley Navigation Co., Vancouver, B.C., and built recently at Fort William, Ont., by Canadian Car and Foundry Co., ran ashore at Whitehead Harbor, Dec. 11, whilst en route from Montreal to Halifax, N.S., in ballast. She was refloated the following day, and proceeded under her own steam. She is on her way to British Columbia via Panama Canal.

The s.s. Dream, which was purchased by Capt. C. Taylor, St. John, N.B., recently, has been remodelled and a new boiler installed, with the intention of operating her on the St. John River in the suburban passenger trade next summer. She was built at Newark, N.J., in 1881, and is screw driven by engine of 12 n.h.p. Her dimensions are: length, 63.9 ft.; breadth, 14.1 ft.; depth, 5 ft.; tonnage, 45 gross, 30 registered.

A deputation from St. John, N.B., interviewed members of the Dominion Government, Dec. 7, and urged the desirability of at once proceeding with a comprehensive scheme of harbor improvements at the port. The work which the deputation dealt with, is apart from the developments and improvements now under way in Courtenay Bay. It is stated that the dock accommodation at St. John is utterly inadequate, and that ships going to the port are inordinately delayed.

The Dominion Government s.s. Aranmore ran ashore at Cape Whipple, Labrador, Dec. 3. The Dominion Government's s.s. Montcalm, which was sent to her assistance, reported by wireless that she was unable to get within 2 miles of her on account of the heavy sea. She had been abandoned by the crew and was reported to be pounding heavily. The Arranmore was carrying winter supplies for lighthouses and wireless telegraph stations along the shores of the Strait of Belle Isle.

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The Louisburg Drydock & Shipbuilding Co. Ltd., the incorporation of which was announced in a recent issue, has applied to the Dominion Public Works Department for a subsidy for a second class drydock at the mouth of Garrets Brook, in Louisburg harbor, N.S., between the Dominion Coal Co.'s shipping piers and the old town. The dock is estimated to cost $3,060,000. The dimensions proposed are: length, 650 ft.; width, 85 ft.; depth of water over sill at high water, ordinary spring tides, 30 ft.

Enemy Vessels Handed to the Allies—It was announced in the British House of Commons, Dec. 11, that up to Dec. 7, there had been delivered to the allied powers, 355 enemy ships with a gross tonnage of 1,788,913 tons, of which 203 ships of 1,200,000 tons were in British hands.

## Ontario and the Great Lakes.

The Welland canal was officially closed for the winter, Dec. 14.

It having been decided that Bear Point, Lake Erie, is in Canadian, and not U.S. waters, a lightship has been placed there by the Dominion Government.

Canada Steamship Lines s.s. Chicora, which sank at her moorings at Toronto, about the end of October, was raised Dec. 6 by the J. E. Russell Wrecking Co., on behalf of the underwriters.

Canada Steamship Lines' s.s. Sir Trevor Dawson, left the head of the lakes Dec. 7, with 622,000 bush. of oats for Buffalo, N.Y. This, it is stated, is the largest cargo of oats ever shipped to Buffalo.

The Public Works Department is reported to have awarded a contract to N. B. Horton, Owen Sound, Ont., for the construction of a concrete dock there, on the east side of the C.P.R. property at the foot of 11th Street East.

Owing to the regulations requiring all persons entering the United States from Ontario to be vaccinated, it is reported that the ferry service between Sault Ste. Marine, Ont., and Sault Ste. Marie, Mich., has been suspended for the winter, and that no attempt will be made to keep the water route clear of ice.

The U.S. Lake survey reports the stages of the Great Lakes in feet above mean sea level for November as follows: Superior, 602.51; Michigan and Huron, 580.43; Erie, 572.24; Ontario, 346.11. Compared with the average November stages for the last 10 years, Superior was 0.01 ft. above; Michigan and Huron, 0.17 ft above; Erie, 0.43 ft. above; Ontario, 0.56 ft. above.

The Midland Transportation Co. has registered the s.s. Luckport, which was formerly the s.s. Magnolia, owned by Canada Steamship Lines, Ltd., and which was wrecked some time ago. She was originally built at Midland, Ont., in 1898 and is screw driven by engine of 57 n.h.p. Her dimensions are length, 126 ft.; breadth, 21.6 ft.; depth, 12 ft.; tonnage, 231 gross, 134 registered.

The Great Lakes Transportation Co.'s s.s. Glenlyon arrived at Port Arthur, Dec. 17, with general cargo, from the east. She had a rough passage, and was well encrusted with ice, the temperature during the entire trip from Sault Ste. Marie, which took five days, having varied from 35 below zero to zero. This is said to be the latest arrival at Port Arthur from the east, in any year.

The Niagara Ferry & Transportation Co. is reported to have bought the ferry steamship, Newton, in New York, where it has been used in harbor work, for operation between Fort Erie, Ont., and Buffalo, N.Y. Her dimensions are: length, 152 ft.; beam, 52 ft. She is of the side wheel driven type, with rudder at each end and two pilot houses. The hull is of steel, with upper decks and cabins.

The Ontario and Quebec Navigation Co., one of the constituent companies of Canada Steamship Lines Ltd., was given judgment with costs and interest, at a sitting of the Supreme Court, at Belleville, recently, on a claim for $65,000, against J. E. Rathbun, M. J. McFaul, F. Brennan, D. B. Christie, M. Palmatier, A. Leslie, M. Leslie, H. Dempsey, and the estate of the late J. F. Chapman. The amount was claimed on shares issued to them in connection with the absorption of the Quinte Navigation Co.

The U.S. steam tug Bison, which was built at Cleveland, Ohio, and passed through the Welland Canal and the St. Lawrence, sailed from Quebec, early in December for Halifax, N.S., in company with four other tugs, was reported at Halifax, Dec. 11, to have been lost in the Gulf of St. Lawrence, with her crew. She, however, arrived safely at Port Hastings, N.S., Dec. 12, having been out of touch with the remainder of the fleet and the shore, as she was not equipped with wireless telegraph.

## British Columbia and Pacific Coast.

The Quadra Steamship Co.'s s.s. Quadra, had her engines and boilers overhauled by Yarrows Ltd., Victoria, recently.

The Union Steamship Co.'s steamships Chemainus and Chilliwack underwent extensive overhaul by the B.C. Marine Railway Co., Vancouver, recently.

The C.P.R. s.s. Princess Alice was docked recently at Yarrows Ltd yards, Victoria, for cleaning and painting, and general overhaul, including the drawing of the tail shaft.

The Coastwise Steamship & Barge Co., Vancouver, B.C., has bought the barge Granco, from U.S. owners, and has transferred it to the Canadian register under the name of Barracouta.

The Canadian Fish & Cold Storage Co., Prince Rupert, B.C., has bought the s.s. Louisiana from U.S. owners, and has transferred it to the Canadian register with the name of Chief Legaie.

The Grand Trunk Pacific Coast Steamship Co. was reported recently to be negotiating for the purchase of the s.s. Roosevelt, owned in Seattle, Wash. After an inspection it was found that extensive alterations would be necessary, and it is improbable that the ship will be acquired.

Canadian National Rys. car ferry steamship Canora was thoroughly overhauled by Yarrows, Ltd., Victoria, B.C., recently, and resumed her trips between Port Mann and Patricia Bay, early in December. It is reported that she is to be used for the transfer of cars to and from the Ogden Point piers, Victoria.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert was laid up at Prince Rupert, Dec. 28, for her annual overhaul, and the steamship service on the route between Seattle, Vancouver, Prince Rupert and Anyox, was reduced to a weekly one, with the s.s. Prince George. The company's Queen Charlotte Islands and Stewart service is being performed by the s.s. Prince Albert, the s.s. Prince John having been taken off the route until further notice.

**Passenger Fares on Atlantic Steamships**—War time rates for passengers crossing the Atlantic remain in force, and are likely to do so for some time. The passenger business across the ocean is comparatively heavy, and the prospects for next year are rather for an increase than a decrease in the number of passages, both east and west. First class fares vary, according to the type of vessel, from $202.50 to $150; second class fares from $110 to $92.50; cabin fares on single class vessels from $100 to $90; third class fares from $67.50 to $61.25. In addition to these rates there is a war tax of $5 on those above $65; $3 on those between $40 and $65, and $1 on those from $10 to $40.

## Mainly About Marine People.

**Lionel H. Clarke**, grain merchant, Toronto, who has been Chairman, Toronto Harbor Commission, since its inception, tendered his resignation early in December, on being appointed Lieutenant-Governor of Ontario. The other commissioners passed a resolution placing on record their high appreciation of his invaluable service as chairman during the past seven years, and requested him to withdraw his resignation, and to continue to act as chairman, which he consented to do.

**John Watson Corbett**, whose appointment as Purchasing Agent, Canadian Government Merchant Marine, Ltd., Montreal, was announced in our last issue, was born there, Oct. 4, 1887, and entered transportation service in July, 1905, since when he has been, to Mar., 1908, in Superintendent's office, Canadian Northern Ry., Montreal; Apr., 1908 to Nov., 1909, in Purchasing Department, same road, Quebec, Que.; Feb., 1917 to Dec., 1918, in Purchasing Department, Imperial Munitions Board, Toronto; Jan. 1 to Oct. 31, 1919, in Purchasing Department, Canadian National Rys., Winnipeg.

**John P. Doherty**, whose appointment as Port Agent, Canadian Government Merchant Marine, Ltd., St. John, N.B., was announced in our last issue, was born at Portland, Me., Apr. 8, 1889, and entered transportation service in May, 1904, since when he has been, to Feb., 1915, chief clerk, Allan Line Steamship Co., at Quebec in the summers, and at St. John, N.B., in the winters; Feb., 1915 to May, 1918, chief clerk, Canadian Pacific Ocean Services Ltd., same places; Sept., 1918 to Nov., 1919, Travelling Freight Agent, C.P.R., St. John, N.B.

**J. W. Norcross**, President, Canada Steamship Lines, Montreal, and Mrs. Norcross, announce the engagement of their eldest daughter, Jessie Eileen, to D. H. Mapes, Jr., of New York, son of D. H. Mapes, Engineer of Buildings, C.P.R., Montreal, the marriage to take place in January.

**Hon. C. C. Ballantyne**, Minister of Marine and of Naval Service, entertained Admiral Viscount Jellicoe, and a large number of other guests, at dinner at the Country Club, near Ottawa, Dec. 4. Mrs. Ballantyne gave a dinner in Montreal for Lady Jellicoe, Dec. 9.

**J. F. Paige**, who was appointed Operating Manager, Halifax Shipyards, Ltd. recently, took over his new duties there early in December. He was formerly General Manager, Port Arthur Shipbuilding Co., Port Arthur, Ont.

**St. Lawrence River Pilotage**—A petition has been addressed to the Minister of Marine urging the abolition of compulsory payment of pilotage dues, and against the continued discrimination against ships from Ontario, which are not included in the exemptions extended by the Canada Shipping Act, sec. 477. This matter has been brought before the government several times during past years, by the Dominion Marine Association, but nothing has been done to relieve the vessels trading to St. Lawrence ports from Ontario. The Shipping Federation of Canada, which has always opposed any change in the restrictions against Ontario shipping, is now stated to favor the proposal, and it is reasonable to expect that the desired amendments will be made shortly.

# Regulations for Bunkering Ships on Atlantic and Pacific Coasts.

The Canadian Trade Commission's Fuel Section and License Department at Ottawa issued the following circulars to steamship owners recently over the signature of M. J. Cullen:—

Nov. 29, 1919. In order to facilitate the issuance of licenses for the bunkering of your boats, we would prefer, when possible, to receive your application by mail, furnishing the information required on the enclosed forms, which should be transmitted in duplicate. In addition to the information asked for on the blanks we also require to know the nature of the cargo being carried by the vessel under consideration, together with the country of origin of the same. When time will not permit of application being made by mail, telegraphic applications should contain all the information requested on the bunkering form, together with the nature of the cargo and the country of its origin.

I may inform you that it is the commission's policy to grant bunkers to boats of foreign registry sufficient only to carry them to their destinations, while Canadian owned boats may be bunkered for the round trip.

We are desirous that as much bunkering as possible should be undertaken at Sydney, N.S., on account of its proximity to the mines, and would appreciate your co-operation in having as many of your craft as possible diverted to that point for this purpose.

In order to expedite the coaling of vessels on the Eastern Maritime coast, A. L. Woods has been appointed by this commission to issue licenses for bunkering of vessels at Sydney, North Sydney, and Louisburg. Mr. Wood's headquarters are at Sydney and any request for licenses covering coaling of vessels at points under his jurisdiction should be directed to him.

Dec. 6, 1919. In further reference to our circular letter of Nov. 29, I beg to advise you of the policy now decided upon by this commission for the bunkering of vessels which becomes effective Dec. 8, at 1 a.m. Bunkers may be given boats for the following movements:

1. Vessels sailing from foreign destinations to United States ports may receive bunkers at Canadian ports, to take them to U.S. destination and return, or they may be bunkered at Canadian ports to take them to their U.S. destination and thence back direct to their foreign port.

2. Boats sailing from the U.S. to foreign destinations may be given bunkers at Canadian ports sufficient only to take them to their destination.

3. Boats sailing from Canadian ports may be bunkered with sufficient coal only to take them to destination.

4. Bunkering of boats will be governed by the available coal supply, and preference given in the following order, (a) Canadian owned boats; (b) boats flying British flag; (c) boats flying U.S. flag; (d) boats flying allied flag; (e) boats flying neutral flags; (f) boats flying other flags.

In order to preclude delay in coaling at Halifax and St. John, we are pleased to advise you of the appointments of the following officers who are authorized to grant licenses at these ports: Lieut. Alfred J. May, Customs House, Halifax, N.S.; Lieut. C. J. Mulcahey, Naval Dock Yards, St. John, N.B. When requiring permits to coal a tthese ports, please direct your requests to the above mentioned officers.

Canadian Railway and Marine World is officially advised that in addition to the officers appointed to issue bunkering licenses on the Atlantic coast, W. G. Gaunce has been authorized to grant licenses covering the bunkering of ships on the Pacific coast.

In reference to the foregoing we are advised that it was necessary to control the export of coal, under an agreement reached between the Canadian Fuel Controller and the U.S. Fuel Administration, whereby the latter arranged to let Canada have a supply of emergency coal for the urgent needs of Ontario and Quebec, provided the use of coal at the Canadian Atlantic and Pacific seaports was curtailed in certain ways. The control of exports was enforced formerly by the War Trade Board, and after its discontinuance the control was transferred by order in council to the Canadian Trade Commission. It is hoped that all restrictions on the bunkering of vessels will be removed early in 1920.

## Roger Miller & Sons Ltd. Toronto Harbor Contract.

S. W. Jacobs, M.P. for Montreal, asked several question in the House of Commons recently, which were answered by the Minister of Public Works, the questions and replies being as follows:

Q. Has an order in council been passed giving Roger Miller & Sons, Ltd., additional work on a cost plus basis over and above that originally provided? A. Yes.

Q. What was the amount provided originally to be done by Roger Miller & Sons, Ltd., on a cost plus basis, and what were the terms under which this work was to be done? A. Approximately $848,000, on basis of cost plus 7½%.

Q. What was the amount of the work under such order in council, and what were its terms? A. Approximately $2,478,250, on same basis of cost, plus 7½%.

Q. Has an appropriation yet been made covering the additional work authorized by such order in council? A. No.

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Canadian Western Steamships Ltd., has been incorporated under the British Columbia Companies Act with $2,000,000 authorized capital and office at Vancouver, B.C., to own and operate steam and sailing ships, and to carry on a general navigation and transportation business.

The Ross Navigation Co. Ltd., Pas, Man., has made application to the Interior Department for a lease of lots 25 and 29, at Sturgeon River Landing, Man., for the erection of docks, wharves, warehouses, etc. These lots have a frontage on the Sturgeon River, of 100 ft. each, with a depth of 25 and 60 ft., respectively, and were surveyed in 1917 at the mouth of the Sturgeon River, on Namen Lake, to meet requirements in connection with navigation at that point, which is the head of navigation from Pas to the northern part of Manitoba. The rental to the company will be at $10 a year for 5 years.

## Customs Requirements re Coastwise Entries and Clearances.

Canadian Railway and Marine World for Oct., 1919 contained a reference to the desires of British Columbia steamship owners for some relief from alleged unnecessarily onerous customs requirements in connection with the operation of steamships in the coasting trade. Under the present rules, it is necessary for all steamships engaged in the coasting trade to make entry and clearance at each port of call, whether carrying dutiable cargo or not, and regardless of the number of calls they may make at the same port on the same day or trip. An example of this is shown in the case of the C.P.R. s.s. Princess Patricia, a passenger steamship running the short distance between Vancouver and Nanaimo, making two round trips daily, and having to make two entries and two clearances at each port, even when not carrying any bonded or dutiable cargo. The whole question was taken up by C. H. Nicholson, Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, some months ago, and in a communication to the Dominion Marine Association, he asked that association's aid in the attempt to obtain some relief. The association has expressed itself as approving of the movement, believing the requirements are enforced for purely statistical purposes and throw a heavier burden on ship owners than is justified by the benefits received.

Information regarding the practice adopted by other countries in this regard has been collected by Frank Waterhouse and Co. of Canada Ltd., Vancouver, and from this it is gathered that in the United Kingdom there is a system of transires, which permits vessels to arrive and depart at the various ports, when not going to a foreign port and not carrying bonded cargo, without reporting at the customs house. A record is kept and reports are made from time to time as required by the Customs Department, and it is said that a similar practice obtains in the various British dominions, with the exception of Canada. In Norway, Sweden, Japan and several other countries, coastwise traders are not required to enter and clear each trip. In the United States special arrangements are made for coastwise traders, the whole area being divided into five districts, and so long as a coastwise vessel is trading within one of these customs districts, it is not required to enter or clear unless carrying bonded or dutiable cargo. When, however, it is trading between a port in one district, and a port in another district, it is necessary to enter and clear.

It is desired that the Dominion Government adopt a system of transires for the British Columbia coasting trade, to obviate the difficulty complained of.

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Australian Shipbuilding Costs—It has been officially stated that H.M.A.S. Brisbane, which was built at Cockatoo Island dockyard, Sydney, during the war, cost £776,000, against £385,000 for H.M.A.S. Sydney, and £405,000 for H.M.A.S. Melbourne, which were built in Great Britain just prior to the war. All are practically sister ships, there being very little difference in tonnage, armaments and rating. Most of the material for the Brisbane was imported, and difficult to obtain; the mechanics employed were inexperienced, and the cost of building was therefore necessarily high.

## Marine Casualties During 1918.

The report of L. A. Demers, Dominion Wreck Commissioner for the calendar year 1918, which was not printed and distributed until Dec., 1919, states that during the year 31 formal investigations and one departmental investigation were held.

During 1918 there were 226 casualties reported to the Marine Department, the tonnage of the same being 312,928, and the stated damage $1,818,895, while 402 lives were lost.

Of the casualties 180 were to coasting and sea going ships, the tonnage being 280,528, the stated damage $1,713,795, and 402 lives were lost; 46 of the casualties were to inland ships, the tonnage being 32,400, and the stated damage $105,100.

In 129 cases of casualties to coasting and sea going ships, and 24 cases of casualties to inland ships, the amount of damage is not stated; 70 of the casualties to coasting and sea going ships, made up of 27 steam and 43 sailing ships, resulted in total losses, and of this number 60 were Canadian, 2 British and 8 foreign ships.

Seven of the casualties to inland ships resulted in total losses; all were Canadian vessels.

The casualties were as follows:

| | |
|---|---|
| **Coasting and Sea Going Vessels.** | |
| Collisions | 30 |
| Founderings | 28 |
| Missing vessels | 3 |
| Miscellaneous accidents: fire, loss of sails, etc. | 20 |
| Strandings | 79 |
| Vessels sunk by submarines | 20 |
| **Inland Vessels.** | |
| Collisions | 17 |
| Founderings | 4 |
| Miscellaneous accidents | 8 |
| Strandings | 17 |

## Nova Scotia Workmen's Compensation Act Made Applicable to Seamen.

An amendment of sec. 8 of the Nova Scotia Workmen's Compensation Act comes into force Jan. 1, and provides as follows:—Owners and employers of vessels registered in Nova Scotia, or operated by an employer residing or having a place of business in Nova Scotia, shall be liable to any member of the crew who is injured by an accident arising out of and in the course of his employment.

The amount payable to an injured workman shall be an amount equal to the compensation that would be payable under the Workmen's Compensation Act if the industry were within the scope of part 1 of the act.

The employer may escape such personal liability by having the operations of the vessel brought under part 1 of that act. To do so an application to the Workmen's Compensation Board, and the payment of an assessment based upon the amount of the payroll, are necessary.

The amendment applies only to vessels operating between places in Nova Scotia and places in New Brunswick, or Prince Edward Island, or Newfoundland, or to vessels making fishing trips or voyages from ports or places in Nova Scotia.

## Courtenay Bay Development, St. John, N.B.

The St. John Dry Dock and Shipbuilding Co. made very satisfactory progress during 1919 on its two contracts for harbor works and dry dock respectively. The work consisted principally of rock excavation for the drydock and it is expected that this work will be finished by the middle of February. The excavation is being done by the ordinary methods of drilling and blasting and removal by steam shovels. The rock is loaded into 6 yd. dump cars and hauled by locomotives to the breakwater, where it is dumped over a trestle.

The 2,500 ft. breakwater extension is nearly completed, with the exception of laying the conerstone. A cofferdam is being built to unwater an area sufficiently large to excavate about 140,000 yd. of rock in the immediate entrance channel to the breakwater. This cofferdam will enclose an area of about 650 x 400 ft. The channel inside the cofferdam will be 250 ft. wide and about 500 ft. long. The excavation grade for this channel will be 32 ft. below low water which, with the 28 ft. tide, will make the extreme depth of 60 ft. at highest water.

The whole work is of very considerable magnitude and will undoubtedly prove of very great interest to engineers generally. In consideration of the extreme lead of water and the length of the cofferdam, it is probably one of the largest ever undertaken.

## Among the Express Companies.

The Canadian National Ex. Co. has opened an office at Birch River, Man., and has closed its office at Ragged Rapids, Ont.

The Dominion Ex. Co. has been relieved by the Board of Railway Commissioners, from providing a cartage service at Courtright, Ont.

The Canadian National Ex. Co. has opened an office at Entrance, Alta., and has closed its offices at Perthuis, Que., Burwash, Ont., and Ardill, Sask.

New regulations respecting the packing express shipments, went into effect during the early days of December. Under these regulations, shipments over 25 lbs. in weight must be forwarded in wooden containers or cartons bearing the box makers' certificate as to the strength and size required by the express company.

The Canadian Ex. Co. was fined $202 at Ottawa, Dec. 17, for transporting a quantity of intoxicating liquor from Montreal to Ottawa in contravention of an order in council, passed Feb. 24. On the application by counsel for the defence, a stated case was granted for the Court of Appeal. A quantity of wine was shipped from Montreal to the Ottawa Country Club, which is also in Quebec, and in the course of transit, it crossed the boundary between Quebec and Ontario.

## Telegraph, Telephone and Cable Matters.

The American Railroad Association's Telegraph and Telephone Division held its annual meetings at Chicago, Dec. 3 to 5, 1919.

G. D. Perry, General Manager, Great North Western Telegraph Co. and Mrs. Perry, returned to Toronto early in December, from a trip to the Pacific coast.

The Great North Western Telegraph Co. has opened offices at Kabina, Mattice and Ragged Rapids, and has closed its offices at Bansing, Glenorchy and Watcomb, all in Ontario.

The Marconi Wireless Telegraph Co. of Canada Ltd., has bought the office building occupied by the Montreal Stock Exchange, where it is opening a school for training wireless operators. The price paid was $17 a sq. ft.

The Marconi Wireless Telegraph Co. of Canada, will, it is reported, build a large wireless telegraph station near Vancouver, B.C., at an approximate cost of $2,000,000, to handle commercial business between Canada and the Orient, and a similar station will, of course, be built on the other side of the Pacific, most likely in Japan.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.

Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, 909 Shaughnessy Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.


# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under

Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.

Allow five words where replies are to be sent to a box number. Minimum order—$1.

Rates under other headings and for display advertisements on application.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.
Canadian Railway Club—W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.
Niagara Frontier Summer Rate Committee, James Morrison, Montreal.
Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.
Railway Association of Canada—W. M. Neal, Montreal.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Toronto Transportation Club—W. A. Gray, 257 Roxton Road, Toronto.
Transportation Club of Vancouver—H. W. Schofield, 556 Church St., Vancouver, B.C.

## Transportation Conventions in 1920

Feb. 10-12—American Wood Preserveds' Association, Chicago, Ill.
Mar. 16-18—American Railway Engineering Association, Chicago, Ill.
May—Association of Railway Claim Agents, Atlantic City, N.J.
May—International Railway Fuel Association, Chicago, Ill.
May 5-7—Air Brake Association, Chicago, Ill.
June—American Association of Freight Agents.
June 9-16—American Railroad Association's Mechanical Section, Atlantic City, N.J.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Franklin Railway Supply Co., New York, N.Y.—H. R. Stafford, Chief Engineer, who died at his home at Plainfield, N.J., Dec. 9, started work with the development of early Mallet locomotives in the United States, and with other locomotive developments. He resigned to become Mechanical Engineer, Economy Devices Corporation, and was appointed Chief Engineer, Franklin Railway Supply Co., when it took over the Economy Devices Corporation's business.

Locomotive Stoker Co., Pittsburg, Pa., advises that a mechanically fired mikado locomotive is giving stoker demonstrations on the G.T.R., between Montreal and Bromptonville, Que., the type D. duplex stoker being used.

National Steel Car Corporation Ltd., a Dominion incorporated company, has been licensed in Ontario under the Extra Provincial Corporations Act. The capital to be used in Ontario is fixed at $1,250,000 and J. S. Lovell, Toronto, is named as its attorney.

Northern Electric Co.—Edward F. Sise has resigned the Presidency and has been succeeded by Paul F. Sise, heretofore Vice President.


# Does He?

*Query No. 1*— Does a general scatter his armies over half a continent hoping that some part of the attenuated line will meet the enemy, or does he definitely locate his objective and then drive straight for it with all available forces?

*Query No. 2*— Does a salesman make a house to house canvass of a town to locate the kind of a store, factory, railroad, shipyard, hospital, contractor or professional man, that uses his goods?

THE ANSWER

—contains food for reflection by the advertising general attacking public indifference, or the salesman-in-print reaching out for his market. The intelligent application of the great PRINCIPLE involved means bigger, quicker results, and **lowered advertising cost.**

Concentration gives maximum power where it is needed; specialization in copy and media is no less effective than specialization in production and selling. These principles are working for 160,000 advertisers who are telling their own story, to their own prospects, in their own language, through their own Business Papers. If you want to use this great force in your own business, you are invited to consult, without obligation, our Advisory Service Bureau, concerning papers or markets.

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*Business Press Department A. A. C. of W.*

**Headquarters** 229 W. 42nd Street **New York**



# CRANE VALVES

# CRANE
LIMITED

HEAD OFFICE & WORKS
1280 ST. PATRICK ST
MONTREAL

**BRANCHES: Vancouver, Calgary, Winnipeg, Toronto.**

Save money by using

## The HOLD TITE NUT LOCK

*(Patented)*

THE LATEST AND LAST in a NUT LOCKING DEVICE

TWO CLAIMS are made proving the Superiority of the Hold Tite Nut Lock.

CHEAPNESS. Look at the Washer! Nothing can be made cheaper.

EFFICIENCY. We guarantee that no vibration can remove it.

WHAT MORE? NOTE THE SIMPLICITY—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

**Edward A. Robinson Co., Limited**
228 Craig St. West Montreal

THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF

## FORGINGS

SEND PRINTS FOR PRICES

CANADA
FOUNDRIES & FORGINGS, LIMITED
WELLAND, ONT

## PAGE & JONES,

*Ship Brokers and Steamship Agents,*

Cable Address: "PAJONES" Mobile.

**MOBILE, ALABAMA, U. S. A.**

All Leading Codes Used.

## Non-Sweating Railway Lamps

We manufacture
SWITCH MARKER CLASSIFICATION SEMAPHORE
to R. S. A. Specification.

**The Hiram L. Piper Company, Limited, Montreal**

*Our No. 31 Catalogue illustrates them all.*

## Buy Northern Cranes—Made in Canada

ELECTRIC CRANES
HAND CRANES
ELECTRIC HOISTS
AIR HOISTS
FOUNDRY EQUIPMENT

*Write for prices.*

**NORTHERN CRANE WORKS LIMITED**
WALKERVILLE, ONTARIO

## HOTEL CHELSEA

**Atlantic City, N.J.**

Directly on Beach Front

Open all year
Capacity 600

Sea water in all bathrooms


Department of the Naval Service.

### TENDER FOR TUGS.

SEALED TENDERS addressed to the undersigned and endorsed on the envelope "Tender for Tugs," will be received up to noon of Friday, the 23rd day of January, 1920, for the construction of three first-class single screw tugs of approximately the following leading dimensions, namely:—

| | |
|---|---|
| Lengths between perpendiculars | 75′ 0″ |
| Breadth moulded | 17′ 6″ |
| Depth moulded | 9′ 0″ |

to be delivered at Port Stanley or Kingsville, Ont.

Descriptive specifications and full particulars may be obtained on application to the undersigned.

The Department does not bind itself to accept the lowest or any tender.

G. J. DESBARATS,
Deputy Minister of the Naval Service.

Ottawa, Ont.,
December 11, 1919.

Unauthorized publication of this advertisement will not be paid for.

# Get Your Repairing Done Now

**While there is plenty of time**

Avoid the Spring Rush.
Be the Early Bird.
Be ready for work when Spring arrives.
You will be money ahead by so doing.

**We repair or renew**

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Have all your Plant overhauled and put in good shape through the winter months. It will cost you less, and be better done.

If you will need new equipment it will pay you to get our prices now, as everything may be higher in the Spring. Moreover, goods ordered early will be delivered early—that is, you will have them when you want to use them, and no vexatious delays.

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Made in Canada from steel made in Canada.
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All that its name implies. Good materials are only determined by results obtained in service. Ask about it. This is a Packing that overcomes the necessity for carrying many styles and sizes. "INTERNATIONAL" PLASTIC METALLIC conforms to all sizes and shapes of stuffing boxes.

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Marine Engines—Boilers—Tank and Plate Work
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Send us your inquiries.

***ANNOUNCEMENT*** There will be *no change* in our *policy* during 1920. As in by-gone years we will direct all our efforts to a *large volume* of business at *small margins* and a *square deal* to our patrons.

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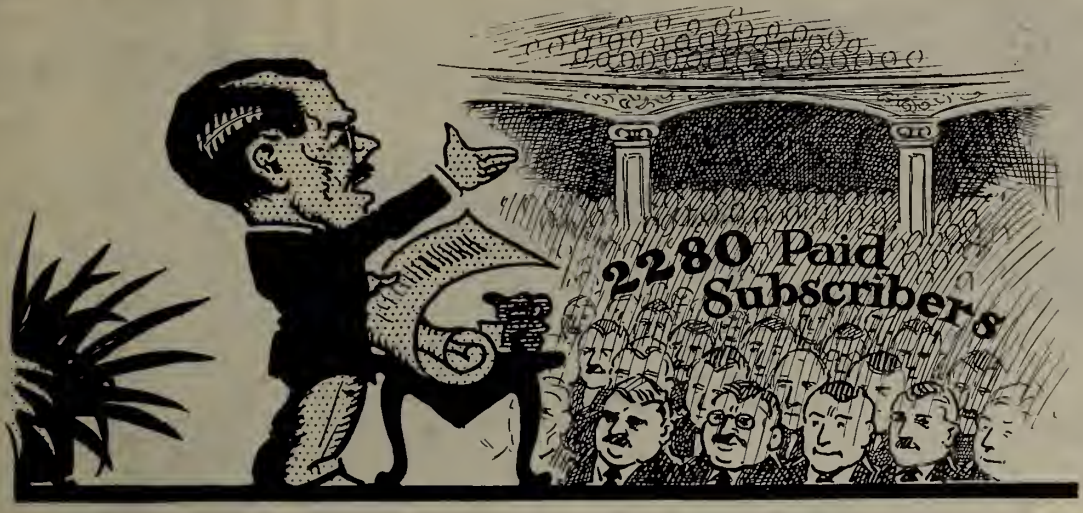


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Removing Wheel Trucks With Speed and Safety.

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The slow and tedious method of jacking up heavy passenger coaches or interurban street cars by hand or hydraulic jacks is expensive and dangerous. The better way is to use the

## Whiting Electric Screw-Jack Coach Hoist

This hoist is in daily operation at a large car works in St. Louis, where the above photo was taken, and is giving excellent results.

It consists of two pairs of screw-jacks, one stationary and one movable to accommodate cars of varying lengths. Each jack is provided with a projecting bracket which engages coach at sills. All four screw-jacks are operated at the same time by an electric motor, thus keeping the coach or car perfectly level while being raised or lowered. Clutches permit adjusting each jack separately.

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**Locomotive Hoists—Transfer Tables—Turntable Tractors.**

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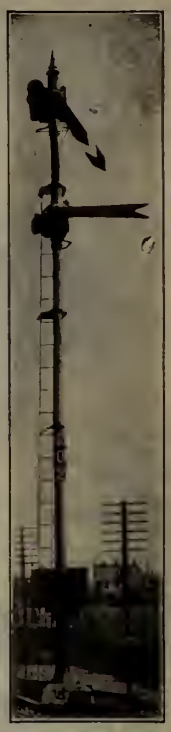

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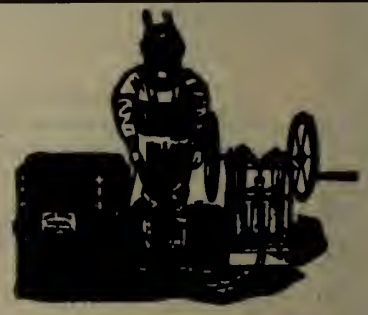

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Two Dry Docks
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EQUIPPED TO OPERATE
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WILLIAMS' "Vulcan" Forged-Cutter Tool Holders give unequaled service to those who prefer the solid, forged-type of cutting tool. Each Holder, by the mere insertion of small High Speed Forged-Cutters is adapted to the heaviest service on Lathe, Planer, etc.

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Absolutely simple in construction, yet possessing all the advantages of the solid tool without its expense.

Cutters, drop-forged from the finest grade of High Speed Steel, in stock in a great variety of sizes and types, finished and hardened ready for use.

Ask for descriptive booklet.

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The best argument in favor of throwing away files the moment they become dull is to try filing a job yourself with a dull file.

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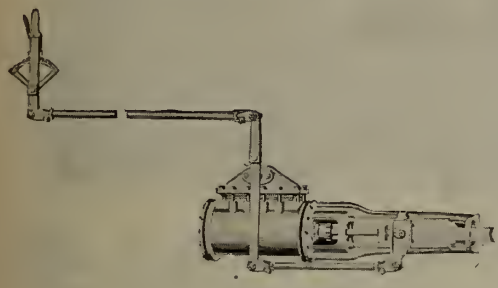

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Power reverse gear pistons do not travel back and forth in the cylinder.

A large part of their work and wear comes at a few points in the cylinders.

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Ragonay Packing does not wear the cylinders. It can not rust and freeze at one point in the cylinders.

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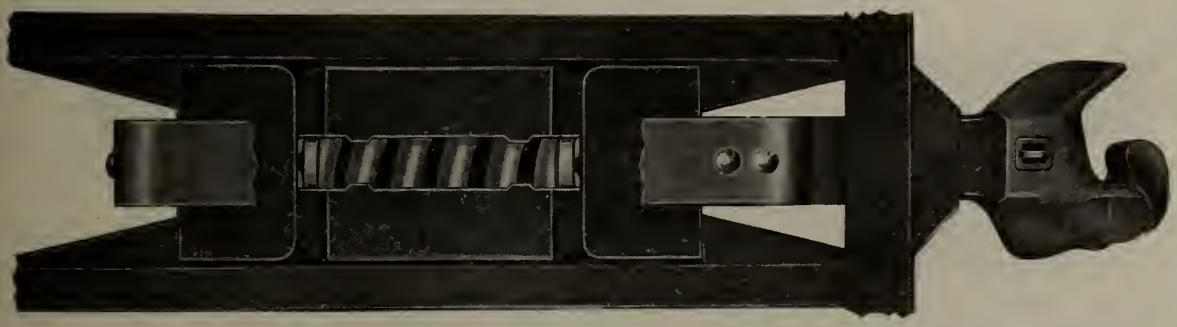

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May be used with any draft attachment.

In use on thousands of cars, including U.S. R.A. standard cars.

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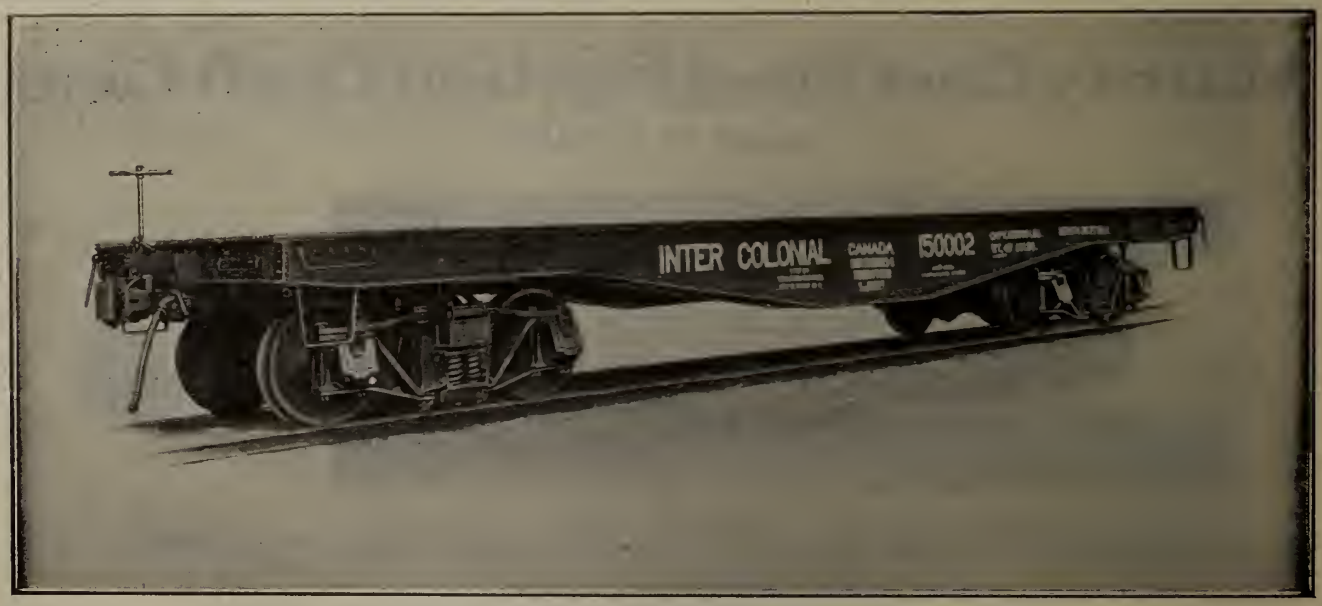


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We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

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This Gear Wheel, in a large plant at St. Catharines, was broken recently. To replace it would have taken much valuable time and represented quite a serious expense.

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The work was done by the job welding department of the International Garage, St. Catharines, Ont., and has given complete satisfaction.

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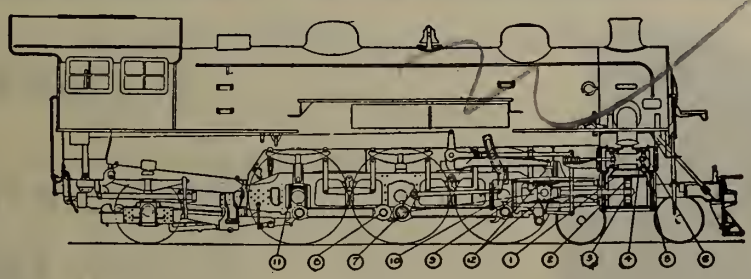

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"I have machined a great many Hunt-Spiller Gun Iron packing tubs and I always find the same quality metal in the LAST ring that I do in the FIRST," said the machinist who was turning packing for this busy shop. That is one way to determine the quality of this metal—the other method is to follow service rendered by the rings when applied.

Due to the uniform density and wear resisting qualities, Hunt-Spiller Gun Iron insures maximum length of service with minimum wear.

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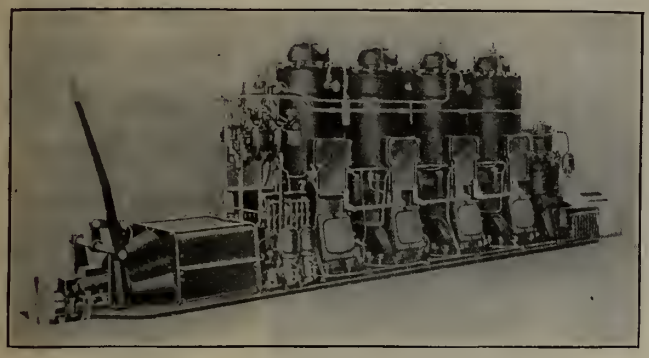
## For Full Powered and Auxiliary Ships



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Built of the best material in the world and therefore durable.

Of extremely simple design and construction, ("simple as a steam engine") and therefore reliable.

Made in sizes ranging from 5-500 B.H.P.

*Over 13,500 Bolinder Engines now in service, equal to about 650,000 B.H.P.*

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Reilly Submerged Type Evaporator

We make and supply—
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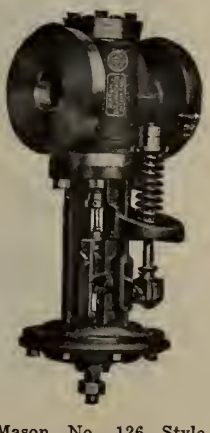
"MADE IN CANADA" and guaranteed as to construction and service.

*We sell a general line of high-class and reliable Power Plant Equipment.*



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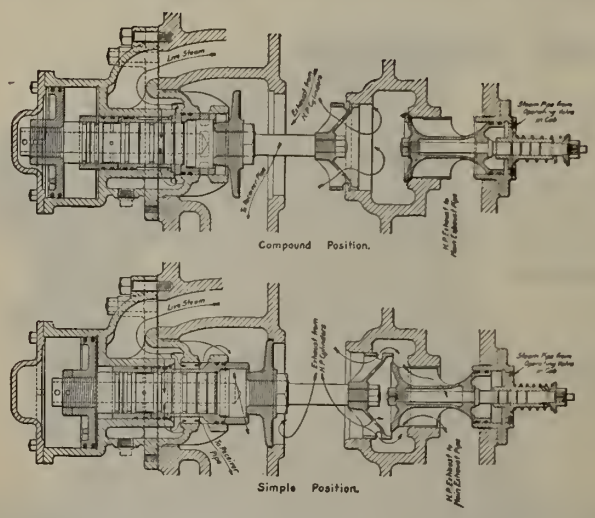
WELLAND, ONT.

# Alco Intercepting Valve




In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

In the ALCO system of compounding these conditions are covered by two of the functions of the intercepting valve.

As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

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DOMINION EXPRESS BUILDING, MONTREAL, CANADA

GRAND TRUNK RAILWAY SYSTEM

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## WINTER TOURS
TO
## CALIFORNIA

**Or to some other Pacific Coast Point or to**

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Apply to any Agent of the Company who will be pleased to furnish you with complete information as to fares, routes, etc.

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*"higher service—lower cost per day"*

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THE TWO WAY—
THE TIGHT WAY

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Hook on inside flange of Rail

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HEAD OFFICE:
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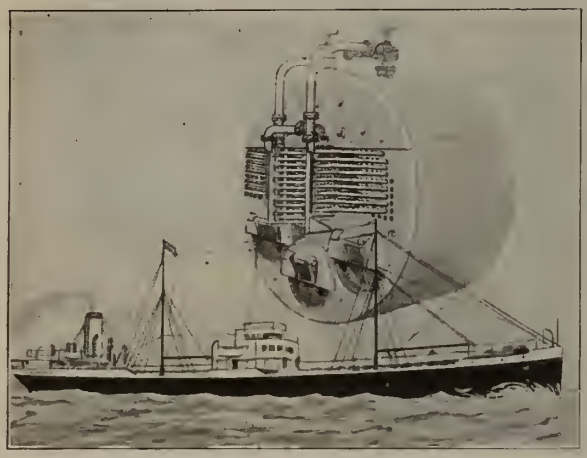

A prominent authority on Marine Engineering is responsible for the statement that superheaters were omitted from certain ships because, while desirable from the standpoint of economy, their deterioration was too rapid.

This statement referred to superheaters located outside of the high temperature gases and in a position which invites the collection of soot and moisture with consequent corrosion.

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***PROTECTED BY PATENTS*** ***Grand Prize, San Francisco, 1915***

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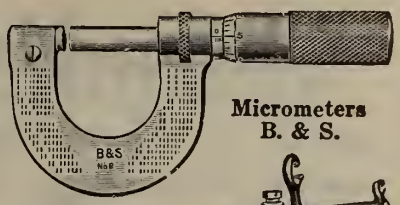


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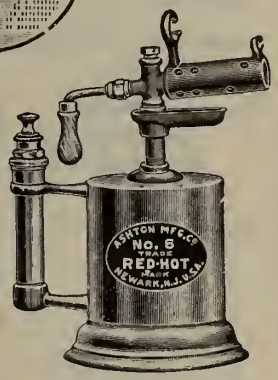
Pleased to quote prices and time of delivery.

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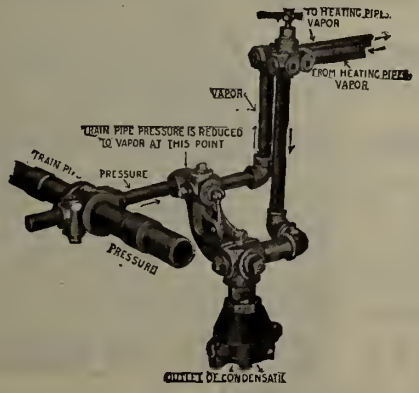


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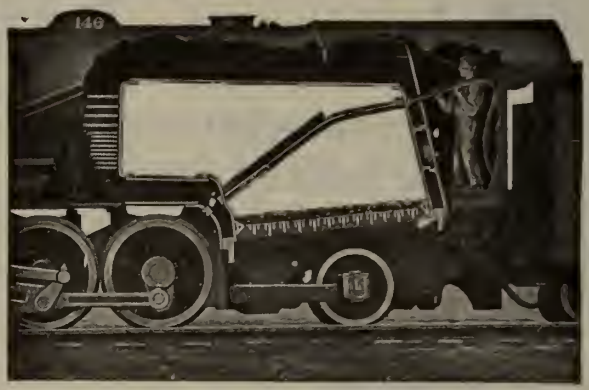
Lagonda Arch Tube Cleaner



Lagonda Cleaner Removing Scale from Arch Tubes.

# Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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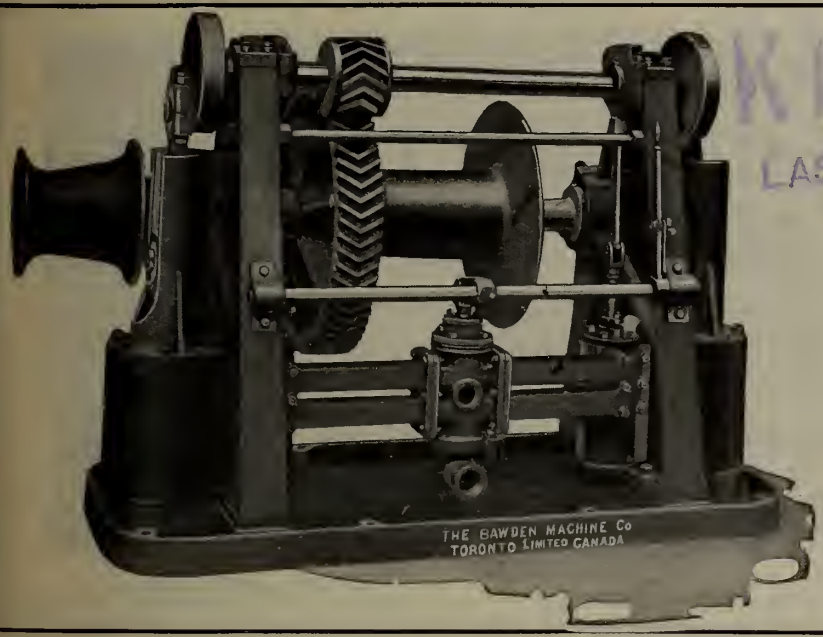


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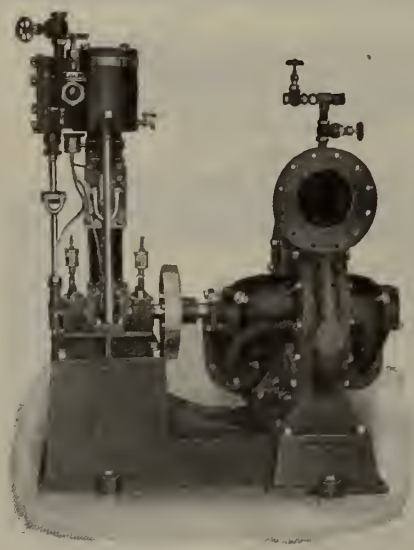

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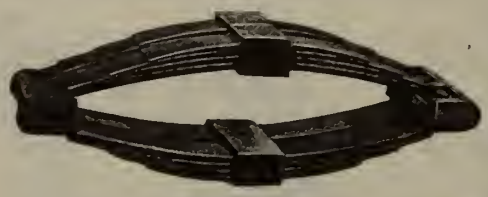

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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 264 TORONTO, CANADA, FEBRUARY, 1920 Subscription Rates, Page 77


# TRACKWORK

FOR STEAM AND ELECTRIC RAILWAYS

of every description, from component parts such as rail braces, frogs, switches, mates, diamonds, etc. to complete layouts of the largest size, either of built-up, hard-centre or solid manganese-steel construction; the above intersection, designed and constructed by us, being mainly of the latter type. Inquiries for trackwork needs, entailing early spring delivery, should be sent to us without delay in order to avoid disappointment.

CANADIAN STEEL FOUNDRIES LIMITED

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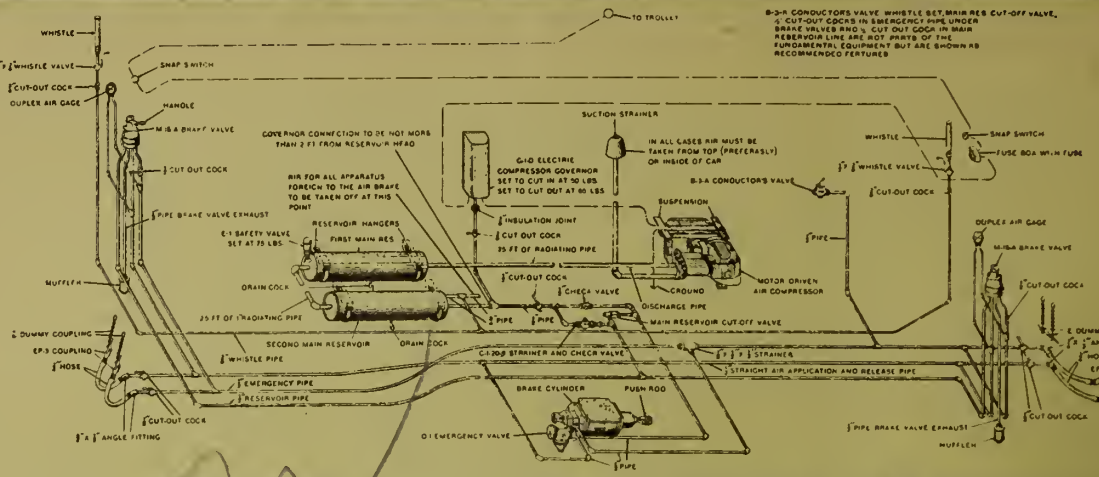


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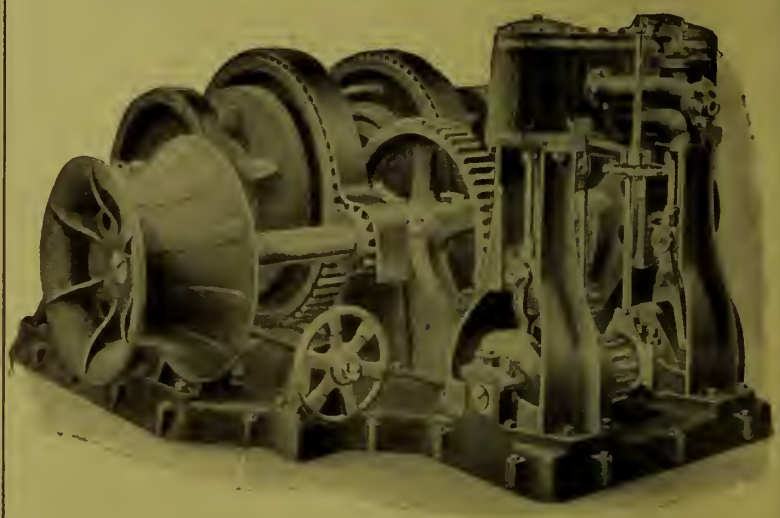

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In any size and any material

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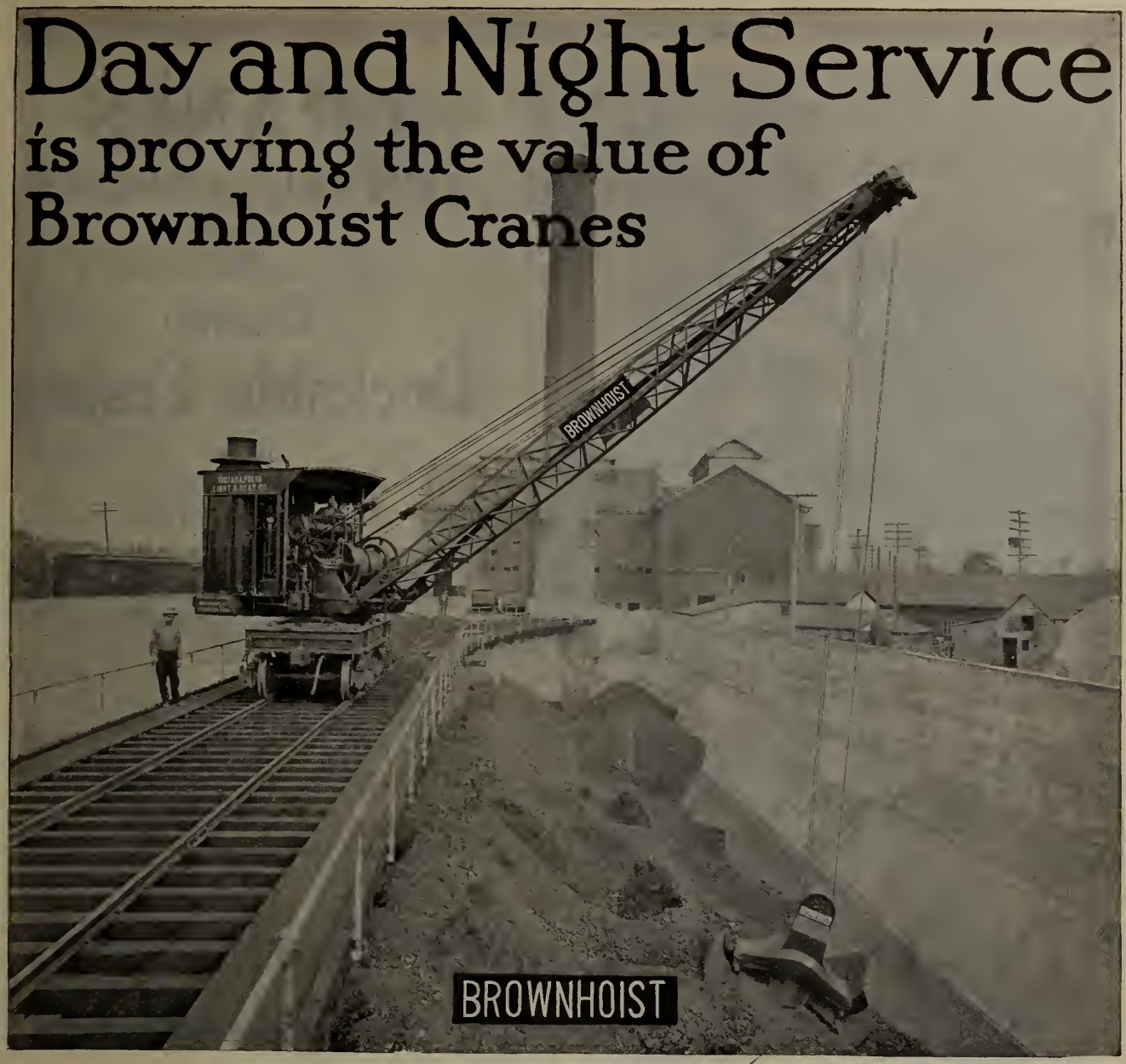
## is proving the value of Brownhoist Cranes

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**Locomotive Cranes and Buckets**

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*Write for Catalog K.*

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**MONTREAL** *Sole Agents*

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FOR ALL PURPOSES

ILLUSTRATION SHOWS
**Electric**
**Dockside Cranes**
WITH
IMPROVED FREE
BARREL SYSTEM
AND
HORIZONTAL LUFFING
ARRANGEMENT

MANUFACTURED BY
**STOTHERT & PITT, Limited**
**BATH - ENGLAND**

# The Yorkshire Copper Works, Ltd.
## Leeds

*Have Supplied Tubes for the following Battleships, viz.:—*

"Queen Elizabeth," "Warspite," "Valiant," "Barham," "Malaya," "Lion," "Tiger," "Invincible," "Royal Sovereign," "Repulse," "Ramillies," "Resolution," "Revenge," "Benbow," "Emperor of India," "Iron Duke," "Marlborough," "King George V," "Centurion," "Ajax," "Audacious," "Orion," "Thunderer," "Monarch," "Conqueror," "Queen Mary," "Princess Royal," "New Zealand," "Australia," etc., etc.

# COPPER TUBES BRASS

FOR SHIPS, LOCOMOTIVES, MOTOR CARS, POWER STATIONS, HEATERS, REFRIGERATORS, &c., &c.

*(Sole Makers of "BEMAL" Brass Condenser Tubes)*

**Canadian Representatives:—Peacock Brothers, 285 Beaver Hall Hill, MONTREAL**

**Codes: "A.B.C." 4th & 5th Edns.; Liebers'; Scott; Western Union; Marconi International.**

# WEIR

MAIN FEED PUMPS

DONKEY FEED PUMPS

CIRCULATING PUMPS

AIR PUMPS

CONDENSERS

DISTILLERS

EVAPORATORS

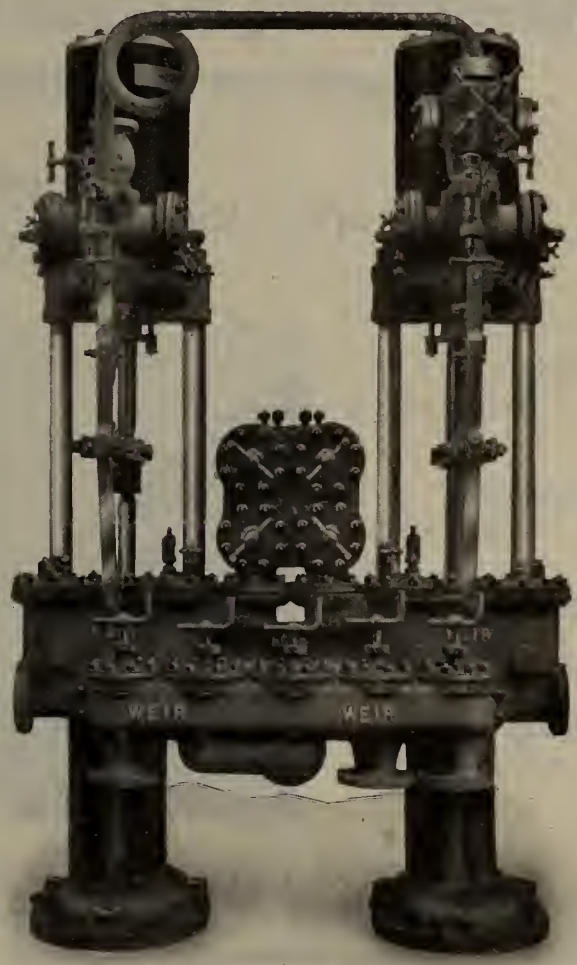
FEED HEATERS

TURBINE PUMPS

APPLIED TO UPWARDS OF

**100,000,000**

HORSE POWER




MANUFACTURED IN CANADA
UNDER LICENSE

ORIGINALITY IN DESIGN
ACCURACY IN WORKMANSHIP
QUALITY IN MATERIALS
EFFICIENCY IN PERFORMANCE

*The installing of WEIR equipment ensures continuity of operation and lowest cost. It is developed on sound engineering laws, according to the best engineering practice.*

SPECIFICATIONS AND QUOTATIONS FOR COMPLETE MARINE
AUXILIARY EQUIPMENT GLADLY SUBMITTED

**PUMPS FOR LAND SERVICE**

WRITE FOR LIST OF CANADIAN USERS

**G. & J. WEIR, Limited**
**SCOTLAND**

*SOLE AGENTS:*
**PEACOCK BROTHERS**
**MONTREAL**

# GENERAL RAILWAY SIGNAL COMPANY
## OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track.

A-C. and D-C. Automatic Block Signals for Double Track

## Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signalling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

**Head Office and Works**
**LACHINE, QUEBEC**

# Joliet Railway Supply Company

## NORTHWESTERN MALLEABLE IRON CO., Proprietor

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*Manufacturers of*

The "Huntoon" Brake Beam.

The "Huntoon" Economy Brake Beam with Reversible Strut.

Truss Rod Brake Beams.

The "Huntoon" Truck Bolster.

Pilcher Trussed Steel Side Frame.

"Joliet" Journal Boxes.

Peerless, Perry and Burry Side Bearings.

KILL
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**GENERAL OFFICES:**
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**WORKS:**
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**CANADIAN REPRESENTATIVES:**

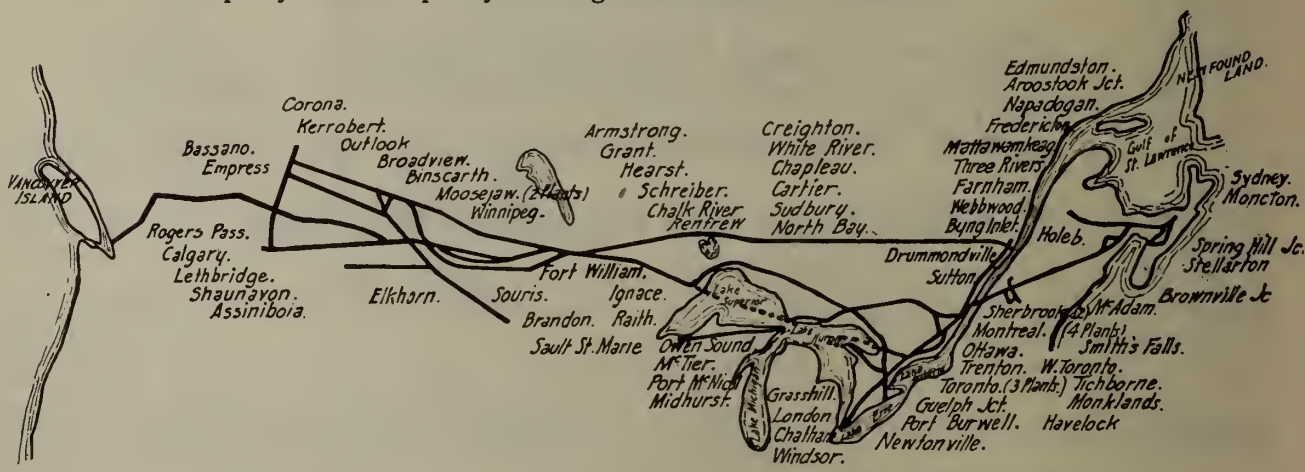
**Moore, Cameron & Hill, Limited**

284 Beaver Hall Hill, Montreal

431 McIntyre Block, Winnipeg

# Nothing Succeeds Like Success

We have now built over eighty Locomotive Coaling Stations and the Map below shows how they are spread all over Canada. There are few Locomotive Coaling Stations in Canada that have not a "W & W" nameplate on them, and when you understand that we have twenty years experience in the construction of Coaling Stations it will be obvious why we obtain so many repeat orders. With our experience we understand just what kind of machinery is required for this severe class of work, and can practically fit up any size or capacity Coaling Station from our stock.




Complete erection from foundations up and machinery manufactured and installed. We have an Engineering Department which is at all times ready to co-operate with you. Do you wish Designs, Details and Estimates, we will be only too glad to furnish these on request.

# Williams & Wilson, Limited

## 84 Inspector Street, MONTREAL

# Fairbanks Dial Indicator

Direct Reading
Gross or Net

Full Capacity

No Loose Weights
No Calculation

May be applied to any existing platform scale.

The Fairbanks Dial Indicator reduces the weighing error and the cost of weighing.

Under present conditions, both of these are more important than ever before.

## The Canadian Fairbanks-Morse Co., Limited

*"Canada's Departmental House for Mechanical Goods"*

St. John, Quebec, Montreal, Ottawa, Toronto, Windsor, Hamilton,
Winnipeg, Saskatoon, Calgary, Vancouver. Victoria.

# CANADIAN ALLIS-CHALMERS, LIMITED

ENGINEERS - IRON & BRASSFOUNDERS - BOILERMAKERS - SHIPBUILDERS

Vertical, Triple and Compound

## Marine Engines

Capacities from 200 I.H.P. to 3,500 I.H.P.

## Deck Machinery and Ship Auxiliaries

## Condensers

Independent or "Built-in" types.

## Marine Boilers

"Scotch" or Water Tube, any size, delivered at Tidewater.

## Steering Engines

Automatic Combined Hand & Steam & Screw Gear Types with Telemotor.

## Edwards Air Pumps

## Feed and Bilge Pumps

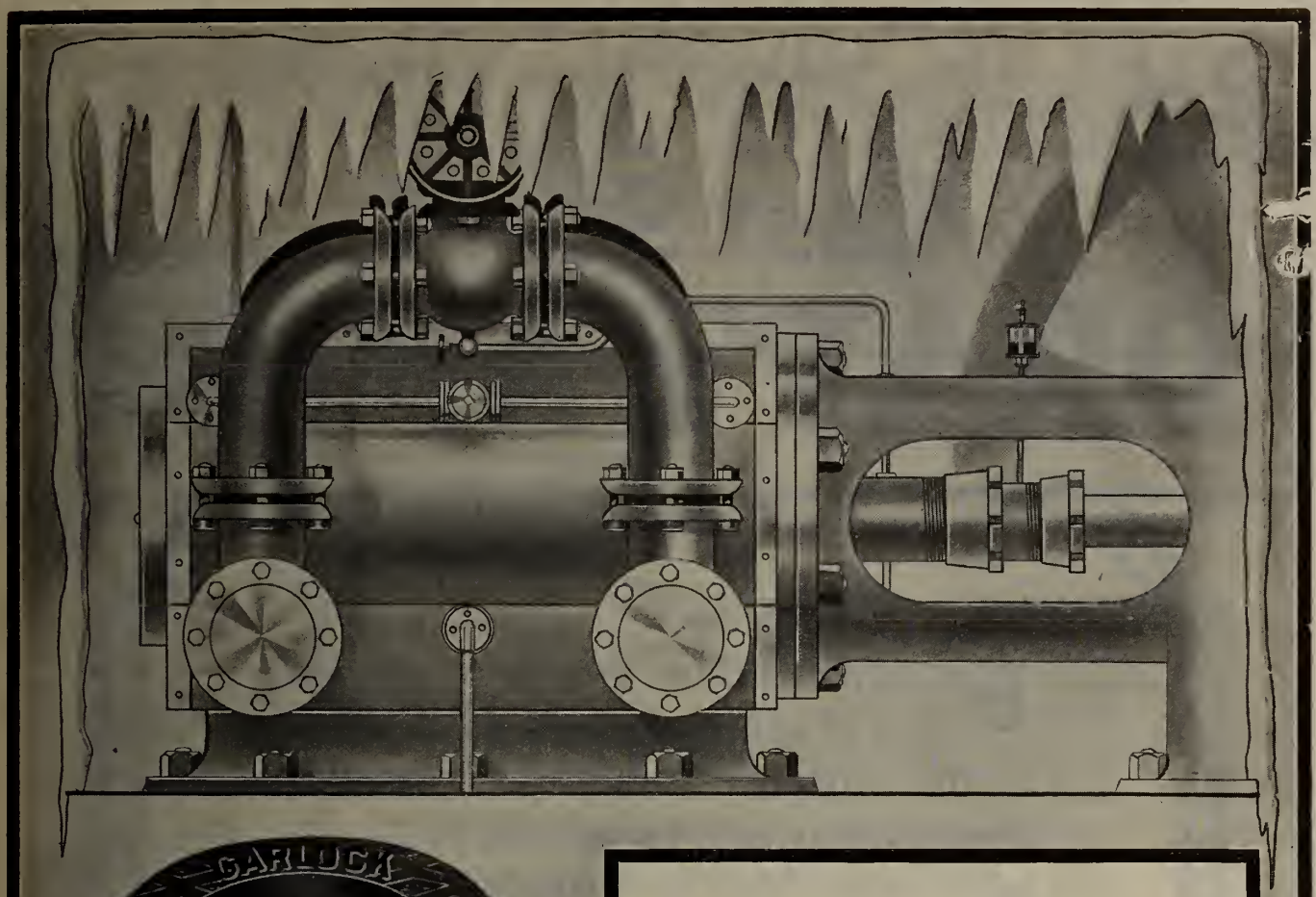
## Circulating Pumps.

The eight { 4 Right Hand / 4 Left Hand } 8¼ x 10 Cargo Winches shown in above cut may be shipped immediately from our Montreal Works.

# CANADIAN ALLIS-CHALMERS, LIMITED

Head Office, :-: Toronto

Branch Offices: Montreal, Quebec, Halifax, Sydney, St. John, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Nelson, Vancouver, and Victoria.



# Refrigerating Engineers

and owners of ice plants do not care to experiment with Ammonia Packing during their busy season. Conditions of temperature and lubrication demand a scientifically made, high-grade packing for this service. Before repacking your compressor stuffing boxes this Spring, write to our nearest branch for catalog illustrating and describing several styles and combinations of

## Garlock Ammonia Packings

or send us a statement of your conditions and requirements and benefit by our many years' experience in this field.

## THE GARLOCK PACKING COMPANY, Hamilton, Ontario

BRANCHES:

Montreal, Quebec.....409 Shaughnessy Bldg.
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Bert Collins.

# ECONOMY
## Cast Steel
# DRAFT ARMS

ECONOMIZE—get more service out of those old cars with weak center sill construction. They will stand up in service and yield many additional revenue-producing miles if they are strengthened with *Economy* cast steel draft arms. Economize now.

KILL
LAST AD.

INTERNATIONAL EQUIPMENT CO., Ltd.
MONTREAL, QUE.

## American Steel Foundries
NEW YORK CHICAGO ST. LOUIS

SAVE COAL by keeping the heating surfaces of your boilers free from scale. One-sixteenth of an inch of scale increases your coal consumption 10.8%.

SAVE WATER AND COAL by reducing the number of times it is necessary to open blow-off cocks to keep the concentration below the foaming point. You are blowing out one pound of coal each second a one and one-half inch blow-off cock is held open.

SAVE BOILER REPAIRS by reducing the amount of work made necessary by leaks caused by scale in your scale forming water districts, and unnecessary expansion and contraction caused by frequent washing and water changes in your foaming districts.

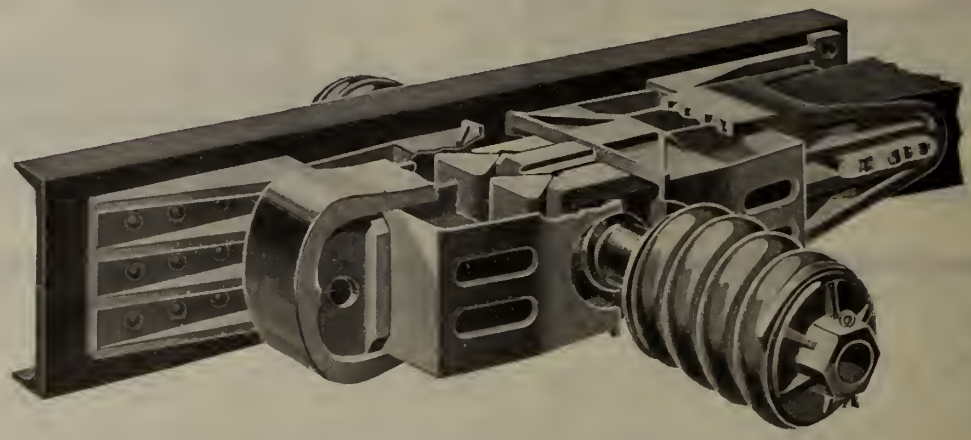
These savings can be effected by adopting the Dearborn System of Water Treatment. The cost is fifty per cent less than any other system now in use.

**Dearborn Chemical Company of Canada, Limited**

**General Offices and Factory, Toronto**

**Branch Offices: Montreal, 263 James St.; Winnipeg, 413 McIntyre Block**

# CARDWELL FRICTION DRAFT GEAR
## MADE IN CANADA



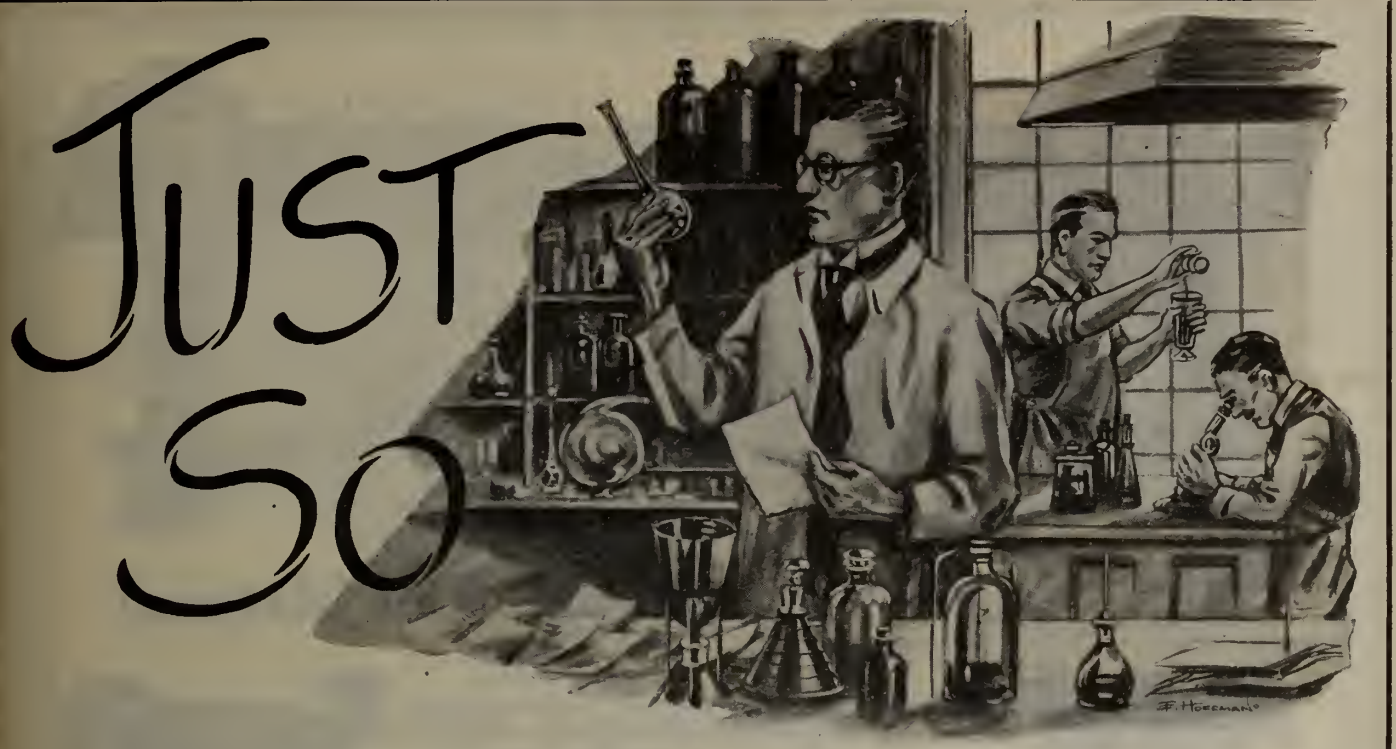
## *Universal* ATTACHMENTS
## MADE IN CANADA

REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
TWIN SPRING DRAFT RIGGING

CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

## MADE IN CANADA

# WEBB. G. KRAUSER
**Transportation Building, MONTREAL**




# Always the Same

Galena Oils *must* be uniform—no "guess work" can enter into their preparation. Compounded scientifically, quality and uniformity are determined by the most careful analytical tests. This is a distinctive feature of Galena products that has gained for them an international reputation.

**Galena Car, Engine and Coach Oils**
**Perfection Valve and Signal Oils**
**Galena Railway Safety and Long Time Burner Oils**

HELD STANDING
LAST ADVERTISEMENT.

Are known throughout the world as the highest grade railway lubricating and burning oils that are manufactured. Their general use on the great railway systems of the United States, Canada, Europe and South America is the best testimonial of their recognized superiority.

*There is a Galena Oil or Grease for every Steam or Electric Railway use.*

## Galena Signal Oil Company

**Works - - - - - - Toronto, Ont.**

**Stocks at Fort William, Winnipeg, Vancouver.**

**Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg., Montreal.**

# Right Here, for Contract Rail Material

Type X inverted contact rail insulator for use on heavy cranes or railways

For light or heavy shipyard or industrial cranes, industrial haulage system and electric railways. A complete line of insulators, standards and contact rail shoes that will meet practically all conditions.

Being specialists in this line we are also prepared to recommend and supply material of special design to meet any complex conditions you may have.

Write for data sheets.

Type LV contact rail insulator designed for railway and heavy haulage or crane work

Typical Keystone Contact Rail Shoe having a reversible contact member thereby enabling its use for over-contact or under-contact rails

Type I contact rail insulators with off-set base for bolting directly to ties

Type SP contact rail insulators specially designed for industrial service. The insulator rests on the ties, and is held in place with two iron clamps.

**Electric Service Supplies Co.**

*MANUFACTURERS*

PHILADELPHIA 17th and Cambria Sts. NEW YORK 50 Church St. CHICAGO Monadnock Bldg.

**Lyman Tube & Supply Co., Ltd.**

*CANADIAN DISTRIBUTORS*

MONTREAL Lyman Tube Bldg. WINNIPEG 703 Confederation Life Bldg. TORONTO 33 Melinda Street

# Six months vacation on full pay for one section laborer out of each gang

### Chief Engineer Morse Says:

In his paper read before the recent Roadmasters' Convention Mr. C. A. Morse, Chief Engineer of the Rock Island Lines, conservatively estimates that one-half hour per man per day is lost when gangs travel by hand car instead of by motor car.

### What It Means

Now for a gang of eight men to lose one-half hour per day each, there is a total loss in working time of four hours per day.

Four hours is just one-half of your present eight-hour day. Or, as the headline says, it is equal to a loss of one man's time for six months in a period of one year.

And you pay for that which is equal to a "Six Months' Vacation" at the rate of 40 cents per hour.

### Figuring Costs

In figuring the saving of motor equipment over hand equipment for section men, the prevailing method has always been to multiply the amount of time lost by the amount of money that the lost time was worth.

And to be sure the above method is exact in so far as actual money is concerned. It proves the investment value of motor cars. However, that method being concrete and not visionary entirely loses sight of the further important fact that **time lost can never be regained.**

### Motor Cars Necessary

Present day efficiency standards plus shortening of hours, plus increase in wages, sets up an employer's necessity for methods to crowd each working hour with results.

So, even if the use of motor cars did not save you a nickel in actual money; even if they were not a good investment, when it came to this matter of dollars and cents comparison, their use would still be worth many times their cost.

### Because

Present time which is now non-productive can be made to produce. Six months' time for one man out of a gang of eight can be saved and used for grading, tamping, surfacing, ditching, fencing.

A section motor car makes this possible and its purchase price will only stand you somewhere around the three months' pay of a section laborer.

**Although prompt delivery can be assured right now, the demand for cars will far exceed the supply when the roads "Go Back."**

# mudge
## motor cars

GENERAL OFFICES:
443 Railway Exchange, Chicago

BRANCH OFFICES:
New York St. Louis San Francisco

CANADA:
Canuck Supply Co., Ltd.
Montreal, Toronto, Winnipeg

# ACID and BASIC OPEN-HEARTH STEEL

and

FERRO-ALLOY

# CASTINGS

Cast Steel Hydraulic Press Platen. 52 tons.

## CANADIAN STEEL FOUNDRIES LIMITED

*Transportation Building, Montreal*

*(See also our advertisement on front of cover.)*

# C.M.C.

*HOME MONEY for HOME GOODS*

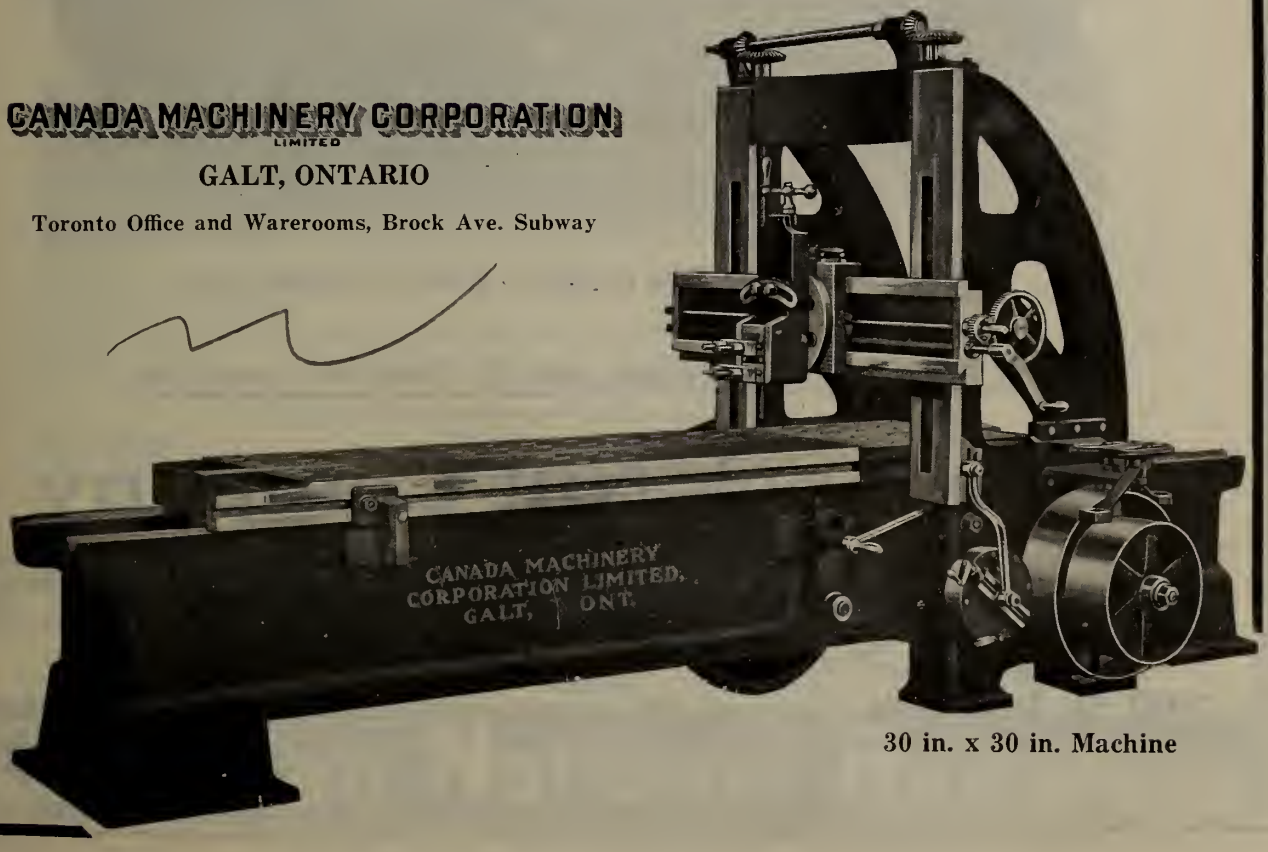
## *PLANERS*

**SIZES 24" 30" 36" 42" and 48"**

**Any Length of Bed. Various Drives by Belt or Motor**
**Number and Arrangement of Heads as Desired**

Our planers are built to combine solidity and accuracy with convenience and speed of operation. An unstinted and intelligent use of metal gives the machine an absolute rigidity under heaviest cuts, while the operating mechanism and adjustments are as simple, effective and convenient as possible.

**CANADA MACHINERY CORPORATION**
LIMITED
GALT, ONTARIO
Toronto Office and Warerooms, Brock Ave. Subway



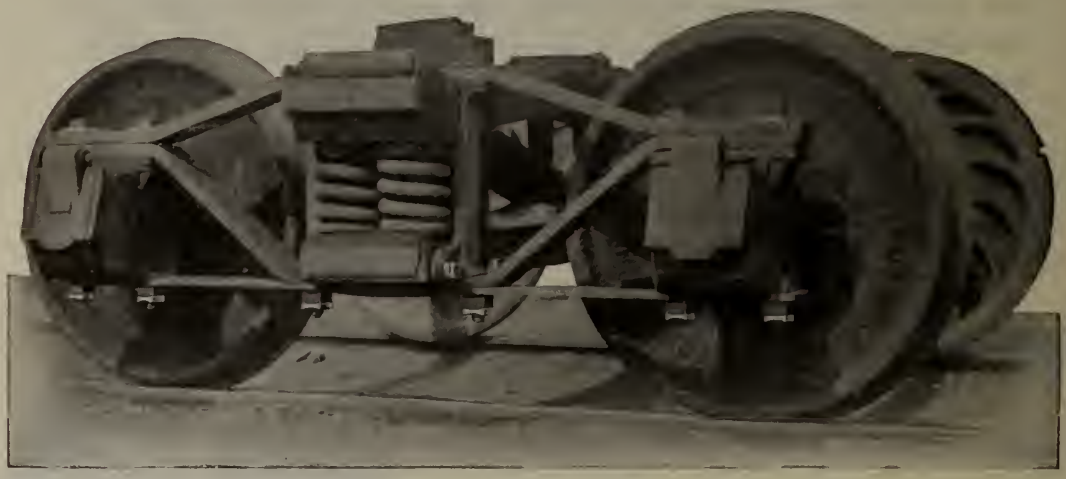

30 in. x 30 in. Machine

# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***



Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

## Boss Lock Nut Company
### of Canada, Limited

*Write for latest catalogue.*

HEAD OFFICE:
**263 St. James St.**
**MONTREAL, Que.**

**McIntyre Block**
**Winnipeg, Man.**

"60 Vessels"

Canada's Commerce Carriers

"Total Tonnage 325,000"

# Canadian Government Merchant Marine, Limited

Now Afloat:

| | | |
|---|---|---|
| "CANADIAN VOYAGEUR" | "CANADIAN TROOPER" | "CANADIAN SEIGNEUR" |
| "CANADIAN PIONEER" | "CANADIAN SAILOR" | "CANADIAN RAIDER" |
| "CANADIAN WARRIOR" | "CANADIAN SPINNER" | "CANADIAN RANCHER" |
| "CANADIAN SETTLER" | "CANADIAN GUNNER" | "CANADIAN NAVIGATOR" |
| "CANADIAN RANGER" | "CANADIAN TRADER" | "CANADIAN TRAPPER" |
| "CANADIAN VOLUNTEER" | "CANADIAN SIGNALLER" | "CANADIAN AVIATOR" |
| "CANADIAN IMPORTER" | "CANADIAN MILLER" | "CANADIAN SOWER" |
| | "CANADIAN ADVENTURER" | |

Weekly Freight Service to United Kingdom from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Fortnightly Freight Service to West Indies and Cuba from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to Australia and New Zealand from Vancouver.

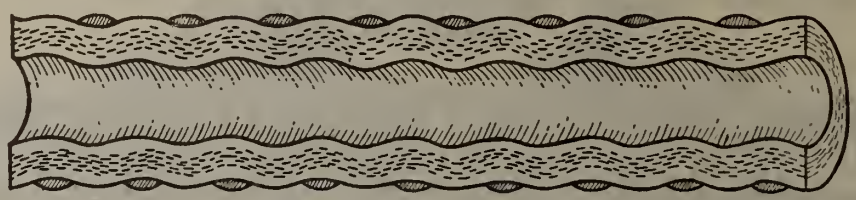
For further information apply to any Canadian Railway Agent or

D. O. WOOD,
Traffic Manager, Exp. & Imp. Dept.,
Canadian National Rys.,
Toronto, Ont.

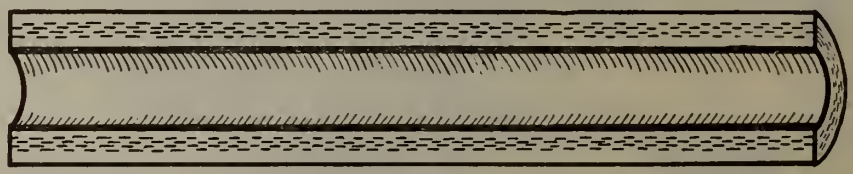
GEORGE E. BUNTING,
Ontario Freight Agent,
Room 704 Royal Bank Bldg.,
Toronto, Ont.

W. A. CUNNINGHAM,
Exp. & Imp. Freight Agt.,
230 St. James Street,
Montreal, Que.

# Canadian National Railways



SECTION OF STEAM HOSE SHOWING THE EFFECTS OF WIRE-WINDING UNDER PRESSURE.



SECTION OF GOODYEAR STEAM HOSE UNDER THE SAME PRESSURE.

# Goodyear has made Wire-Winding on Steam Hose Unnecessary

THAT the expansion of steam in steam hose had to be controlled by wire-winding has been long taken for granted by industry. Of course, the wire became bent and the hose choked up; it became too hot to handle; it was inconvenient to cut into shorter lengths; the wire cut through the cover. But it had always been so. And wire-winding seemed essential to protect hose from rough usage and from pressure bursts.

The illustration shows what wire-winding does to steam hose. Under the heat and pressure of use, the hose expands faster than the wire. Bulges and blisters form. The tube cracks and the fabric is weakened.

Goodyear has made wire-winding on steam hose unnecessary. Goodyear has developed a hose fabric strong enough to control steam under high pressure—tough enough to insure long service *without special winding or covering.* Add an inner tube of special compound to resist heat and a tough cover—there you have the story of very long service and very low final cost.

The high quality of Goodyear Steam Hose—the unusual construction, developed solely to meet the severe conditions under which steam hose is used—are but samples of what you will find in all Goodyear Industrial Hose.

Goodyear has scientifically developed a hose for every industrial use. Samples of this hose, and the advice of a trained technical man, are yours for the asking—without obligation. Phone, wire or write the nearest branch.

**The Goodyear Tire & Rubber Co. of Canada, Limited**

*Branches—Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver. Service stocks in other cities.*

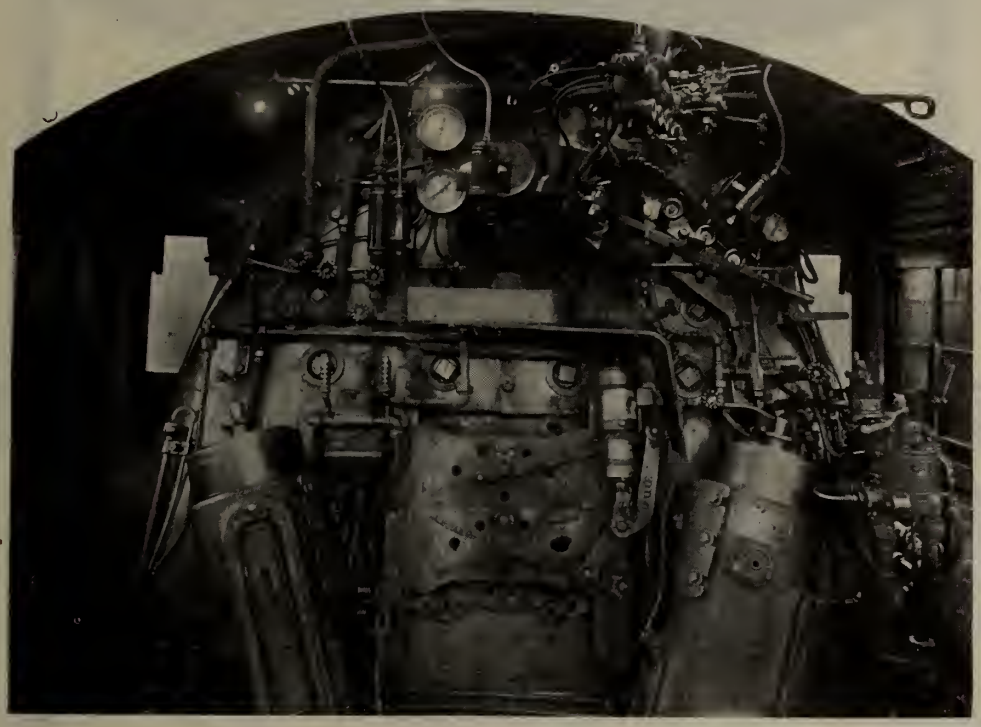
**GOODYEAR**

MADE IN CANADA

**INDUSTRIAL HOSE**

# DUPLEX STOKERS

## *Facilitate Locomotive Flexibility*



The flexibility of a locomotive is measured by the range of operating conditions under which it can give its utmost hauling service. A 100 per cent flexible locomotive is one which can be worked to its maximum capacity on any part of the railroad system operating it.

Duplex Stokers increase the flexibility of locomotives because they get full hauling capacity out of any given engine under any given set of operating conditions, and with any grade or size of coal adequate as locomotive fuel.

The Duplex Stoker's ability to give 100 per cent operating efficiency with any kind of locomotive coal has made Duplex-Stoker-fired engines available for service on any part of 60 different railway systems.

**Over 3,800 of Our Stokers in Service to Date.**

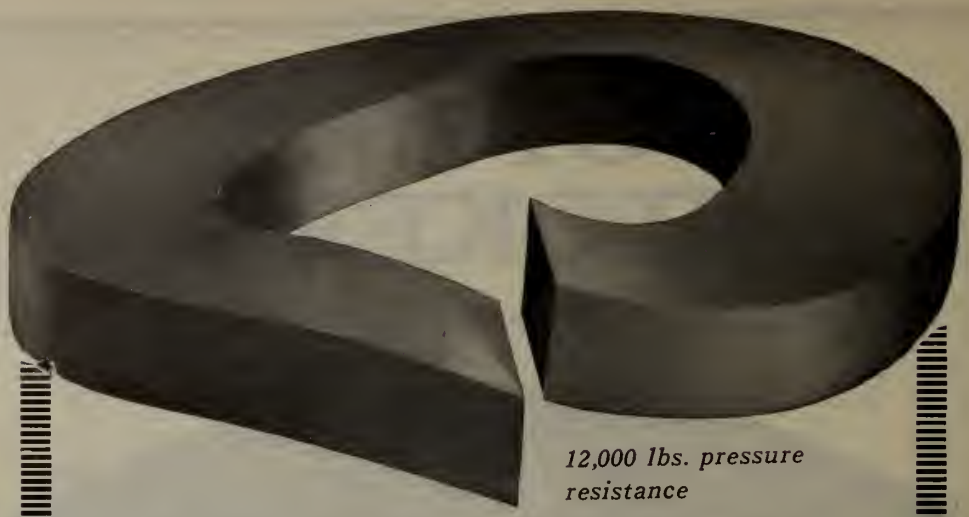
# Locomotive Stoker Company

Railway Exchange
Chicago, Ill.

Main Office and Works
Pittsburgh, Pa.

50 Church St.
New York

KILL
LAST AD.



*12,000 lbs. pressure resistance*

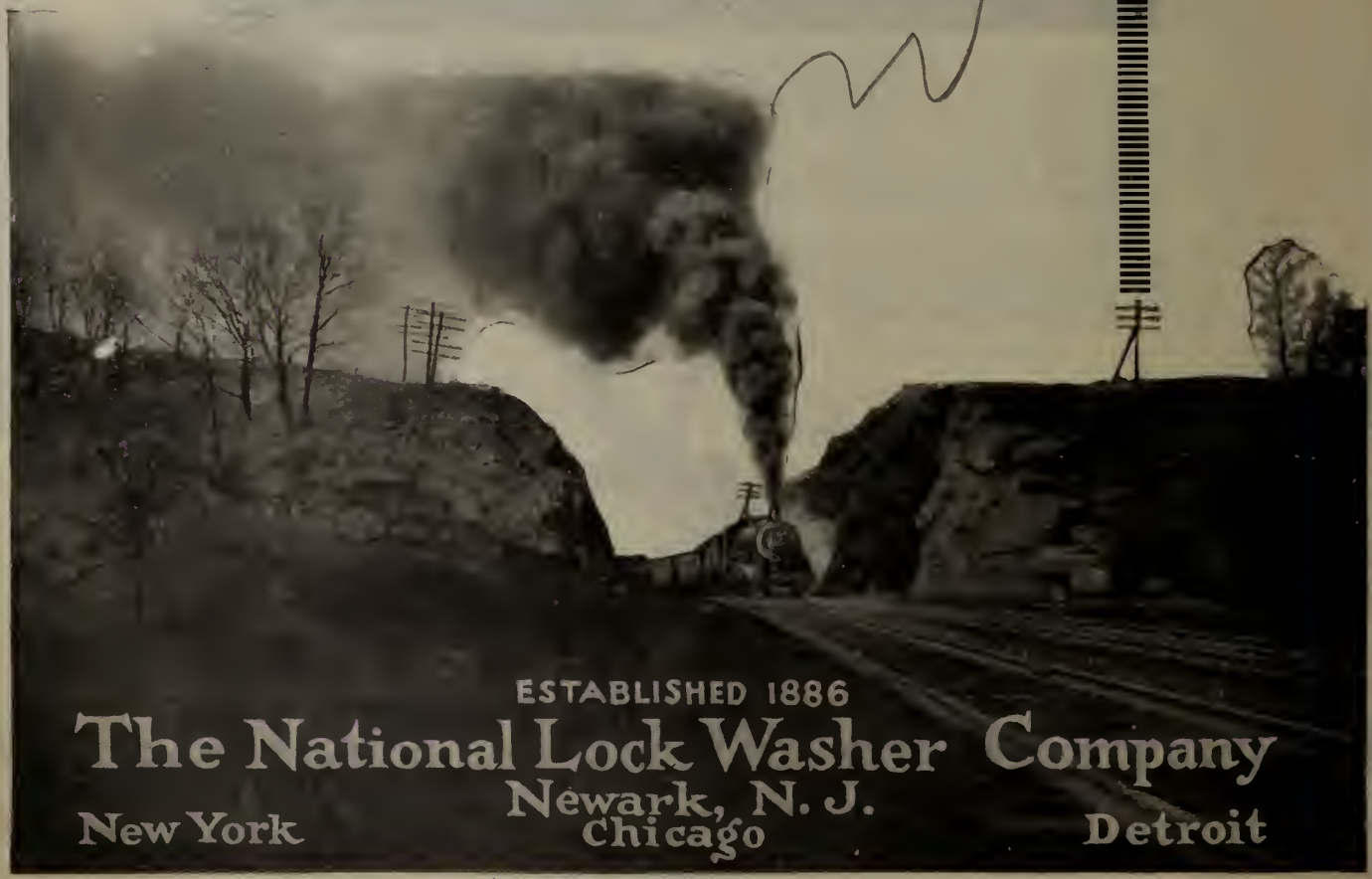
## *A BOY TO DO A MAN'S WORK IS POOR ECONOMY*

So is the practice of purchasing a device only partially capable of performing a desired function.

# Hipower Nut Locks

are so designed, and so manufactured, that they effectively and economically perform the functions for which they were purchased.

Their superiority is based on a sound mechanical principle and evidenced by the records of millions in service.



ESTABLISHED 1886

**The National Lock Washer Company**

Newark, N. J.

New York Chicago Detroit

# Safety and Strength *with*

# Q & C Rolled Steel Step Joints

Combined with their feature of strength—which under actual test has been proven many times stronger than cast metal — Q & C Rolled Steel Compromise or Step Joints embody the factors of safety and economy. By our process of manufacture a rolled steel joint with the Bonzano and Thomson features (the strength giving depending flange and metal distribution at the head) is pressed to fit any rail section. This process involves heat treatment which further strengthens the joint and also permits pressing to a perfect fit. On your road you want the step joints that are most efficient. A card will bring you any information. Write us today.

## The General Supply Co. of Canada, Ltd.

MONTREAL
TORONTO

356 Sparks Street
OTTAWA

WINNIPEG
VANCOUVER

# The BERTRAM Page

## MACHINE TOOLS

## No.4 Single Punch and Shear

### 12" Throat Motor Drive through belt

*Fitted with Plate Shearing Attachments*

P12224

### Capacity

To punch 1" hole through 1" Plate
To shear 1" Plates
To " 6"x1" Flat Bars
To " 1¾" Round Bars
To " 4x4x⅜" Angles

**The John Bertram & Sons Co., Limited**
DUNDAS. ONTARIO.

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TORONTO
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609 Bank of Ottawa Bldg.

WINNIPEG
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HALIFAX
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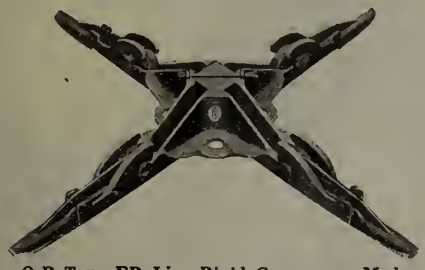
# O-B PRODUCTS

*Quality First*

O-B Type E Live Crossover. Adjustable from 30° to 90° Deflectors furnished for 30° to 60°.

O-B Type F Insulated Crossover Adjustable from 45° to 90°.



O-B Type ER Live Rigid Crossover. Made in 8°, 15°, 23°, 33°, 35°, 37° and 90° angles.

O-B Type C Insulated Crossover Adjustable from 45° to 90°.

## Cut Installation Time 50%

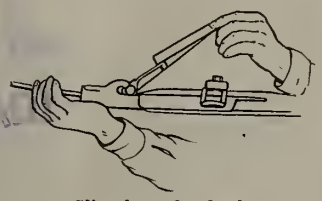
### At First Trial of O-B Crossovers

One cold winter night a large city property took its first lot of O-B Crossovers out on the tower wagon. The foreman turned one over to a lineman who had never handled a Cam Tip before.

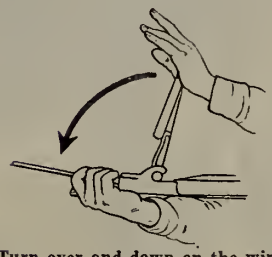
He looked it over and started to work. It took him just half the time, by the clock, to put that O-B Crossover on the wire as it regularly took him to install a bolted tip crossover. And he had been working with bolted tips every day.

Linemen who are used to cam tips cut the installation time to about one-third.

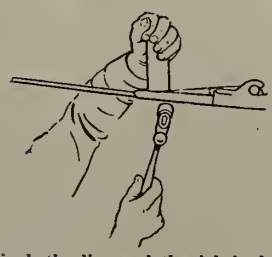
Those same cam tips that slip in place so easily, provide such a good wire-to-pan passage for the wheel that arcing and pounding are practically eliminated. Long life of Crossover and adjacent trolley wire follows.



Slip tip under hooks



Turn over and down on the wire



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St. Louis 2
Buffalo 4
Pittsburg 2
Cleveland 2
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Montreal
Mich. City. Ind.
Louisville.
Mt. Vernon Ill.
Ft Wayne. Ind.
Birmingham
Atlanta.
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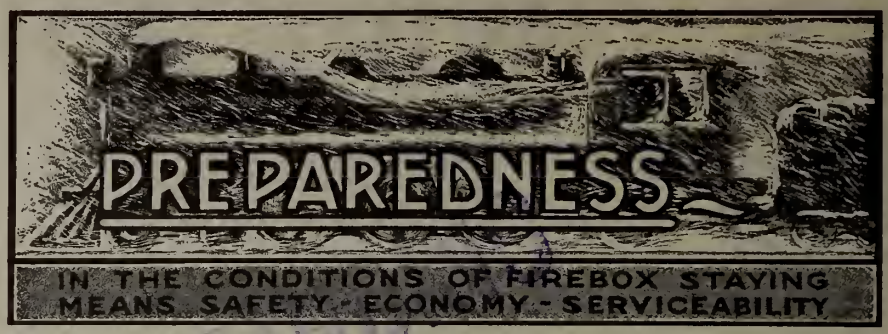


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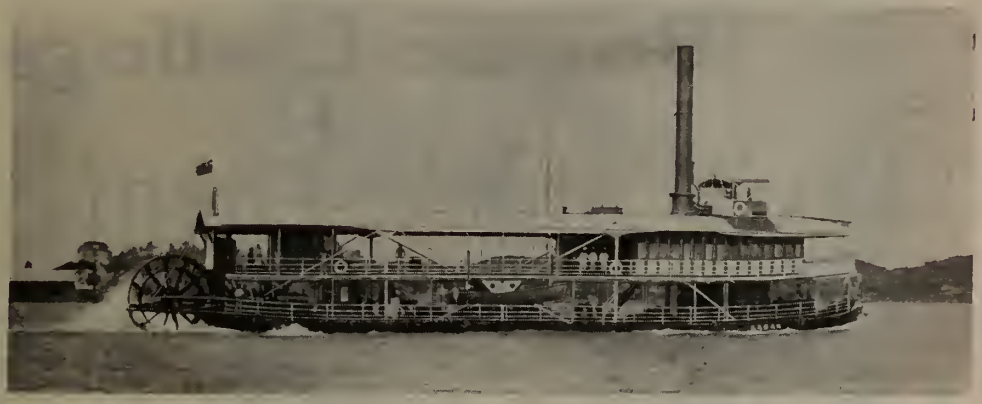

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# A PAPER'S "READER-INTEREST"

IN Chapter 1 we showed an audience of over 2200 paid subscribers to Canadian Railway and Marine World seated in a vast auditorium, to listen to the messages of the editors and the advertisers who were seated on the platform.

Now, there is a peculiar fact about this audience—unique in trade journalism as far as we know:

*While the ABC report shows only 2277 paid subscribers at the time of the audit, our subscription ledger for the same period showed a gross cash receipt of $4736 or the equivalent of 40 more subscriptions at $2 each than the auditors gave us credit for.*

The fact is that every subscriber pays $2 in full, pays in *advance*, and is automatically dropped from the list at the expiration date.

But—they don't *allow* themselves to be dropped, because they feel that they dare not miss a single issue.

The subscription ledger of a publication is the truest mirror of Reader Interest—or lack of it—of that publication.

Where subscribers lag in their payments and require much urging, there is something wrong with the publication itself.

Where premiums are given or professional subscription solicitors employed, on a commission, to drag the subscription price away from whomsoever, the *quality* of the subscription list is below par, from the standpoint of average and aggregate buying power.

We do none of these things. A very large percentage of our subscribers renew voluntarily by mail, from year to year; and, by the same token, most of our *new* subscriptions come in without solicitation on our part. Our subscription solicitors work on straight salary, and their continuance in our employ depends, not on the number, but on the character of the subscribers they enroll.

Each of our readers knows, then, that he is in mighty good company—a member of a distinguished audience of the *Masters* of Canadian land and water transportation.

And these readers could their wishes be voiced ask no greater favor of our advertisers than that their business messages to them be concrete, constructive, filled with practical and technical information, rather than idle boastings or empty noise without substance.

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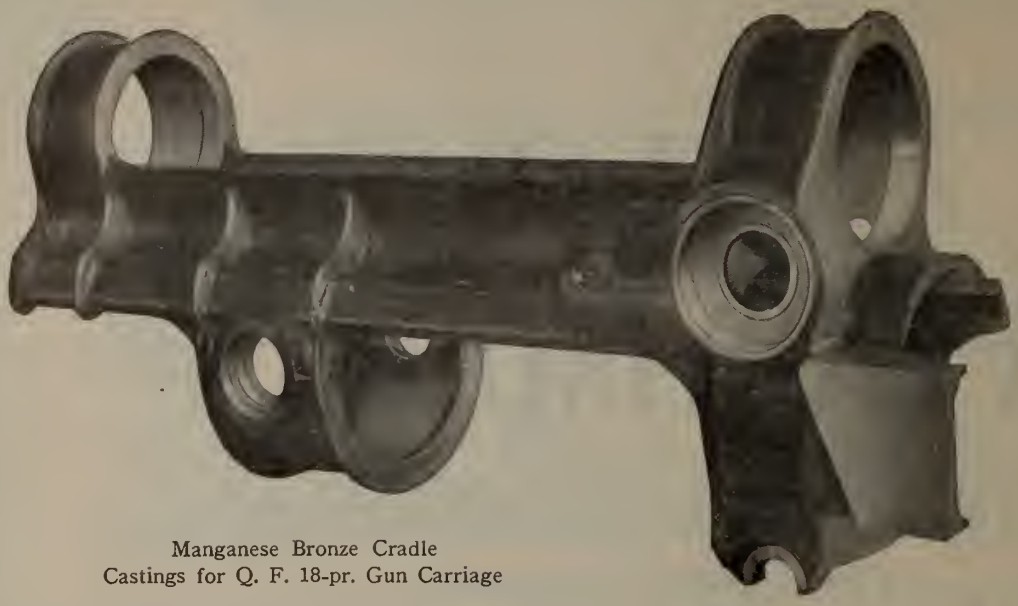

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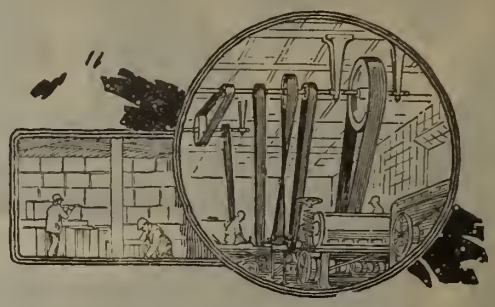

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# Canadian Railway and Marine World

February, 1920

## Graphic Production Control.

By E. T. Spidy, Assoc. Mem. Am. Soc. Mech. Engrs.; Production Engineer, Angus Shops, C.P.R., Montreal.

In the management of any industrial plant, the author has become convinced, through plain experience, that apart from the personality of the management directing affairs, and the regular accounting system, there is a great necessity everywhere for the placing of facts in such a manner that the condition of affairs today can be quickly seen in their true relation to the policy of the management. We are all more or less accustomed to seeing statistics shown graphically. Their value to show what has happened is unquestioned. We are able to see at a glance for instance how our expenditure on a certain class of output compares with last year, and if we plot on the same sheet the amount of our output we are able to see how the cost has varied with the output. Such a diagram is a familiar one and needs no explanation (sample shown in fig. 1). Endless combinations are made like this, but they all tell you what is done. I wish to emphasize this point because upon it hinges the purpose of this paper.

I ask those who are departmental heads, do you not on receiving statements, whether in figures or by diagram, often feel that you have been "let down," so to speak. Let us suppose you have received a statement showing departmental expenses, or a statement of output in which an item shows lower than your expectations or the average. You see a condition that if you had known it was happening, you could have done something, but you didn't, and all you can do now is to investigate and make such changes as your judgment dictates.

After you have received an explanation, called your man down or perhaps replaced him, what guarantee have you that you will not look at an even worse condition next month? The only guarantee you have is your confidence in the man in charge. This confidence I do not for an instant depreciate, because it is your main stay with the most perfect of systems, but consider, in this age of specializing, would you not be better off and would not the individual departmental heads or foreman be better off if you were to supply him with such information on expenses or where he stands on this output, or other details that are "up to the day of looking at it," so that he can control the situation to give you what you want. The natural question becomes, can it be done? It can if you organize to do it. To organize to do it, means that you must assist that executive or foreman by training specialists to perform functions that are at present part of that foreman's duties, to do them better than the foreman can, by reason that these specialists concentrate on one particular object only.

Specializing needs no introduction, on our machines and operations we know a specialist can produce more than an all round man on work adaptable to specializing. We no more think of having the same boilermaker that puts a patch on a boiler, roll in tubes, than we would ask a tuber to put on a patch even if they do get the same rate. Therefore, I say, for the reason that specializing cuts costs, so it applies in management questions.

Without further discourse on the principles involved, I propose to give a few concrete examples of how graphical production methods permit a specialist to perform functions that assist the executive by supplying information that is "up to the day of looking at it," that show "What is causing delays," or "What will cause delays." The diagrams I have made are for obvious reasons of size and data made so as to show the principle. Colors are used on actual forms in order to create striking contrast.

**Locomotive or Passenger Car Repair Schedule**—Example 1 is a shop repairing locomotives. The methods apply equally to a passenger car repair shop. Our object is to assist all foremen to plan their work so that delays to output are min-

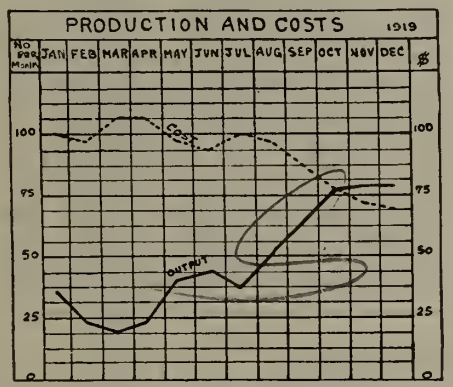


Fig. 1, What HAS happened.

imized. Analyzing the situation, we find we have about 30 departments, all of which receive some part of each locomotive or car to repair, and on all of which rests the responsibility of having it ready at a certain time, when the process of erecting demands it. Based on the road report, and a preliminary inspection our specialist, the scheduleman, in conjunction with the general foreman of the shop, determines that it will require so many days to complete. This period is determined by adding together the time required on all the various detail jobs known. From past experience we have on this work developed a series of schedules from 9 to 30 days each, one of which is applied to each locomotive or car as the case may be, as the work demands. The locomotive repair schedules are practically all based on one 18 day schedule, in that on all locomotives the operations for the first 5 days are practically the same, and for the last 7 days also, they are the same; the space in between being taken up by the department having the excessive or special work to do.

We now come to our first chart which we call a master schedule (fig. 2). The master schedule forms have detailed down the left side all the controlling detail operations or parts listed in the sequence in which they are required completed. At the top of the vertical columns we enter the locomotive or car number as each is taken in the shop, and then by the application of the particular schedule, on which each locomotive or car is to follow, we enter opposite the operation or part the date it is required completed or delivered. When this is done we take our second form called a date schedule (fig. 3), which is identical with the master schedule, except that instead of locomotives or car numbers at the top of the vertical column, we have all the days of the month, and we insert in the column for the date as entered on the master schedule the locomotive or car numbers opposite the operation.

This is done as soon as the locomotive or car is taken in the shop. By a four color code we record on both charts every day exactly what has happened, whether "on time," "shop late," "material delivery late," or "drawings late," in black, green, red or yellow, respectively. This is done as follows: Each day, at a certain time, the schedulemen make a check of all shops, after which they mark up the master and date schedules. Following this they make out from the date schedule for each departmental foreman, a list of operations due completed tomorrow, and include on it, especially marked, all items that are late. This daily order of work sheet is delivered to each foreman the night before the day it covers, so that they can plan their work to cover every item. Incidental to this a list of all late items in all shops is prepared for the general foreman and superintendent's use in order that they may use their influence to prevent further delays.

Summarizing this example, we provide each departmental foreman with a list of work which must be done tomorrow; we provide a list of late operations and material so that delays may be investigated and something can be done early in the progress. We have before us a graphic record of each locomotive or car's progress, showing each delay, as it occurs, and we have a graphic record of each day's progress, from which weak points can be seen at a glance. The result of this performance is that we get a co-operative effort, because each department, being familiar with the process, realizes that the management knows what is going on and can measure each man's effort. It makes it unnecessary for foremen to leave their shops to trace material, this being part of scheduleman's duties. Changes that occur when extra work is found necessary, causing a set back to the original date of delivery are automatically taken care of by the production department. The net result is a shorter number of days in the shop per unit, time between jobs reduced and lower costs.

**Locomotive or Passenger Car Repair Costs**—Example 2 may be considered a

continuation of the first example in that it concerns costs. It is important that we know certain detail costs at current periods. Costs do the shop little good if they come when the job is complete and away from us. Our proposition then is to keep track of locomotive repair expenditure in order to keep the cost right. The method is suitable for all classes of work where average costs are maintained and used as a base for expenditure. It is not recommended in this form for manufacturing of a small, multitudinous, or varied nature.

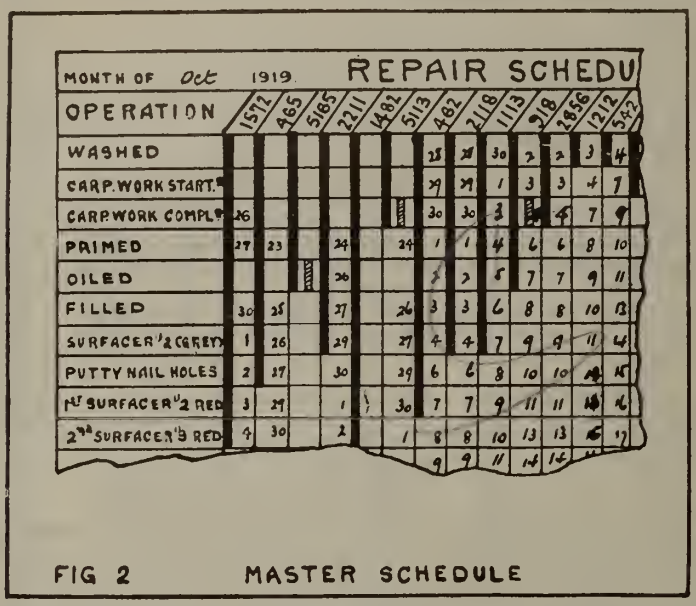


FIG 2 MASTER SCHEDULE

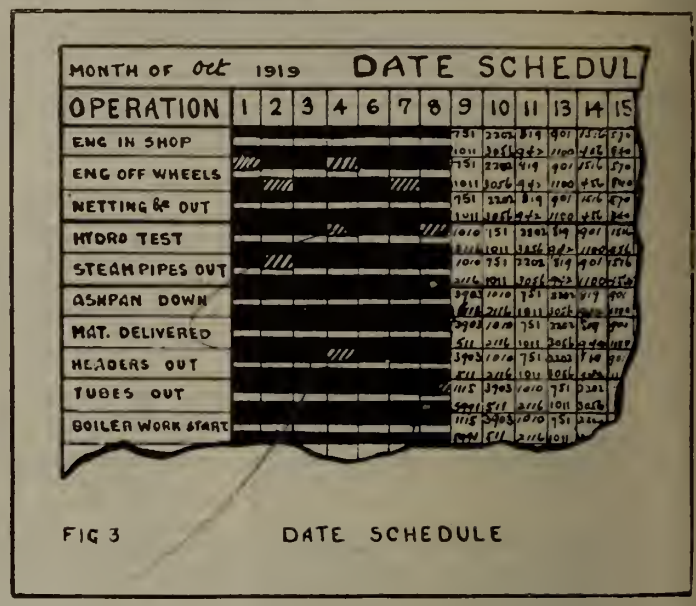


FIG 3 DATE SCHEDULE

The chart shown in fig. 4 is a graphic representation of current locomotive repair costs. The method here also would apply to passenger equipment costs. On the left is a scale of dollars large enough to cover the anticipated range. Each vertical column is headed with the locomotive number, the date it came in the shop, and the class of repair it is getting is also inserted small for reference. By arrangements with the cost department these daily costs are given a preference, and are supplied the second day after they are incurred, on a special form for the purpose, and on the cost chart a black line is extended under each locomotive daily, to show total cost to date. In each locomotive cost column, a red cross line is drawn at a point opposite the estimated cost of the job. An estimate is made for each locomotive based on an average in the case of straight repairs, as soon as inspection is complete, and which includes extra allowances in the case of extra or special repairs. Now, when an executive looks at the chart, he notes particularly those that have gone past the red mark and by consultation with the locomotive master schedule (similar to chart 2) he sees what has happened, when it happened and the progress of that particular locomotive. He is then in a position to act if his judgment indicates the cost is abnormal. It will be noted that short thin black lines extend from each locomotive cost line, at more or less irregular intervals, with a number close at hand. These lines are to indicate the amount added each day, and the number represents the date. We can thus see whether the labor expended has been irregular, or whether it is a steady growth. This is a clear indication of good or bad organization in the shops. Very great use can be made of this chart. It shows poor distribution of labor in detail and enables conditions that bring about high costs to be thoroughly analyzed and acted upon before the question is asked.

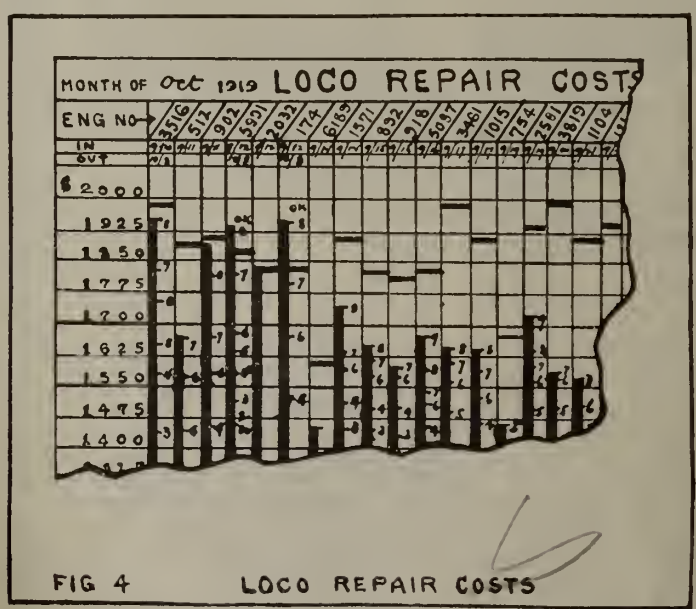


FIG 4 LOCO REPAIR COSTS

Cost of Manufactured Material—Example 3 concerns the efficiency and cost of detail manufactured material. Our desire is to know the efficiency and cost of each order up to date, during its progress through the shops. The method described is used by manufacturing concerns which have found that the way to control costs is in the shop while the job is in progress. It is applicable, in a form adapted to railway back shop manufacturing, and is a real way to keep these costs right. It consists of a job cost sheet, and is kept and entered up in the shop office. These sheets are kept in loose leaf book form, and the duties of the cost clerk are to enter in the proper column, from the daily time cards, the costs incurred the previous day. Thus by noon the cost of each order, up to the previous evening, should be entered. On each sheet is detailed the standard method of doing the job and the standard time allowed for each operation. This information is obtained from the production department, which develops the correct method, in conjunction with the shop engineer and foreman of the department, who, at the same time, recommend such

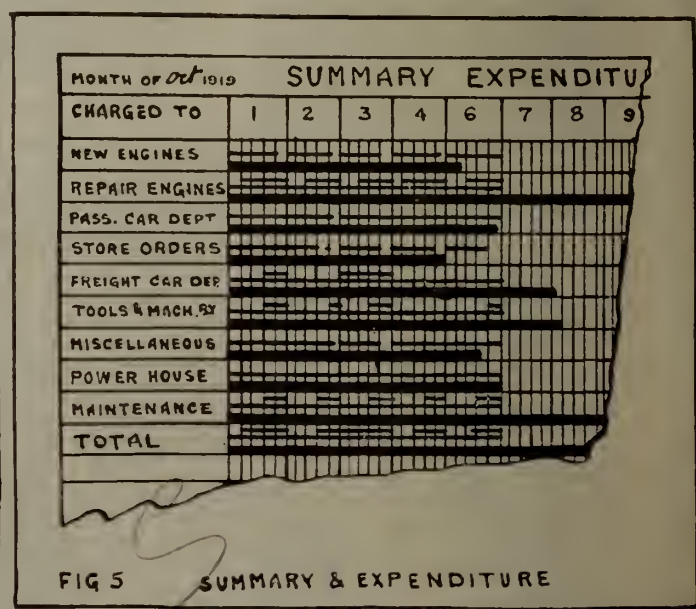


FIG 5 SUMMARY & EXPENDITURE

special jigs and tools as may be deemed necessary. When the order is a special one, that is, unusual, or rare enough not to warrant making standards for further use, a summary estimate is made up for each operation by the production department, in order that a daily check may be kept on the job. The duty of the cost clerk is to call the attention of the foreman, or party concerned, when the cost exceeds the allowance up to the point in the progress the order has reached. We thus have a means of keeping our foreman posted up to date on the cost of each job, at all points of its progress, not when it is done and too late for him to do something.

**Major Account Expenditure**—Example 4 is a form that we use to show us graphically our unit and summary expenditures on major accounts. It was developed by the late H. L. Gantt and used effectively to record progress of airplane and munition manufacture, also many other items in his work for the U.S. Government during the war. We want to know how our daily expenditure on each account compares with the allowance for the day, also how our total expenditure to date compares with the total allowance to date on each account. The chart, fig. 5, contains one vertical column for each day of the month, over which the date is inserted. On the left hand side the name of each account is inserted. We then calculate the allowance for each working day of the month and enter it for reference on the right hand side of the chart. Now in making up the chart it must be understood that the distance horizontally between each date column represents 100%, or the allowance figure for the day, on the right, and as your actual expense figures are received, you make a line across that space equal to the amount actually expended. If less than the allowance, this line will not cover the space, if more than the allowance, an extra line over the one covering the space shows how much. Directly under this line, representing the daily expenditure, is a thicker line, that represents summary cost to date. This line is merely extended daily, by the same amount as entered under the daily cost column, except that it, being no respecter of dates, it shows by its total length, whether the account is over or under expended to date, the comparative point being always the line of the date up to which the chart is entered.

While this sounds somewhat complex, it really is extremely simple in operation and we have a complete record on each account of how much, when, and on what account we have over or under expended. The chart is soon readable by anyone and shows immediately how close instructions are being attended to. As may be seen, the idea is one of vast possibilities outside of costs, where unit and summary data are required.

**Building New Equipment**—Example 5 covers the manufacturing of new equipment, such as locomotives, passenger cars or freight equipment of any description. Here a new element demands first consideration, and that is raw material, the source of which we do not control. It goes without saying that the shops can make no progress without material and drawings. Therefore, we require practically all the items that are not stores stock to be included on our schedule for erection. Material that is regular stores stock requires to be checked at definitely determined periods, before it is required for erection, but by reason of the number of items it is usually followed on a special chart. It is essential, however, that all castings and all purchased material be listed on our erecting schedule. Our object is to complete so much equipment at a certain date. On the master schedule chart, we list all these parts on the left hand side, and head all our vertical columns, which cover a period of three months, with the date. We insert the completion date at the point, the first unit is required completed, and, working back from that date for each item, we then insert the date each item is required completely machined, ready for erection. Then, from each of these dates, we compute the necessary time for machining each item, which gives us the date raw material must be available. After this we take into account the necessary time to deliver patterns, and to obtain material from brass, steel or grey iron foundry or other source from which material is obtained, and thus we arrive at the date drawings must be completed. All these dates are marked plainly on the chart and the parties concerned are given a copy of the schedule. The whole form represents what must be done in order that the final completion date be made. It does not matter if material arrives before that date, but a certain time before each item becomes due, our schedule tracers commence to trace the party concerned, in order to prevent avoidable delays. Each day, as it passes, one date column is filled in with the proper color, to represent whether item is "on time," "shop late," "material late" or "drawings late." Black represents "on time" in every case, and green, red and yellow, respectively, represent late on the other items. This color scheme is standard on all charts and a clear indication at all times is available of the general condition of the order. A permanent record is incidentally available, showing reasons for delays, which places the responsibility where it belongs. It also shows much good matter for consideration when future orders are being placed. Its chief value to the shop is that it shows what is due to be done each day, and shows at a glance how the material is coming along, and how dates are being maintained so that the shops can be organized accordingly. We are able very definitely to advise the management months ahead, that, for the reasons shown, a change in programme may be necessary. The necessity of prompt action is also shown vividly when delays in initial stages have occurred. We use this system on all our new equipment programmes with very good results.

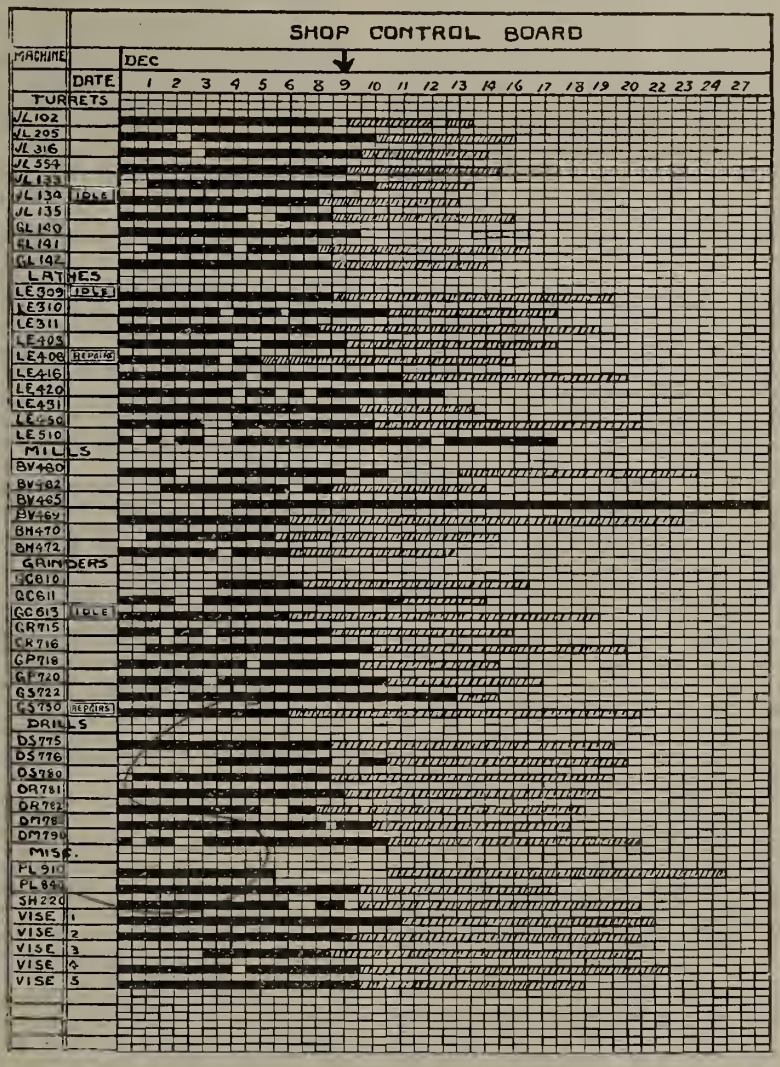


Fig. 7.

**Detail Operation Schedule**—Example 6 is a method used by the author to plan the work for every productive man and machine in a department. The object is to provide the shop foremen with information as to the "next job" for every man. Fig. 7 is a photograph of a shop control board, which consists of a board containing a separate slot for every man or machine, the identification being down the

left hand side. As each order is received by the production department, a ticket is made out for every operation, equal in length to the time allowed for each operation. The tickets are made on 20 to the inch profile paper, each division representing one hour. The board is black, and white lined vertically at weekly intervals. In the top slot is located the date strip, showing days of the month covering the period covered on the board. All the work for the shop is represented on the board, each operation being located in the proper slot. When material is available, each operation, from the first to the last, is located in the respective slots at the date, so that time between operations is at a minimum, taking into account also the continuity of work in each machine. Simultaneously with the making of the control board tickets, a job card is made for the shop foreman's office board. This board contains a compartment for each man, and the cards are arranged to correspond with the master control board with the "next job" card always in front. As each man nears completion of his work in hand, his gang boss goes to the board, and takes the next job ticket, and gets the material to the machine, together with the necessary tooling equipment. The card stays with the work, and then goes to the inspector, who, after inspection, passes it to the cost department. This system plans the work in great detail for the foremen. It shows when machines are overloaded, when idle due to breakdown, man absent, or out of work, all points of vital interest where costs and delivery are of prime importance. The scope of this paper does not allow of going into the detail of this system more elaborately, but it is a point to be noted particularly, that the most successful commercial concerns of today find that it pays to plan this detail by means of a specialist production department.

**In conclusion** I want to point out one fundamental principle which you may have noticed in all these methods. In every case a standard or task is set as the object to be attained, and that standard is set at the beginning of the job. All the methods provide a means of knowing whether the standard is maintained at all points in the progress up to the completion of each particular task. You will also note that I have preceded each example with a clear statement as to the object to be attained by each method. This is very important, on account of the multiplicity of detail which has to be dealt with, and which will often lead one off the track unless steadfastly maintained. Last, I ask you to note that while all this looks like so much statistical, clerical and accounting, it is an entirely different thing. The viewpoint is not that of an accountant, nor could it be handled by an accountant, it is distinctly a management engineering proposition for an engineer.

The principles outlined in this paper have been adopted by the C.P.R. management in the creation of a special department, called the production department, attached to the chief executive of Angus shops to develop this work. It is a distinctly new department for railway shops and credit must be given to W. H. Winterrowd, Chief Mechanical Engineer, for recognizing that there was no logical reason why methods of successful business institutions should not be incorporated into railway shops. To the best of my knowledge the Angus shops are the only railway shops on the continent that have such a department that is operating as a separate department with full confidence and co-operation of the supervising staff, all working for one result. All foremen, general foremen, and other supervisors, realize that one department, acting as a sort of clearing house for all material, can render better service than was possible when they each had to chase their own material from shop to shop. They recognize that when a certain output is required, that the special department can advise what operations are to be done each day, can advise on all items late, and state what must be done daily, so that the final result is what is required, because it has more complete information than any one department could possibly have or get. In all cases the basic schedules are developed by or with the departmental head concerned so that he feels that it is his schedule and he consequently realizes that he is being helped and actively assisted by the management.

The foregoing was read before the Canadian Railway Club, in Montreal, recently.

## Birthdays of Transportation Men in February.

Many happy returns of the day to:—

T. Britt, General Fuel Agent, C.P.R., Montreal, born there, Feb. 3, 1871.

J. S. Byrom, General Superintendent, Sleeping, Dining and Parlor Cars, and News Service, Eastern Lines, C.P.R., Montreal, born at Jersey City, N.J., Feb. 10, 1872.

H. R. Charlton, General Advertising Agent, G.T.R. and G.T.P.R., Montreal, born at St. Johns, Que., Feb. 9, 1866.

R. Colclough, Superintendent, St. Maurice Division, Quebec District, Canadian National Rys., Quebec, Que., born at Bic, Que., Feb. 24, 1871.

R. Crawford, Northwest Agent, Northern Navigation Co., Winnipeg, Man., born at Kingston, Ont., Feb. 21, 1870.

V. A. G. Dey, Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto, born at Aberdeen, Scotland, Feb. 4, 1883.

A. J. Donegan, ex-Superintendent, Algoma Eastern Ry., Sault Ste. Marie, Ont., born at Perth, Ont., Feb. 17, 1872.

R. W. Drew, Division Freight Agent, Saskatchewan District, C.P.R., Regina, born at Kingston, Ont., Feb. 17, 1874.

E. A. Evans, Consulting Engineer, ex-General Manager and Chief Engineer, Quebec Ry., Light & Power Co., Quebec, born at Kensington, Eng., Feb. 26, 1855.

Goodwin Ford, General Superintendent Western Lines, Dominion Express Co., Winnipeg, born at Bordentown, N.J., Feb. 23, 1859.

U. E. Gillen, General Manager, Toronto Terminal Ry. Co., Toronto, born at Brooklyn, Mo., Feb. 27, 1867.

L. L. Grabill, General Baggage Agent, G.T.R., Toronto, born at Walkerton, Ont., Feb. 6, 1878.

A. J. Hills, Assistant to President, Canadian National Railways, Toronto, born there, Feb. 15, 1879.

T. C. Hudson, General Master Mechanic, Eastern Lines, Canadian National Railways, Montreal, born at Brockville, Ont., Feb. 20, 1873.

H. Hulatt, Manager of Telegraphs, G.T.R. and G.T.P.R., Montreal, born at London, England, Feb 15, 1883.

C. Gardner Johnson, Lloyd's Agent for British Columbia, Vancouver, B.C., born at Dunblane, Scotland, Feb. 8, 1857.

A. H. Jones, Assistant Engineer, Canadian Government Railways, Moncton, N.B., born at Liverpool, Eng., Feb. 16, 1884.

John McCraw, ex-General Agent, Central Vermont Ry., New London, Conn., born at Craigvale, Ont., Feb. 6, 1868.

G. L. McCrea, Local Freight Agent, C.P.R., Vancouver, B.C., born at Springtown, Ont., Feb. 9, 1876.

T. McNab, ex-Master Mechanic, Alberta Ry. & Irrigation Co., now of Picture Butte, Alta., born in Scotland, Feb. 16, 1849.

J. K. McNeillie, Superintendent, Susquehanna Division, Delaware & Hudson Rd. (U.S.R.A.), Oneonta, N.Y., born at Toronto, Feb. 23, 1874.

J. D. McNutt, Inspector of Train Dispatching, Canadian Government Rys., Moncton, N.B., born at Stewiacke, N.S., Feb. 8, 1873.

D. C. Macdonald, Assistant General Claims Agent, C.P.R., Winnipeg, born at Elmsdale, N.S., Feb. 9, 1874.

C. S. Maharg, Superintendent, Cranbrook Division, British Columbia District. C.P.R., Cranbrook, born in Dufferin County, Ont., Feb. 4, 1867.

V. J. Melsted, ex-Engineer of Water Service, C.P.R., now of Milton Hersey Co., Winnipeg, born at Gardar, N.D., Feb. 20, 1887.

G. A. Montgomery, Vice President and General Manager, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., born at Bradford, Ont., Feb. 11, 1871.

A. Z. Mullins, Division Freight Agent, G.T.R., Grand Rapids, Mich., born at Appin, Ont., Feb. 14, 1862.

M. G. Murphy, General Agent, Passenger Department, C.P.R., Detroit, Mich., born at Halifax, N.S., Feb. 26, 1878.

J. E. Proctor, District Passenger Agent, C.P.R., Calgary, Alta., born at Sarnia, Ont., Feb. 17, 1878.

C. T. Ridalls, Car Foreman, C.P.R., London, Ont., born at St. Heliers, Jersey, Channel Islands, Feb. 8, 1864.

W. J. Robider, General Master Car Builder, C.P.R., Montreal, born at Savannah, Ga., Feb. 15, 1869.

A. E. Rosevear, General Freight Agent, G.T.P.R., and Grand Trunk Pacific Coast Steamship Co., Winnipeg, born at Montreal, Feb. 20, 1863.

J. G. Scott, ex-General Manager, Quebec & Lake St. John Ry., Quebec, born there, Feb. 13, 1847.

J. J. Scully, General Superintendent, Algoma District, C.P.R., North Bay, Ont., born at Montreal, Feb. 3, 1872.

G. Spencer, Chief Operating Officer, Board of Railway Commissioners, Ottawa, born in London, Eng., Feb. 21, 1865.

H. E. Suckling, Treasurer, C.P.R., Montreal, born at Gibraltar, Feb. 27, 1851.

A. P. Villain, City Ticket Agent, C.P.R., San Francisco, Cal., born there, Feb. 6, 1891.

F. L. Wanklyn, General Executive Assistant, C.P.R., Montreal, born at Buenos Ayres, Feb. 25, 1860.

J. R. Watson, Assistant Superintendent, Sleeping, Dining and Parlor Cars, and News Service, Eastern Lines, C.P.R., Montreal, born at Morpeth, Eng., Feb. 8, 1873.

A. Williams, Superintendent, London Division, Ontario District, C.P.R., London, born at Mono Road, Ont., Feb. 22, 1872.

# Canada's National Economic Problems.

By E. W. Beatty, K.C., President Canadian Pacific Railway.

Our national economic problem is not only to produce much, but to produce cheaply, and not only to produce much and cheaply, but to be so quick and elastic in our marketing arrangements as to be able to sell our goods always in the most profitable of the world's various and constantly changing markets. The right of every Canadian to look forward to prosperity, that is, to plenty of work, and wholesome work, for a return that will maintain a decent standard of living and provide something for the rainy day, is thus related closely to the condition of the railways of this country. For our railways are the means of quick and regular deliveries to market. They are to Canada what an efficient conveyor system may be to a factory which has otherwise no advantage over its older competitor, saving it time and expense in moving material into the receiving rooms, or from one machine to another, or out again to the ultimate consumer. In short, the ability of our railways to handle any possible peak load of traffic, of any character, in any direction, at any time, and cheaply, is something vital to every worker with hand or brain, from the most obscure of farm districts to the largest of our industrial centers.

For example: the apple crop in a well known Nova Scotian valley exceeded the estimate of the authorities by almost 75%. Instead of something over 1,000,000 barrels there were 2,000,000. Frost following close on the harvest reduced the time during which the apples could be moved in ordinary cars. Furthermore, the market for these apples, instead of lying largely in the United Kingdom, as in other years, developed with practically no warning in the United States and in Central and Western Canada. In other words, prices overseas had gone down; American bids were high. The difference between a large profit or a small profit to Canada on the year's work of these Annapolis Valley apple-growers became almost entirely a matter of railway service. In place of a normal crop to be hauled a few miles to the seaboard in ordinary cars, an unprecedentedly large crop had to be hauled in special refrigerator cars to distant cities in the United States and Canada. Details are not necessary. The crop, I may say, is still in process of being moved, but the peak load, which has passed, could never have been handled had the Canadian transportation machine not been the superior organization it is. The apple-growers in this case were served by a small railway company which had never before known a similar crisis. Almost 2,000,000 barrels had to be moved, 225 barrels a car. Through the Railway Association of Canada, that is, the old Canadian Railway War Board, the larger associates of this small railway, the Grand Trunk, Canadian National, and Canadian Pacific, scoured the Dominion to get together a supply of refrigerator cars, already scarce owing to the detention of Canadian refrigerators in the United States, to meet this extraordinary demand. These cars were gathered even from the very ends of the transcontinental lines. They were rushed to the Canadian National at Montreal and by the Canadian National forwarded to the small local carrier to which I have referred. Instead of recording in the government blue books for 1919 an export of so many dollars' worth of applies, Canada will be able to show an export much higher, due very largely to the efficiency of the railroads.

This is the kind of service the Canadian railways have been giving and are still able to give Canada. There was no breakdown during the war, though every other country had to make radical readjustments. No failure, when the signing of the armistice in Nov., 1918, brought about great changes in the character and direction of traffic. Between Nov., 1918, and Oct., 1919, they handled 271,500 returning soldiers through the ports of St. John, Halifax, and Portland, a movement involving 827 special trains, traversing over 2,427,162 train miles. I may add that a greater degree of comfort was assured each soldier on his homeward journey through Canada than was even attempted by either the United States or Great Britain. The return of commercial confidence after the first uncertainties of peace, and the change in freight traffic back to the lines of development which had been interrupted four and a half years before by the outbreak of war, was met without difficulty. Threatened labor troubles in Mar., 1919, were successfully dealt with by joint action through the Canadian Railway War Board. The settlement involved, it is true, serious but unavoidable outlays by the railways. It was effected about three months ago, but with no corresponding increase in railway rates. A strike of bituminous coal miners in the U.S. had no more serious reflection in Canada than a minor and temporary reduction in passenger train service. Canada, through the foresight of most of her railways in providing large stocks of fuel in advance, was able to avoid the serious freight embargoes which elsewhere were the result of the strike.

So much for the manner in which the transportation machinery of the country is carrying out its obligations to the Canadian producer. Other aspects of the transportation problem are less satisfactory. There are many people who look upon Canadian railways as custodians of magic fortunes which cannot be exhausted. That bookkeeping should be as simple and inexorable in its tale of losses and vanished profits to a railway as it may be to a corner grocer, is to these people unthinkable. It apparently does not occur to them that to no public is it more important than to the Canadian public that the good reputation of its railway securities in the world of thrift and investment should be carefully guarded. To those, however, who understand these things clearly and who view the matter from the standpoint of broad public interest, it is at once apparent that the Canadian public pays a very low rate for the quality of service rendered and that a time is rapidly approaching when, if Canadian railway securities are not to be made less desirable to investors than almost any other kind of industrial security, railway rates will either have to go up, or railway operating costs go down. Such persons recognize that it is not because the situation of the railways is an easy one that certain companies have been able to show net earnings—very low net earnings compared to the actual cash invested in the industry—but because in the past the shareholders of such companies have been, as they are today, courageous persons willing to supply the means for constructive enterprises in which no one but themselves had faith, and because, too, their officers have been skilled, resourceful and loyal business men, assisted by staffs filled with the spirit of pride and devotion to their work. This, indeed, is the thing which has made it possible for Canada's railways to function successfully during the war, without making anything like the demands that foreign roads, less efficient in serving their community, yet earning the safe rates and paying the same wages, have made upon their public exchequers. I do not believe that this strain upon the railways and this tendency to weaken the general reputation of Canadian railway securities should continue. The servant after all is worthy of his hire and railway capital is not less worthy a servant than other forms of capital whose earnings have not been so consistently depressed.

The net earnings, during the war years, of those companies which showed net earnings, would have been much lower had the Canadian railways been making expenditures for maintenance which circumstances would have justified, but which conditions prevented during that period. These arrears have now to be made up. During 1919 the C.P.R. laid 70,000 tons of steel rail. In place of, say, 2,000,000 ties, worth 44c in 1914, the C.P.R. laid 4,434,000 ties at 85c a tie. The sensational advance in the rate of railway wages is well known. Further advance may be necessary within the very near future, as indicated by discussions in the United States. The price of coal for locomotives was $3.09 in 1913. Now it is $4.77. The cost of hauling an average train (freight or passenger) one mile rose from $1.604 in 1913 to $2.494 in 1918. It is higher today. The operating expenses of one mile of line in 1915 were $4,152; in 1918, $7,046, and today they are even greater. On the other hand, railway rates, taking all classes of revenue together, have advanced scarcely 25%. I venture to say no other industry in the Dominion can show such moderation.

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**The Flin Flon Mine and Projected Railway**—A press report of Dec. 29 stated that Hayden and Stone, of Boston, had withdrawn from negotiations for the purchase of the Flin Flon mining property near Pas, Man., on the ground of the refusal of the present owners to grant an extension of the firm's option on the property for another year. The report added that negotiations had been opened for the sale of the property to the Anaconda Mine Co., Butte, Montana. The construction of a railway to serve the mining area in which the Flin Flon property is situated is under consideration, and the Manitoba Premier has intimated that if the Canadian National Rys. does not undertake it the Manitoba Government will.

**The Dominion Atlantic Ry.**, in conjunction with the Nova Scotia Department of Agriculture is offering prizes for the best acre of potato ground in the Annapolis valley served by its line.

## Quebec Provincial Aid to Railway Construction, 1905-1919.

The Quebec Minister of Public Works stated in the Quebec Legislature recently that the total length of railways built or subsidized by the Quebec Government from July 1, 1905 to July 1, 1919, was 2,648.11 miles. The following amounts were paid as subsidies during the period:—

| | | | |
|---|---|---|---|
| 1905-06 | $80,750.00 | 1912-13 | $ 9,652.90 |
| 1906-07 | 43,779.61 | 1913-14 | 8,750.00 |
| 1907-08 | 46,558.31 | 1914-15 | 8,750.00 |
| 1908-09 | 23,750.00 | 1915-16 | 47,890.94 |
| 1909-10 | 8,750.00 | 1916-17 | 750.00 |
| 1910-11 | 8,750.00 | 1917-18 | 750.00 |
| 1911-12 | 44,220.56 | 1918-19 | 750.00 |

The money grants given to railways, authorized but not exigible, at July 1, 1918, was $54,602.70; the land subsidies given to railways converted or capable of being converted into money authorized but not exigible at July 1, 1918, was $3,316.19; the land subsidies granted to railways, not converted into money and authorized but not exigible at July 1, 1918, was 8,701,064 acres.

## Motor Car, Hand Car, Velocipede and Push Car Operating Rules.

The Railway Association of Canada issued the following circular Jan. 9:—The following regulations to govern the use and operation of motor cars, hand cars, velocipedes and push cars have been prepared by the association at the suggestion of the Board of Railway Commissioners for Canada, with a view to assisting the establishment and observance of safe practices in the handling of the vehicles mentioned.

No motor car, hand car, or similar vehicle is to be operated on the railway without permission of the proper authority.

No person or persons, except employes in the discharge of their duty, shall be allowed to ride on such cars on the tracks of the railway, unless holding special permission from the proper authority.

The person in charge of the operation of car must inform himself of the movement of trains.

Immediately after starting, brakes must be tested, to ensure that they are in proper working condition. All cars not in actual use must be lifted off track, or otherwise placed clear of passing trains. They must not be left on or near road crossings. When unattended they must be locked.

When approaching railway, street and highway crossings and switches, cars must be under full control, and prepared to stop immediately. Cars must not be run over crossings protected by gates, until the gates are down; or over crossings protected by flagmen, until given "Proceed" signal by flagman.

Cars loaded with rails, frogs, ties, or similar material, must not go on main track without protection, as set forth in the company's rules.

Rails, frogs or similar material must not be carried on motor or hand cars, except in cases of emergency. Water kegs, track jacks, and other tools likely to derail car if they were to fall off, must be carried on side or rear of same.

Motor, hand or push cars must not be attached to a train.

Cars must not be run after sunset, or during foggy or stormy weather, except in cases of actual necessity. In such cases, on single track, a red light must be displayed to the front and to the rear, and on double track a white light to the front and a red light to the rear. During fogs and storms, flagmen should be sent out in each direction and the car run no faster than these flagmen can walk.

A distance of not less than 500 ft. must be maintained between two motor cars, and between hand cars or velocipedes following a moving train, and of hand cars and velocipedes moving in the same direction on the same track.

Motor, hand and velocipede cars must be run with great caution around blind curves, and must be stopped frequently, so that approaching trains may be heard.

Hand cars, unloaded push cars, and velocipede cars, must be passed from one track to another by lifting cars, instead of turning switches. When necessary to use switches, they are to be turned only under supervision of the foreman, who will be held responsible for seeing that they are left set and locked in proper condition.

In all cases a lookout must be kept in each direction, whether on single or double track.

The above rules do not apply to motor cars operated by train order.

## Canadian Pacific Railway Honor Roll 45.

| | | | |
|---|---|---|---|
| Ackerley, Roger | Clerk | Liverpool | Killed in Action |
| Armstrong, Andrew | Carpenter | Strathmore | Wounded |
| Atkinson, Herbert Jno. | Fireman | Brandon | Presumed dead |
| Aylen, G. H. S. | Clerk | Calgary | Died of wounds |
| Barber, C. W. | Fireman | Glacier | Shell shock |
| Beaver, Wm. Geo. | Clerk | Brandon | Wounded |
| Beesley, E. C. | Trucker | Toronto | Wounded |
| Bentley, C. W. S. | Assistant agent | Redcliffe | Wounded |
| Boucher, W. R. | Clerk | Regina | Killed in Action |
| Bourdeau, W. J. | Trainman | Kingston | Wounded |
| Bourns, J. E. | Fireman | Fort William | Presumed dead |
| Brown, Artbur | Teamster | Strathmore | Killed in Action |
| Bryant, Jas. | Locomotive fireman | Winnipeg | Wounded |
| Bulcock, Jim | Checker | Montreal | Wounded |
| Burgess, Fred | Stower | Winnipeg | Killed in Action |
| Cairns, James | Waiter | B.C. Coast Service | Wounded |
| Cameron, S. F. | Wiper | Regina | Wounded |
| Carmichael, Melville | Rodman | Glacier | Presumed dead |
| Cartwright, G. H. | Brakeman | Regina | Killed in Action |
| Colton, John | Assistant agent | Rush Lake | Wounded |
| Cook, Lionel Stewart | Waiter | Montreal | Wounded |
| Coulin, Louis Auguste | Clerk | Montreal | Wounded |
| Currie, Wm. Carmichael | Call boy | Brandon | Gassed |
| Dale, Edwin | Helper | Strathcona | Wounded |
| Dalton, Frances James | Clerk | Winnipeg | Killed in Action |
| Dawson, Chas. Jas. | Checker | Calgary | Killed in Action |
| Denne, Wm. Charles | Car repairer | Winnipeg | Killed in Action |
| Doyle, H. | Engineer apprentice | C.P.O.S. | Dead |
| Drysdale, Arthur | Electrician | Angus shops | Killed in Action |
| Easterbrook, R. | Boatswain's helper | C.P.O.S. | Killed in Action |
| Eaton, Jno. Jamison | Clerk | Vancouver | Wounded |
| Emigh, Lewis Carl | Car checker | Broadview | Wounded |
| Fairmar, R. W. | Clerk | Toronto | Wounded |
| Garrow, James | Commissionaire | Glasgow | Wounded |
| Gibbs, R. J. | Sectionman | Port Hope | Died of wounds |
| Gilbert, E. H. | Rodman | Strathmore | Wounded |
| Grist, Jas. Wm. | Brakeman | Regina | Wounded |
| Gulley, Wm. | Laborer | Smiths Falls | Wounded |
| Hampson, Fred | Laborer | Ogden | Killed in Action |
| Harrop, James Lawton | Ice foreman | Moose Jaw | Died of wounds |
| Heal, Alfred Norman | Waiter | Vancouver | Wounded |
| Hoare, Henry | Clerk | Moose Jaw | Wounded |
| Howard, Wm. | Sleeping car cond'r | Montreal | Killed in Action |
| Hughes, Geo. Bancroft | Clerk | Liverpool | Wounded |
| Hughes, H. R. | Fifth officer | Empress of Britain | Lost at sea |
| Kelly, James | Yard foreman | Toronto | Killed in Action |
| Kirkham, E. D. | Clerk | Montreal | Wounded |
| Knowles, Harold | Waiter | Montreal | Killed in Action |
| Livingstone, Herbert | Trainman | Brownville Div. | Wounded |
| McKelvey, Edwin Robt. | Trainman | North Bay | Killed in Action |
| McKinnie, H. T. | Watchman | Coquitlam | Wounded |
| McLean, A. J. | Laborer | Glasgow | Killed in Action |
| MacLean, Finlay Gordon | Collection inspector | Calgary | Wounded |
| McLeod, Roderick | Clerk | Glasgow | Wounded |
| McPherson, D. | Laborer | Glasgow | Killed in Action |
| McRae, Alex. | Operator | Winnipeg | Died of wounds |
| Marriott, Wm. | Shed foreman | Swift Current | Presumed dead |
| Milne, Hunter Gilson | Brakeman | Edmonton | Killed in Action |
| Moore, Richard | Laborer | Calgary | Wounded |
| Murray, J. H. | Engineer | Bankhead | Killed in Action |
| Olive, Arthur K. | Inspector | Calgary | Wounded |
| Parsons, A. E. | Cashier | Avonmouth | Wounded |
| Paton, Robert | Clerk | Sutherland | Wounded |
| Perry, Geo. Wm. | Clerk | Nortb Bay | Wounded |
| Potter, Chas. Albert | Clerk | Edmonton | Wounded |
| Potts, Thos. | Storeman | Montreal | Wounded |
| Powell, Thos. R. | Fireman | Smiths Falls | Killed in Action |
| Rak, John | Scraper | Lethbridge | Presumed dead |
| Rawlings, Arthur | Clerk | Winnipeg | Wounded |
| Rodger, Wm. Alex. | Clerk | Vancouver | Presumed dead |
| Rutledge, Melville | Brakeman | Macleod | Wounded |
| Saunders, Thos. Percy | Brakeman | Lethbridge | Wounded |
| Scribner, Harry Tennyson | Checker | West St. John | Wounded |
| Shee, H. J. | Engineer | B.C. Coast Service | Lost at sea |
| Slim, Wm. Hy. | Clerk | Calgary | Wounded |
| Smyth, Albert Kingsley | Fireman | Ottawa | Wounded |
| Still, Geoffrey | Fireman | B.C. District | Died of wounds |
| Thompson, Geo. R. | Locomotive man | Moose Jaw | Killed in Action |
| Tidswell, Isaac | Helper | Macleod | Wounded |
| Walker, John | Constable | Montreal | Gassed |
| Wallace, James | Engineer | B.C. Coast Service | Lost at sea |
| Wallace, Walter | Ditcher fireman | Lethbridge | Gassed |
| Walmlsey, R. T. | Clerk | Liverpool | Killed in Action |
| Watson, J. G. | Officer | Pacific Service | Lost at sea |
| Watts, Dennis Wm. | Cleaner | Toronto | Wounded |
| Wilcox, Thos. A. | Cook | Montreal | Died of wounds |
| Wilkes, Walter Wm. | Locomotive fireman | Scbreiber | Wounded |
| Wilkinson, Chas. McWhinnie | Cook | Moose Jaw | Killed in Action |
| Wood, Arthur Douglas | Laborer | Calgary | Wounded |
| Woods, Thos. Soulsby | Oiler | Victoria | Wounded |
| Young, Edwin | Specialist | Angus | Wounded |

Shown on honor lists to Dec. 31, 1919: Killed, 948; wounded, 2,046; total, 2,994.

## C.P.R. War and Employment Figures.

The following figures, revised to Dec. 31, 1919, show the C.P.R. employes' war record, and the employment by the company of soldiers discharged from the army:

| | |
|---|---|
| Total reported as joining army | 10,875 |
| Dead | 1,042 |
| Wounded | 2,045 |
| Re-employed in the service | 6,463 |
| Other soldiers given employment | 8,137 |
| Total soldiers given employment | 14,600 |

## Canadian Collieries (Dunsmuir) Reorganization.

The plan for the reorganization of Canadian Collieries (Dunsmuir), which has been under consideration of a bondholders' committee, appointed in 1915, provides for the cancellation of the following securities:—First mortgage gold bonds and all arrears of interest, £2,054,000, second mortgage debenture stock; 3 year notes, £50,000; preferred stock, £3,500,000 (out of £5,000,000), and common stock, £9,900,000 (out of £10,000,000); and for the creation of the following new stocks: £1,027,000 of 5% non cumulative A income debenture stock; £1,027,000 of 5% non cumulative B debenture stock; $3,400,000 of new preferred stock, and $1,027,000 of new common stock. Holders of existing bonds will receive for every £100 of bonds now held, £50 of A debentures, £50 of B debentures, $100 of preferred stock and $50 of common stock, and so on in proportion for amounts of less than £100. The holders of the £50,000 three year notes will receive $250,000 of preferred stock, of which a balance of $1,096,000 will remain unissued after the bondholders' claims have been satisfied. A new debenture stockholders' committee is to be appointed to issue prior lien securities to an amount not exceeding $1,500,000 at 10%, and other powers. Subject to approval half of the net earnings are to be applied to redeeming A debentures by annual drawings, and the remainder to paying interest on A and B debentures, while any balance is to be utilized for the redemption of A debentures until paid off, and then to the payment of dividends on the capital stock.

The Transportation Club of Toronto has elected the following officers: President, A. M. Adams, Local Freight Agent, G.T.R.; Vice President, W. A. McIlroy, chief clerk, District Passenger Agent's office, C.P.R.; Treasurer, M. Macdonald, Assistant Superintendent of Weighing, G.T.R.; Secretary, W. A. Gray; committee chairmen, membership, C. E. Horning, District Passenger Agent, G.T.R., entertainment, E. R. Thorpe, City Freight Agent, G.T.R.; publicity, T. Marshall, Traffic Manager, Board of Trade; sick, J. J. Rose, Robert Reford Co.; reception, W. Fulton, Assistant District Passenger Agent, C.P.R.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and Public Elevators in the East.

| Week ended Jan. 2, 1920. | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William— | | | | | | |
| C.P.R. | 143,135 | 30,628 | 78,541 | ..... | 34,032 | 286,336 |
| Empire Elevator Co. | 351,770 | 228,108 | 157,078 | 17,144 | 27,954 | 782,054 |
| Consolidated Elevator Co. | 568,211 | 58,118 | 73,401 | 36,170 | 8,562 | 744,462 |
| Ogilvie Flour Mills Co. | 408,861 | 144,500 | 85,067 | ..... | 38,850 | 677,278 |
| Western Terminal Elevator Co. | 543,044 | 57,223 | 16,525 | 23,560 | 6,928 | 647,280 |
| G. T. Pacific | 536,560 | 272,259 | 50,108 | 24,893 | 23,515 | 907,335 |
| Grain Growers' Grain Co. | 660,933 | 368,512 | 154,915 | ..... | 64,892 | 1,249,252 |
| Fort William Elevator Co. | 369,650 | 324,400 | 43,393 | 12,770 | 8,482 | 758,695 |
| Northwestern Elevator Co. | 548,740 | 10,085 | 39,024 | 43 | 68 | 597,960 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 639,081 | 259,232 | 141,186 | 1,019 | 46,326 | 1,086,844 |
| Sask. Co-op. Elevator Co. | 1,228,539 | 225,728 | 45,272 | 30,924 | 17,071 | 1,547,534 |
| Canadian Government Elevator | 127,796 | 76,820 | 23,109 | 65,813 | 12,339 | 305,877 |
| Thunder Bay | 277,024 | 213,696 | 93,348 | 8,165 | 10,908 | 603,141 |
| Davidson and Smith | 49,710 | 76,816 | 10,740 | ..... | 1,081 | 138,347 |
| Eastern-Richardson | 341,092 | 98,300 | 38,548 | 4,942 | 30,304 | 513,186 |
| Vancouver Can. Gov't. Elevator | 1,588 | 15,530 | 4,044 | ..... | ..... | 21,162 |
| Total public terminal elevators | 6,795,734 | 2,459,955 | 1,054,299 | 225,443 | 331,312 | 10,866,734 |
| Saskatoon Can. Gov't. Elevator | 441,455 | 423,034 | 2,338 | ..... | ..... | 866,827 |
| Moose Jaw Can. Gov't. Elevator | 275,977 | 203,961 | 6,056 | 9,086 | †2,740 1,270 | 499,090 |
| Calgary Can. Gov't. Elevator | 1,401,680 | 467,811 | 36,640 | 182 | †1,791 5,611 | 1,913,715 |
| Total Interior Terminal Elevators | 2,199,112 | 1,094,806 | 45,034 | 9,268 | 11,412 | 3,279,632 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 81,155 | 400,057 | 189,381 | ..... | 62,857 | 733,450 |
| Tiffin, G.T.P. | 418,728 | ..... | ..... | ..... | ..... | 418,728 |
| Port McNicoll | 1,012,862 | 1,197,078 | 70,453 | ..... | 31,751 | 2,312,144 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 856,826 | 119,200 | ..... | ..... | ..... | 976,026 |
| Kingston— | | | | | | |
| Commercial Elevator Co. | ..... | 5,829 | ..... | ..... | ..... | 5,829 |
| Port Colborne— | | | | | | |
| Maple Leaf Milling Co., Ltd. | 757,069 | ..... | ..... | ..... | ..... | 757,069 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 2,989,808 | 5,806,624 | 41,204 | ..... | ..... | 3,611,636 |
| Montreal Warehousing Co. | 1,400,568 | 35,852 | 10,622 | ..... | ..... | 1,447,042 |
| Ogilvie Flour Mills Co. | 859,198 | ..... | ..... | ..... | ..... | 869,632 |
| Quebec Harbor Commissioners | 399,248 | 34,416 | ..... | ..... | ..... | 433,664 |
| West St. John, N.B., C.P.R. | 426,225 | 307,546 | 381,816 | ..... | ..... | 1,115,587 |
| St. John, N.B., Can. Nat. Rys. | 45,509 | ..... | 29,090 | ..... | ..... | 74,599 |
| Halifax, N.S. | 122,042 | ..... | 50,586 | ..... | ..... | 172,628 |
| Total Public Elevators | 9,366,238 | 2,680,602 | 783,586 | ..... | 94,608 | 12,928,034 |
| Total Quantity in Store | 18,284,084 | 6,235,363 | 1,882,019 | 234,711 | 437,332 | 27,074,409 |

†Corn.

## Grain Inspected at Western Points.

The following figures, compiled by the Dominion Bureau of Statistics, show the number of cars of grain inspected at Winnipeg and other points on the Western Division, for Dec., 1919, and for 4 months ended Dec. 31, 1919 and 1918 respectively:—

| | | | |
|---|---|---|---|
| C.N.R. | 4,178 | 26,771 | 27,334 |
| C.P.R. | 7,909 | 44,799 | 48,491 |
| G.T.P.R. | 2,455 | 12,511 | 11,044 |
| G.N.R. (Duluth) | 42 | 455 | 677 |
| Total | 14,584 | 84,536 | 87,546 |

Railway Hotels—The Dominion Atlantic Ry. is reported to have taken over the Aberdeen Hotel, Kentville, N.S., and to be preparing it for the summer tourist traffic.

Rails for Roumania—The Dominion Iron and Steel Co. has received an order for 7,500 tons of steel rails, of a special section, to weigh 30 kilos per meter, and to be delivered to the Roumanian Commission at Sydney, N.S., for shipment, about February.

French Railway Rates Advanced—In order to meet an anticipated deficit of 2,400,000,000 francs in the operation of French railways, the government asked parliamentary authority for an increase of rates, which was approved by the Chamber of Deputies, Dec. 31.

The Cornwall Terminal Co., to which reference was made in Canadian Railway and Marine World, Aug., 1919, pg. 440, has been granted supplementary letters patent under the Dominion Companies Act, increasing its authorized capital stock from $100,000 to $200,000.

R.F.Richardson, formerly Local Freight Agent, C.P.R., Edmonton, Alta., who has been appointed General Agent, C.P.R., Alaska and Yukon Territory, at Juneau, Alaska, in writing Canadian Railway and Marine World to change his address, says that he does not wish to miss a copy of the paper.

The Canadian Fur Auction Sales Co., which is in formation in Montreal, has among its promotors, Lord Shaughnessy, Chairman of the Board C.P.R.; Sir Herbert Holt, a C.P.R. director, and Lorne C. Webster, President Quebec Ry., Light and Power Co., Webster Steamship Co., etc.

Victoria and Sidney Ry. Liquidation—The Saanich, B.C., Tp. Council is reported to be negotiating with the Victoria and Sidney Ry. liquidator for the purchase of the abandoned right of way from Saanichton northerly to the junction with the Canadian Northern Pacific Ry. It has taken steps to protect the road crossings, the cost of repairs to the same to be recovered from the parties liable, and to protect the township's rights as to taxes, etc., pending the sale of the property.

Detroit River Bridge—A press report of Jan. 13 states that preliminary surveys for the projected bridge across the Detroit River between Windsor, Ont., and Detroit, Mich., have been started and that C. E. Fowler, who is associated with G. Lindenthal, New York, who is designing the bridge, is in charge of the work. He is reported to have stated that the logical site for the Canadian end of the bridge is at the Huron line in Sandwich, where it would serve not only the center of the border population, but also the railway system and the electric railways.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the board are given in full on another page of this issue.

General order 275. Dec. 16.—Ordering form and manner in which railway companies shall file tariffs of all freight, passenger, express, telephone and telegraph and supplements thereto, applying between points in Canada.

General order 276. Dec. 31.—Continuing in effect on and from Jan. 1, 1920, subject to provisions of Railway Act, 1919, tolls of railway companies subject to board's jurisdiction.

General order 277. Dec. 29.—Directing manner of indicating changes in freight, passenger, express, telephone and telegraph tariff schedules.

General order 278. Jan. 3.—Authorizing express companies to charge tolls published in their tariffs filed with the board.

General order 279. Jan. 5.—Disallowing Canadian Freight Association's tariff C.R.C. 19, effective Aug. 20, 1918, giving rate on fresh fruits to Winnipeg and ordering it forthwith to file tariff restoring rates on fresh fruits from Ontario and Quebec points to Winnipeg, Portage la Prairie and Brandon, Man., prescribed in order dated Oct. 10, 1904, as increased by order 212, Jan. 5, 1918, and further increased by order in council P.C., 1863, July 27, 1918, said increases having been continued in effect by general order 276, Dec. 31, 1919.

General order 280. Dec. 23, 1919. Amending order 248, Aug. 19, 1918, by striking out regulation 9, page 2, and substituting therefor: 9.—That a signal of a serviceable type, to be approved by the board, be used to display the signals directed to be provided under rules 3 (b) and 6 (yellow signal) of this order and rule 35 (yellow signal), of the Uniform Code of Operating Rules.

29,145. Dec. 12.—Authorizing Grand River Ry. to increase its standard maximum passenger fare to 2,875c a mile.

29,146. Dec. 12.—Relieving G.T.R. from providing further protection at first crossing north of Milton, Ont.

29,147. Dec. 17.—Authorizing Canadian National Rys. to open for traffic, its Grenville cut-off, near mile 60, west from Joliette, in Lot 359, Range 1 Block C, Chatham Tp., Que.

29,148. Dec. 17.—Authorizing Essex Terminal Ry. to build siding across Shephard Ave., Windsor, Ont.

29,149. Dec. 15.—Authorizing Oshawa Ry. to build second track across Wilkinson and Barrie Aves., and to make changes in location of spur, in Oshawa, Ont.

29,150. Dec. 15.—Approving location and details of Grand Trunk Pacific Ry. station at Vivian, Sask.

29,151. Dec. 16.—Authorizing Canadian Northern Saskatchewan Ry. to build across Assiniboia Ave., Peebles, Sask.

29,152. Dec. 17.—Amending order 29,023, Nov. 15, which authorized Canadian Northern Western Ry. to carry freight traffic over its Hanna-Medicine Hat Branch from Bonar, Alta., by striking out the word "freight."

29,153. Dec. 13.—Relieving Canadian National Rys. and C.P.R. from maintaining signalman on Sundays to operate interlocking plant at crossing at Conquest, Sask.

29,154. Dec. 12.—Approving agreement, Nov. 21, 1919, between Bell Telephone Co., and Donegal Telephone Co., Renfrew County, Ont.

29,155. Dec. 12.—Authorizing G.T.R. to rebuild bridge 88 across the narrows at mile 120.39, near Atherley Jct., Ont.

29,156. Dec. 16.—Authorizing Saskatchewan Government to build highway crossing over C.P.R. station grounds in n.e. ¼ Sec. 9, Tp. 37, Range 25, west 3rd meridian.

29,157. Dec. 13.—Authorizing Canadian National Rys. to connect with the International Bridge & Terminal Co.'s tracks and Shevlin-Clarke Co.'s spur at Fort Frances, Ont.

29,158. Dec. 12.—Approving location of C.P.R. Lanigan northeasterly branch from mile 0 to 60.98, Saskatchewan, also authorizing the crossing of 53 highways.

29,159. Dec. 5.—Authorizing Hamilton Radial Electric Ry. to build temporary spur for Firestone Tire and Rubber Co. of Canada, in Barton Tp., Ont.

29,160. Dec. 12.—Ordering Toronto Ry. to pay to C.P.R., $10,093.98, being 10% of estimated cost of building subway at Avenue Road, Toronto, with interest at 5% on half cost of work during construction and on total cost from completion to date, viz.: $13,807.01, in all, $23,900.99.

29,161. Dec. 17.—Dismissing application of O'Reilly & Belanger, Ltd., Ottawa, Ont., respecting trestle accommodation on G.T.R.

29,162. Dec. 17.—Authorizing G.T.R. to build spur for Knechtel Furniture Co., Hanover, Ont.

29,163. Dec. 19.—Authorizing Canadian National Rys. to cross trail on River Lot 33, Tp. 46, Range 25, west 2nd meridian, Sask.

29,164. Dec. 19.—Relieving Brantford & Hamilton Electric Ry. from providing further protection east of Echo stop, 2½ miles from Brantford, Ont.

29,165. Dec. 19.—Approving agreement, Dec. 4, between Bell Telephone Co. and Thessalon Tp., Algoma District, Ont.

29,166. Dec. 18.—Approving change of work, specification and plan of culvert to be built under G.T.R. at mile 12.47, Doucets Landing Branch, Que.

29,167. Dec. 18.—Ordering Esquimalt & Nanaimo Ry. to appoint station agent at Qualicum Beach, B.C., by Feb. 1, 1920.

29,168. Dec. 18.—Relieving Dominion Express Co. from providing cartage service at Courtright, Ont.

29,169. Dec. 18.—Relieving Canadian National Rys. from providing further protection at crossing at first public road north of Anson station, Ont.

29,170. Dec. 20.—Approving agreement, Dec. 6, between Bell Telephone Co. and Egypt Telephone Co., Ontario County, Ont.

29,171. Dec. 20.—Extending to Jan. 15, 1920, time within which Lake Erie & Northern Ry. may operate over G.T.R. crossing at Brantford, Ont., pending installation of interlocking plant.

29,172. Dec. 12.—Authorizing Toronto, Hamilton & Buffalo Ry. to operate over Hamilton & Dundas St. Ry., on Aberdeen Ave., Hamilton, Ont.

29,173. Dec. 19.—Authorizing Canadian National Rys. to build bridge over Carillon-Grenville canal, Grenville Tp., Que.

29,174. Dec. 20.—Extending to Jan. 15, 1920, time within which Lake Erie & Northern Ry., pending installation of interlocker, may operate over Toronto, Hamilton & Buffalo Ry., in Brantford, Ont.

29,175 to 29,177. Dec. 23.—Authorizing C.P.R. to build its irrigation canal, Taber Irrigation District, across its track in Secs. 27, 14 and 36; Tp. 9; Range 17; west 4th meridian, Alta.

29,178. Dec. 22.—Relieving G.T.R. from providing further protection at first crossing east of Cataraqui crossing 2 miles west of Kingston Jct., Ont.

29,179. Dec. 22.—Relieving C.P.R. from providing further protection at the first road allowance west of Minnedosa Subdivision, Man.

29,180, 29,181. Dec. 23.—Authorizing C.P.R. to build irrigation canal, Taber Irrigation District, across its tracks in Sec. 28, Tp. 9, Range 18, and Sec. 28, Tp. 9, Range 17, west 4th meridian, Alta.

29,182. Dec. 9.—Dismissing application of Vancouver and Districts Joint Sewerage and Drainage for order fixing rate on sand and gravel on British Columbia Electric Ry. Lulu Island Branch, from Vancouver Terminals to 24th Ave.

29,183. Dec. 23.—Authorizing G.T.R. to use bridge carrying highway over its main line near Kingsey, Que.

29,184. Dec. 22.—Ordering Vancouver, Victoria & Eastern Ry. & Nav. Co. (G.N.R.), to provide proper drainage for water to prevent its flooding Thos. Sheaves' land at Sunbury, B.C., water so collected in railway cuts to be taken out at northern and southern ends of respective cuts.

29,185. Dec. 22.—Rescinding order 10,162, Apr. 14, 1910, re G.T.R. spur for D. G. Cooper, Collingwood, Ont.

29,186. Dec. 19.—Dismissing complaint of residents between Rockland and South Indian, Ont., against alleged unsatisfactory train service by G.T.R.

29,187. Dec. 23.—Ordering that crossing of British Columbia Electric Ry. and Esquimalt & Nanaimo Ry., near Russell, B.C., be protected by watchmen between 8 a.m., and midnight only, instead of by day and night watchmen, as required by order 18,733, Feb. 18, 1913.

29,188. Dec. 9.—Rescinding order 21,412, Feb. 24, 1914, which authorized Canadian Northern Ry. to remove rails on siding built for Alberta Agencies, Edmonton, Alta.

29,189. Dec. 27.—Amending order 29,139, Dec. 11, which authorized C.P.R. to divert road allowance in n.e. ¼ Sec. 32, Tp. 28, Range 5, west 3rd meridian, Sask., at mile 100.2, by substituting 28 for 38, after Tp.

29,190. Dec. 19.—Authorizing Canadian National Rys. to cross trail on River Lot 33, Tp. 46, Range 25, west 2nd meridian, Sask.

29,191. Dec. 26.—Relieving G.T.R. from providing further protection at crossing on Lancaster St., Kitchener, Ont.

29,192. Dec. 30.—Approving Grand River Ry. standard passenger tariff.

29,193. Dec. 27.—Approving plans of Kettle Valley Ry. standard trestle to be built on its Copper Mountain Branch, B.C.

29,194. Dec. 26.—Authorizing Canadian National Rys. to open for traffic, its Oliver Branch, from Oliver to mile 98.5, speed of trains limited to 15 miles an hour; except between miles 36 and 90, where the limitation is 25 miles an hour.

29,195. Dec. 30.—Authorizing G.T.R. to remove Pilon siding, 3 miles west of Casselman, Ont.

29,196. Dec. 27.—Authorizing London and Port Stanley Ry. to build gauntlet track across Mill Creek bridge and Palm St., with switches and crossover tracks and to rearrange Pere Marquette Rd. tracks to give sufficient clearance for poles for the electrification of the tracks.

29,197. Dec. 27—Ordering Atlantic, Quebec & Western Ry. to turn the room at present used at Paspebiac, Que., as an office, into a waiting room with one window facing the track and another the end of the building, sufficient space for office purposes to be taken off the freight shed.

29,198. Dec. 29.—Extending to Apr. 30, 1920, time within which interlocking plant shall be installed at crossing of Canadian National Rys. by Fort William Electric Ry., at intersection of Victoria Ave., and Vickers St., at intersection of Franklin St., Fort William, Ont.

29,199. Dec. 27.—Extending to Feb. 27, 1920, time within which C.P.R. shall install distant signals where its line crosses Canadian National Rys. at Bonarlaw, Ont.

29,200. Dec. 26.—Approving C.P.R. clearances at Vancouver Ice and Cold Storage Co.'s warehouse, Vancouver, B.C.

29,201. Dec. 23.—Relieving C.P.R. from providing further protection at Aberdeen Ave., Winnipeg.

29,202. Dec. 27.—Approving Fredericton and Grand Lake Coal and Ry. Co.'s bylaw, authorizing Passenger Traffic Manager and Assistant Freight Traffic Manager to issue passenger and freight tariffs respectively.

29,203. Dec. 29.—Extending to June 1, 1920, time within which G.T.R. shall build farm crossing for A. McGuiness, Lot 31, north range of Con. 1, south of Slash Road, Tyendinaga Tp., Ont.

29,204. Dec. 31.—Suspending order 20,859, Nov. 21, 1913, as amended by orders 28,537 and 28,269, Sept. 12, 1914 and Apr. 28, 1919, respectively, re installation of crossing gates at Whyte St., Edmonton Alta., by C.P.R.

29,205. Dec. 31.—Authorizing Canadian Northern Western Ry. to cross, close and divert north and south road allowance between Secs. 30 and 19, Tp. 20, Range 12, west 4th meridian, Alta.

29,206. Dec. 31.—Authorizing Canadian National Rys. to remove diamond at crossing at Spruce Ave., Edmonton, Alta., and lay straight rail; to be operated for 6 months from date.

29,207. Dec. 9.—Dismissing application of Wawota Village, Sask., for order requiring better train service on C.P.R. Reston-Wolseley Branch, with connections at Wolseley with westbound train.

29,208. Dec. 31.—Approving New Brunswick Government's order in council, passed Dec. 9, 1919, authorizing New Brunswick Coal and Ry. Co.'s Passenger Traffic Manager and Assistant Freight Traffic Manager to issue passenger and freight tariffs respectively.

29,209. Dec. 31.—Authorizing Canadian National Rys. to cross and divert north and south road allowance in n.w. ¼ Sec. 9, Tp. 24, Range 27, at Norfolk, Alta.

29,210. Dec. 23.—Authorizing Canadian National Rys. to rebuild bridge over Rideau Canal, at mileage 40.10 from Brockville, North Crosby Tp., Ont.

29,211. Dec. 27.—Authorizing C.P.R. to build spur at grade across Scugog St., Bowmanville, Ont.

29,212. Jan. 3.—Amending order 29,108, Dec. 6, 1919, re crossing of certain highways in Manitoba, by Canadian National Rys.

29,213. Jan. 5.—Dismissing Appledale Progressive Association's application for order directing C.P.R. to erect shelter and platform at Appledale, B.C.

29,214. Dec. 31.—Approving Canadian Northern Western Ry. location, mile 117.94 to 121.11, St. Paul de Metis, Alta., including location of station and closing and diversion of portion of Center Ave., also authorizing crossing of several highways.

29,215. Jan. 2, 1920.—Dismissing application of Wm. Taylor, Richmond, Que., for order authorizing opening of highway crossing over G.T.R. instead of farm crossing provided under order 27,589, Aug. 27, 1919.

29,216. Jan. 2.—Authorizing G.T.R. to remove electric alarm at Jeffries highway crossing near Richmond station, Que.

29,217. Dec. 27, 1919.—Rescinding order 28,630, Aug. 8, 1919, which disallowed C.P.R. tariff C.R.C. 3,369 in so far as it provided for cartage allowance of 1¼c per 100 lb. to Canada Sugar Refining Co., Montreal.

29,218. Jan. 2.—Authorizing Canadian Northern Town Properties Co. to make highway crossing over Canadian National Rys. in s.e. ¼ Sec. 4, Tp. 29, Range 7, west 4th meridian, Alta.

29,219. Dec. 31, 1919—Authorizing Canadian National Rys. to make crossing over tracks on road allowance between Secs. 31 and 32, Tp. 48, Range 19, near Edam, Sask.

29,220. Jan. 2, 1920.—Authorizing Canadian National Rys. to build highway crossing in s.e. ¼ Sec. 9, Tp. 26, Range 17, west 3rd meridian, Sask.

29,221. Jan. 2.—Relieving Canadian National Rys. from erecting fences, gates and cattle guards along its line between Toronto and Ruel, and a number of points on its Muskoka, Sudbury and Ruel Subdivisions, Ont.

29,222. Jan. 3.—Authorizing C.P.R. to build spur for Cambrian Coal Co., Elcan, Alta.

29,223. Jan. 3.—Rescinding order 23,095, Jan. 8, 1915, re Canadian Northern Ry. siding for Sterling Coal Co., at mile 312.16, Calgary Subdivision and authorizing removal of spur.

29,224. Jan. 2.—Dismissing Grand Trunk Pacific Ry. application for authority to remove its station agent at Entwistle, Alta., with leave to renew application six months from date.

29,225. Jan. 2.—Relieving Canadian National Rys. from providing further protection at crossing 9 poles west of mile 4, Winnipeg Subdivision, Man.

29,226. Jan. 2.—Relieving Canadian National Rys. from providing further protection at crossing 6 poles west of mile 50, Riding Mountain Subdivision, west of Birnie, Man.

29,227. Dec. 30, 1919.—Approving agreement, Dec. 15, between Bell Telephone Co. and Otonabee Tp., Ont.

29,228. Jan. 5, 1920.—Extending to May 5, time within which C.P.R. may build extension to spur for Saskatchewan University.

29,229. Dec. 31, 1919.—Extending to May 1, 1920, time within which C.P.R. may build a permanent culvert with opening 20 ft. wide, at mile 37.56, near Golden, B.C., as required by order 28,544, July 4.

29,230. Jan. 2.—Dismissing application of Associated Boards of Trade and Saskatchewan Grain Growers' Association for reduction in rates to stations on C.P.R. Weyburn-Lethbridge line, and for the building of uncompleted portion of the line.

29,231. Jan. 9.—Ordering Canadian Freight Association to reinstate by Jan. 15, 1920, rates to Seattle and Tacoma, Wash., in its tariff on freight for export to trans-Pacific destinations.

29,232. Jan. 5.—Relieving Canadian National Rys from providing further protection at crossing at Letellier, Man.

29,233. Jan. 8.—Authorizing C.P.R. to build spur for Exchange Orange Products Co., and Eureka Planter Co., Woodstock, Ont.

29,234. Jan. 7.—Authorizing Canadian National Rys. to take certain extra lands for right of way and retaining walls for Athabasca St. subway, Moose Jaw, Sask.

29,235. Jan. 9.—Extending to Feb. 15, 1920, time within which C.P.R. may build spur for Vancouver Ice and Cold Storage Co., Vancouver, B.C., as authorized by order 28,807, Sept. 20, 1919.

29,236. Jan. 10.—Authorizing G.T.R. to rebuild bridge carrying public highway over its track at mile 147 near Huntsville, Ont.

29,237. Jan. 10. — Dismissing complaint of Broadview Ratepayers' Association, Burnaby, B.C., against fares charged by the British Columbia Electric Ry.

29,238. Jan. 12.—Authorizing C.P.R. to build spur for Goodyear Tire & Rubber Co. of Canada, Regina, Sask.

29,239. Jan. 13.—Authorizing Hillcrest Lumber Co. to cross under Esquimalt & Nanaimo Ry. at mile 4.5, Lake Cowichan Subdivision, Vancouver, Island, B.C.

29,240. Jan. 12.—Authorizing G.T.R. to use bridge on Lot 21, Range 8, Markham Tp., Ont.

29,241. Jan. 12.—Recommending to Governor in council for sanction, Algoma Eastern Ry. General Train and Interlocking Rules.

29,242 to 29,250. Jan. 13.—Authorizing Canadian National Rys. to build across highway at 9 points on its Munson to Wayne second track, Alta.

29,251 to 29,253. Jan. 12.—Authorizing G.T.R. to use bridges on Lot 10, Range 5, Markham Tp., Ont.; between Lots 30 and 31, Con. B, Scarborough Tp. Ont., and on line of Bethune St., Peterborough, Ont.

29,254. Jan. 14.—Authorizing Canadian National Rys. to cross road on its Acadia Valley Branch, between Secs. 29 and 20, Tp. 26, Range 28, west 3rd meridian, Sask.

29,255. Jan. 12.—Amending order 28,496, July 8, 1919, re location of portion of C.P.R. Langdon North Branch, Alta.

29,256. Jan. 13.—Authorizing G.T.R. to rebuild bridge carrying public highway over its tracks between Lot 19, Con. 8, and Lot 19, Con. 9, Esquesing Tp., near Georgetown, Ont.

29,257. Jan. 9.—Authorizing City of Regina, Sask., to build foot passenger subway under C.P.R. on Hamilton St.

29,258. Jan. 13.—Authorizing C.P.R. to build spur for P. Burns & Co., Regina, Sask.

29,259. Jan. 13.—Authorizing Canadian Northern Saskatchewan Ry. to build across 8 highways on its Lampman-Peebles Branch, mile 8 to 22.39.

29,260. Jan. 13.—Authorizing C.P.R. to build spurs for Canada Creosoting Co., Trenton, Ont.

29,261. Jan. 13.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur for Norton Co. of Canada, and C. S. Anderson, Hamilton, Ont.

29,262. Jan. 13.—Authorizing Canadian National Rys. to build across and divert road between Sec. 36, Tp. 28, Range 20, and Sec. 31, Tp. 28, Range 19, west 4th meridian, Alta.

29,263. Jan. 10.—Approving Fredericton and Grand Lake Coal & Ry. Co.'s standard tariff of maximum mileage freight rates C.R.C. 84.

29,264. Jan. 10.—Approving New Brunswick Coal & Ry. Co.'s standard tariff of maximum mileage freight rates C.R.C. 51.

29,265. Jan. 3.—Authorizing C.P.R. to take certain lands of H. Bousquet for extending siding and station grounds at St. Rosalie, Que.

29,266. Jan. 2.—Approving location and details of Canadian National Rys. station building at Alfred Center, Que.

29,267. Jan. 13.—Approving agreement, Dec. 30, 1919, between Bell Telephone Co. and Barrie-Angus Telephone Co., Simcoe County, Ont.

29,268 to 29,270. Authorizing Canadian National Rys. to build across highway at 3 points on its Munson to Wayne second track, Alta.

29,271. Jan. 14.—Authorizing G.T.R. to build spur for Beachville White Lime Co., Oxford North Tp., Ont.

29,272. Jan. 10.—Ordering G.T.R. to make such changes in boarding its double deck stock cars as will give 3 or 4 in of air space at top.

29,273. Jan. 16.—Relieving Michigan Central Rd. from maintaining day and night watchmen at crossing of Middle Road, near Ruscomb station, Ont.

29,274. Jan. 16.—Authorizing G.T.R. to build bridge carrying highway over its tracks between Lots 14 and 15, Broken Front Concession, East Whitby Tp., near Oshawa, Ont.

29,275. Jan. 16.—Rescinding order 29,011, Nov. 10, 1919, approving location of Canadian Northern Pacific Ry. Kamloops - Vernon - Kelowna - Lumby Branch, mile 66 to 82.22 east from Kamloops Jct., B.C.

29,276. Jan. 16.—Authorizing Canadian Northern Ontario Ry. to rebuild bridge at Orient Bay, mile 44.1 from Jellicoe, Ont.

29,277. Jan. 16.—Authorizing Canadian National Rys. to carry traffic, temporarily, over its MacRorie Westerly Branch from Glidden mile 105.0 to Eaton, mile 115.0, Sask.; speed of trains limited to 19 miles an hour.

29,278. Jan. 16.—Relieving Michigan Central Rd. from providing further protection at crossing of Middle Road, near Comber, Ont.

29,279. Jan. 16.—Approving detail plan of C. P.R. subway at mile 28.3, MacTier Subdivision, Ont.

29,280. Jan. 16.—Ordering on application of Canadian Manufacturers' Association, on behalf of Canadian General Electric Co., Canadian Westinghouse Co., et al, that rating of twice first class for electric light bulbs shown in Express Classification for Canada 4, be reduced to 1½ times first class; change to be effective by Feb. 1.

29,281. Jan. 16.—Rescinding order 26,363, July 24, 1917, re agreement between Bell Telephone Co., and Heath Head & Grey Telephone Co., Grey County, Ont.

29,282. Jan. 19.—Authorizing Canadian Northern Pacific Ry. to open for freight traffic its line from junction with Patricia Bay Line, mile 1.80 to 26.5, from Victoria, B.C.; speed of trains limited to 10 miles an hour.

General order 281. Jan. 12.—Authorizing railways on application of Railway Association of Canada, to issue free or reduced rate transportation to private secretaries of Dominion Government Ministers and of the opposition leader.

## The Prince of Wales on the C.P.R. and Other Canadian Railways.

The following letter, written to E. W. Beatty, President, C.P.R., by the Prince of Wales, from Government House, Ottawa, just prior to his departure from Canada, is only now available for publication:—Dear Mr. Beatty:—I am sending today a signed and framed photograph of myself, which I hope you will accept as a very small acknowledgment of your kindness and care during my tour in Canada. I cannot look back upon my journey across the Dominion and back without the warmest admiration for the wonderful efficiency with which it was organized. I greatly appreciated the comfort and smooth working of the train, the thoroughness of all your arrangements, and, above all, the unvarying forethought and courtesy of the C.P.R. staff which travelled with me. For all this I am very grateful to you yourself and to the whole organization under you. Neither I, nor the members of my staff, will ever forget the very pleasant journey which we made under the auspices of the C.P.R. Believe me, yours sincerely, Edward P.

Towards the close of his Canadian tour, the Prince said:—"I have just left the magnificent train which has transported me across the Dominion, and in which I have lived in such comfort for the last two and a half months, and I should like to take this opportunity of thanking the Canadian Government for all the admirable arrangements that have been made for the tour. I am also very grateful to all the Canadian railways for the care which they have taken of me and for the consideration they have shown in making my 9,000 mile journey so easy for me. Railways seem to be the subject of quite a lot of excitement at present. I am not going to talk about that, but I do know that I could never have got across to Vancouver and back without the Canadian railways. Far more important still, there would have been no Dominion of Canada today but for them. I know of no country in whose history railways have played so important—in fact, decisive—a part."

## Canadian National Railways Earnings.

| | 1919 | 1918 |
|---|---|---|
| January | $ 6,744,018 | $ 4,696,567 |
| February | 6,000,342 | 4,421,504 |
| March | 6,827,491 | 5,710,660 |
| April | 6,909,632 | 7,165,890 |
| May | 7,518,244 | 6,580,745 |
| June | 6,009,585 | 6,868,864 |
| July | 7,657,402 | 5,733,299 |
| August | 8,274,882 | 8,255,942 |
| September | 8,627,268 | 7,058,381 |
| October | 9,389,795 | 8,480,468 |
| November | 8,739,457 | 7,836,384 |
| December | 8,828,482 | 7,289,969 |
| | $91,625,593 | $80,098,633 |

Approximate earnings for three weeks ended Jan. 21, 1920, $5,106,071 against $4,255,864 for same period, 1919.

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1919, compared with those of 1918:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $13,028,328 | $11,474,816 | $1,553,512 | $ 385,519 |
| Feb. | 11,064,167 | 10,083,051 | 981,116 | 390,218 |
| Mar. | 12,374,182 | 10,835,138 | 1,539,044 | *1,453,737 |
| Apr. | 13,108,905 | 11,020,281 | 2,088,624 | *1,366,765 |
| May | 13,569,411 | 10,535,650 | 3,033,761 | *654,015 |
| June | 13,577,274 | 10,586,852 | 2,990,421 | 178,274 |
| July | 14,720,362 | 11,723,659 | 2,996,703 | 826,692 |
| Aug. | 15,283,654 | 11,505,486 | 3,778,168 | 569,534 |
| Sept. | 17,513,691 | 13,421,771 | 4,091,920 | 970,479 |
| Oct. | 18,296,653 | 12,948,871 | 5,347,782 | 261,945 |
| Nov. | 17,366,850 | 14,517,041 | 2,849,809 | *548,663 |
| Dec. | 17,025,584 | 15,343,407 | 1,682,177 | *1,128,835 |
| | $176,929,060 | 143,996,024 | $32,933,036 | $1,569,351 |
| Incr. | $ 19,391,362 | $20,960,713 | | |
| Decr. | | | $ 1,569,351 | |

Approximate earnings for three weeks ended Jan. 21, 1920, 09,339,000 against $8,696,000 for the same period 1919.

*Decrease.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1919, compared with those of 1918:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $ 4,402,229 | $ 5,118,234 | $† 716,005 | $* 81,794 |
| Feb. | 4,088,028 | 4,397,953 | 309,952 | 660,229 |
| Mar. | 5,513,593 | 4,673,298 | 840,295 | 762,766 |
| Apr. | 5,357,537 | 4,601,550 | 755,987 | 92,889 |
| May | 5,272,060 | 4,603,411 | 668,649 | *36,495 |
| June | 4,947,795 | 4,644,659 | 303,136 | *707,067 |
| July | 6,021,746 | 4,886,147 | 1,135,599 | *35,347 |
| Aug. | 6,719,921 | 5,043,662 | 1,676,259 | *101,890 |
| Sept. | 7,004,277 | 5,611,125 | 1,393,152 | 164,047 |
| Oct. | 7,136,376 | 5,764,044 | 1,372,331 | 189,280 |
| Nov. | 6,092,603 | 5,589,730 | 502,873 | *398,214 |
| | $62,556,165 | $54,933,813 | $7,622,352 | $508,404 |

†Deficit. *Decrease.

# D. B. Hanna on the Canadian National Railways System, Etc.

During the early part of January, D. B. Hanna, President, Canadian National Rys., spoke at several places in Ontario, including Hamilton, London, St. Thomas and the Timothy Eaton Memorial Church, Toronto. In speaking at the Stratford Chamber of Commerce dinner, he said:—

"There is no subject I know of that is of more importance than that of transportation; it is peculiarly a basic subject as far as this Canada of ours is concerned. Canada has an area of 3,729,000 square miles; a population estimated at 8,593,000, which is only equivalent to 2 persons for every square mile. In the United States there is an area of 3,056,789 square miles, and a population of 115,000,000, according to figures I received from the U.S. Consul in Toronto yesterday; so that that great country has an equivalent of 38 persons to every square mile of territory. The last census gives a population to Great Britain and Ireland of 45,400,000, with an area of 120,580 square miles, which is equivalent to a density of 377 persons to every square mile. It will be seen, therefore, that Canada has a long way to go in order to measure up to the U.S., and a much longer road to go to measure up to Great Britain and Ireland. But as regards forests, fisheries, mines, coal and other minerals, Canada is very much in excess of the U.S. In population Canada has only about 7½% that of the U.S., but in railway mileage we are about 12% of theirs. On this basis it might be argued that we have more railway mileage in operation than is absolutely necessary at present, and Canada has probably overdone herself in that regard. It must be remembered, however, that very little new mileage was added during the war, to Canada's total, and much of the intensive construction which was done prior to the war has not added a very great deal to the Dominion's wealth in industries, food production or population. A new era has now developed, and if the same courage and loyalty that permeated Canada in its imperishable war activities is directed to the pursuits of peace, we will make a far greater development than we have done in the past.

"It is not true to say that Canada has more railway mileage than is necessary. That may be true in isolated cases, but it only represents a small percentage of the total mileage constructed, where duplication has been permitted. But think of the country to the north, in both Ontario and Quebec; do not overlook the fact that there are provinces west of Ontario where there are millions of acres of land which has not yet been brought under cultivation. We know that land cannot be profitably cultivated where the haul is 50 miles from the railway, yet, due to the insistent demand for more production during the war, many farmers rose to the heart-breaking task of hauling their products to the railway, in some cases over 50 miles away. That condition cannot always continue, and therefore I say let no one imagine that railway building is over in Canada. On the contrary, I am convinced that in the years to come we are going to have as much additional mileage built as is now in operation. There will, of course, be greater judgment displayed in the building of future lines, duplication will not be permitted, and inasmuch as there are only to be two companies competing for the new territory, a sane policy will obtain, and the country will be the gainer by it.

"My reason for saying these things is, that Canada is on the world's map as never before; immigration will begin again in a larger volume; and more than ever Great Britain and her allies will depend on Canada for foodstuffs. Thus, trade commissions, boards of trade, chambers of commerce, and other activities regarding industrial operations are beginning to grow, and new enterprises are being established throughout the Dominion. In the years to come we are going to be less dependent on U.S. industries to supply us with goods and manufactured articles, which we will manufacture ourselves. There is too much raw material going out of this country to be manufactured elsewhere and we must find means to correct that condition. With a better understanding between capital and labor, with that spirit governing our joint activities; we cannot but feel that Canada—Canada, the promised land—in the years to come, has a profitable development before her and her people. To me the development of this Canada of ours is a never ending, interesting story, because of what I have seen, particularly in western Canada, during the past 35 years.

"I wish to speak to you about the Canadian National Rys., as I find the Canadian people are not yet fully seized with the importance of these railways to the country, and they have failed to grasp their individual responsibility to assist in the success of the Canadian National Rys. Speaking in regard to my own experience, and particularly in regard to the west, I am always very diffident about using the personal pronoun "I," and yet sometimes one cannot get away from it. Strange as it may appear to you, I am a very humble person, but, I am a Scotchman, and that is one of the characteristics of the race. When I hear laudatory things said about myself, I am always reminded of an incident that occurred in my early railway career, in the old land. As a young lad, selling passenger tickets at a place called Barrhead, where my mother was born, in Scotland, I was carrying on my work in the usual way when an old lady came to the ticket window to purchase a ticket to Glasgow. She looked at me very intently for a moment or so, and said, "They tell me, laddie, you are a son of Janet Blair's." I said, "Yes, I am." She went on "I kent your monther when she was young, and she was a fine, handsome, strapping woman—you are no a bit like her." So, I carry through life that humble spirit, because, knowing the visible truth that, "pride goeth before a fall," probably it is just as well not to tumble into it any more than you can help.

"The Canadian National Rys. System is composed of the Intercolonial Ry., the Prince Edward Island Ry., the National Transcontinental Ry., and the Canadian Northern Ry.; having a total of close to 14,000 miles of lines, and operating in every province of the Dominion. As to the Intercolonial—what need I say? It is there. It was originally built as a military road. It has been performing a service and I do not think the people of this country exactly understand. Strange as it may seem to a great many people, the Intercolonial Ry. is a very valuable property, and there is a time coming, and not in the distant future, either, when both ends can be made to meet; that is to say, the earnings will pay the expenses; and we will hope a little later to see it make a little bit of profit. It has got an organization which is just as good as any organization anywhere in Canada or elsewhere, for that matter. You know all about the National Transcontinental Ry. It was a subject for political discussion for many years; but it has been built, and, strange to say, it is there, too. There is a development going on which is perfectly amazing; lumber mills are being built in every direction; settlers are going in; industries are being developed; and a through freight and passenger service has been inaugurated that in time to come will be of some advantage to the whole system.

'Do not let us forget that the Intercolonial and the National Transcontinental railways are two assets that can be made in the years to come, much more valuable than they are today, from the standpoint of dollars and cents. Had I time I could tell you what service those railways rendered during the war, and you would be amazed. Prince Edward Island was a contribution to Confederation, and let me tell you that 98% of the arable land of that little province is under cultivation, at one time or other during the year. It is an amazing little island; full of business, although handicapped by being away from the main land.

"The Canadian Northern Ry., is, after all, the mainstay of the system for the time being. In the Canadian Northern you have a property which I know all about. I am exhibit "a" of that property. I turned the first wheel in 1896; and I have seen a little property grow from 100 miles, a single locomotive and 50 cars, to what it was in 1918, when it was turned over to the government. What has it done in all that time? There has been a great deal of loose talk about the Canadian Northern being so much junk, and being pitchforked into the government's hands to be got rid of, and that the government has had to pay for the privilege of taking it over. The Canadian Northern began, as I said before, in a small way. Railway men who are here will appreciate this joke because it requires a railway man to understand it. Timetable 1, which I prize with a great deal of satisfaction, says, 'No. 4 will not leave until No. 3 has arrived.' In those days we had pretty dry times; we were a long way from being flush with money, but I could not help working in a little humor, and of taking advantage sometimes of our richer brother, the C.P.R. In 1895-6 the safety coupler was not what it is today; we used the old link and pin, and I can remember our conductor, old Dad Ritsteen, who is still with us, and is one of the type of conductor who has gone by the board. Dad used to wander into the C.P.R. yard, where we got our freight, and occasionally he would pick up a link and pin, so that he could always keep ahead of his requirements in a fairly life sized barrel that he kept in the baggage car. In fact, it was a physical example of the widow's cruise of oil, because the more

he took out, the more there always seemed to be in that barrel. And the singular thing of all was, to my recollection, I never bought one link or pin. The C.P.R. cannot make a claim on us now, I think it is outlawed, and so I am free to tell the story.

"In those days we had to be very economical. I practically lived on the railway; I was not only general superintendent, but master mechanic, roadmaster, and traffic manager. I looked after whatever lands there were to sell, and did any other thing that nobody else would do. I took a great deal of pride in doing that work, because I was seeing, as so few people had been able to see, how that country would grow. I looked upon it as such a romantic thing, and enjoyed every minute of it, very much to the neglect of my own family. In the spring of 1897 we were bowling along with what they used to call the 'Muskeg Limited,' with 12 or 14 freight cars, and 2 passenger cars in the rear, taking up into the Dauphin country a number of people from Huron and other Ontario counties to locate there, and they are doing well. A stray heifer ran across the track, and the locomotive caught it by the legs and threw it over to one side, but it was not killed. The train was stopped and I went forward with the conductor to see what was the trouble. We found the heifer lying there, the brakeman happened to be a butcher, and on the train was another butcher belonging to the construction department. I got them together and said, 'Let us kill this animal, dress it, and take it to the construction camp.' The passengers got out and stood around while the two butchers tackled the job, and in 16 minutes they had it hanging up in a box car, in quarters. In the meantime the owner turned up, and he was the most wrathful man I ever met in my life, his language was such that I could not repeat it. I told him we would settle his claim and in that way calmed him. We took the carcase along and I sold it to the construction department, and paid the man's claim in full, establishing a principle, probably the first time in railroading, by paying the claim in full without disputing it, and I had $4 to the good. And so, all during those years, from 1896 to 1902, when I moved from the west to the east, I saw that country grow, particularly the territory tributary to the Canadian Northern Ry.

"When the government took over our property there were between 9,000 and 10,000 miles of railway; we had placed on the map of Canada over 600 towns or villages; we had made it possible to find homes for hundreds of thousands of new settlers. We saw the revenue of that railway grow from $67,000 during the first full year of operation in 1897, to $44,500,000, we handled millions of tons of freight in that time; and we performed a service, and I say it from the knowledge that I have, second to none; not even the C.P.R. in the sphere in which we were located. I am a great believer in the C.P.R.; I consider that company is a credit to Canada, we are all proud of it, because it is the biggest thing in Canada, and under the British crown, its organization is all that could be desired, and it has done a service to this Dominion, particularly in the west, that was only duplicated by the Canadian Northern.

"Much of the mileage the Canadian Northern had built was practically completed about the time war came on. When the war came, immigration ceased, we were taking people out by the tens of thousands, and others were not going to take their places, therefore, that mileage has still to be properly developed, and the day will come when the Canadian Northern Ry. will come into its own. There is no institution in Canada, no government in Canada, that has spent as much money as the old Mackenzie and Mann organization, in getting to know something about that western country. We can tell you all about it. We know, just as well as any government can tell, just how far north you can go and raise grain, and we have proved it; but we are a long way from being finished. That western country is a long way from being developed, notwithstanding the mileage that has been developed. There are lines to the north that are still to be brought into real operation, and when that is done, and that must be done, we are going to have in Canada such operation through that western country that will have its effect in every industry in Ontario and Quebec, and right down to the sea.

"Why do I tell you these things? It is because I want you to understand exactly what you have got. There is not one of you here who is identified with any business interest who has not got personal responsibility in the success of this national railway of ours. I do not mean by that to say we have to ignore the C.P.R. There is plenty of business in this country for both railways, but I want everyone here to know as I have told the people at London, St. Thomas and Toronto, that, just in proportion as the people here and elsewhere realize the responsibility that the ownership of 1,300 odd miles of railway casts upon them, will they lend their support, and be doing something in their own and industrial interests. I want you to feel that in what you are doing you are not doing anything to assist me, but to assist the organization.

"The Canadian National Rys. are very strong in the west. Let me just go back a moment to speak of the Canadian Northern Ry. The layman knows the value of railway property, if he sees two lines of railway running in parallel order; on the one line there is a locomotive of the same standard as on the other line; one hauling 10 cars and making a fuss over it; another hauling 25 cars and doing it with, 'All right, I thank you, we are doing very well.' That is the condition of the Canadian Northern lines in the west, with a grade going through the mountains, with the exception of some 28 miles, of five-tenths of 1%. Let me illustrate what that means. In 1915 the Senators and members of parliament were taken on a trip to the Pacific coast. I have always said, and repeat it, that if they talked less in Ottawa, and did a little more travelling, so as to know something more of the country, we would think a great deal more of them. I think the ignorance of some members of parliament is collosal, in regard to the Dominion as a whole. On that trip we hauled 15 cars, consisting of sleeping cars, dining cars, and a lounge car where they could have enjoyment, speeches, and reminiscences by the old time members of parliament. Fifteen cars were hauled by a single locomotive through the mountains to Vancouver. Consider what that means. How many of you have been to the coast? How many have travelled over the Canadian Northern Ry? (One). You should get the Victoria Cross for that. Those who have been to the coast have seen how the C.P.R., with 6 or 7 cars, struggled to get up the grades across the Fraser River; whereas we can take 15 cars with a single locomotive. That means that the Canadian Northern Railway comes into its own, as it is going to come into it, as sure as I am standing here. It is but a question of time. We have a line of railway that will do 150% more business than our good friends across the Fraser River and do it at less cost. If we have any faith in our country at all, it is only a question of time when this property of yours can be made a valuable asset to Canada.

"We are strong in the west; we are strong in the east; but we are weak in the centre of the system. That is where the Grand Trunk will fit in to a nicety. I am not going to discuss the why and wherefore of that; it is not my province. I consider the government acted with great wisdom when it made up its mind that no more money was to be advanced to carry on operations with respect to the Grand Trunk and Grand Trunk Pacific, but that it had better take over the property. That is what it has done. It was the logical thing to do; and it is going to mean everything to the Canadian National Rys. system. The Grand Trunk is linked up with all industries of any importance in Ontario, and Quebec, with a continuous roll of traffic both east and west, and when the national system gets the benefit of the long haul you can see where we will be. We are not going to lose much sleep over our friends the C.P.R., that will be their business. Our business is to see that the Canadian National Rys. are considered first. In that you must play your part.

"Here we have a complete system. It means in figures to you that Canada will have an investment of about $1,000,300,000. What does it get for that? Let me read some figures; 22,375 miles of railway, doing business in every province of the Dominion, and 1,881 miles in the United States; gross earnings, assuming consolidation with the Canadian National Rys., of about $200,000,000 with 90,000 employes; 3,020 locomotives; 3,200 passenger cars; 120,000 freight cars; and this year would have handled 60,000,000 tons of freight, and 22,500,000 passengers. Now, I submit that is a pretty big property for any man to handle. Yet, after all, it is very simple. There is no earthly reason why the same management cannot be given to this property as the C.P.R. gives to its road. The only way the Canadian National Rys. can be given that management is that there must be no interference. I do not mean from that that the government should not be fully advised; I recognize as any man does the supremacy of the government, it must be advised of everything that is being done with its property; it must know the why and wherefore of certain things, as it has to advance moneys from time to time for capital expenditures. I submit with all deference to my friend Mr. Morphy here, that the fact he is a member of parliament does not give him any sort of privilege to come to me, or to say to any of my directors that this, that, or the other thing ought to be done, or that somebody ought to be appointed to take the place of somebody else, because that person does not fill the bill. I tell you, as far as I am concerned, and so far as the other directors

are concerned, when that situation begins to creep in, we will not creep out, but we will jump out. I am glad to be able to say that after 5 months experience with the present government we have no interference of any kind; on the other hand, it has been most liberal in its approval of moneys required for capital expenditure, and for the general betterment of the government's property.

"There is no serious trick in the operation of railways; the question of large mileage, large revenues, does not so much matter; after all it is organization. I know that on the Intercolonial, the National Transcontinental, the Canadian Northern, and on the Grand Trunk, there are men equal to the best. Their ability is not in question; their loyalty is beyond any doubt; and if governed by a proper board of management it cannot be anything else but a success. It all depends on you, and others, to see to it that the organization is not interferred with, and that the board will be permitted to carry on what they conceive to be proper and in the interest of the Dominion as a whole, not in the interest of any individual part of it.

"In addition to the railways, the Canadian National Rys. are in the steamship business. At present we are operating 23 steamships, doing business to the West Indies, South America, Cuba; across to London. Glasgow and Liverpool. We contemplate another service to the Mediterranean, and have just commenced a service from the Pacific coast to Australia. A year from now we will have over 60 ships, and we will have the largest, by long odds, floating fleet flying the Canadian flag. There will be over 300,000 tons floating, a year from now, in the transport of freight. The principal thing we are concerned about is this, the trade of Canada must be developed, there must be new avenues for its output, and our business is to come in contact with chambers of commerce, boards of trade and manufacturing associations, so that we may know along what channels they are developing their business, and the points they desire to reach. We are not in the benevolent business, by any means. We are not doing something for nothing, that would be strictly against my nationality. We do expect that for every dollar we spend, we will at least get, not only a dollar back, but enough to pay fixed charges for the ships that are operating in the business. In addition to the freight ships we will have passenger ships. We must be properly equipped, and as a national system we must be in a position to not only carry on our business in every province of the Dominion, but we must be able to see to it that on the Pacific coast and north Atlantic we can carry the products of our allies, or of our enemies if need be. We must have a complete system and the only way we can complete it is by having ships going in every direction, carrying freight, and in time to come, passenger ships.

"I have not been talking about what it costs to do these things, so I will tell you something about that 'The laborer is worthy of his hire.' I have often quoted that in my own family, because sometimes I think some get more than they ought without working very much for it. Due to conditions over which we had no control, the Canadian National Rys. system began operations under a cloud, as it were, because we were only in operation for some two months when a gentleman named McAdoo loomed on the horizon. I am not going to say a word about the rates of wages for which he was responsible. I am a believer in the doctrine that the laborer is worthy of his hire, I am a believer in paying good wages, because I think by doing that we get better service and a better class of employes. However, if we do pay good wages, if we have to pay excess amounts for our coal, and other materials which enter into the operation of a railway, but do not get enough revenue to meet those bills, what is the answer? 'Lift the freight rates.' The other day the wheat board raised the price of wheat 50c a bushel over night. There is not one industry represented here, but, if it finds the cost of operation is so much greater than it was before, will increase the price to the consumer, and I do not blame them, as it is the proper thing to do. What about the railway companies? The fact is that the revenue per ton mile is actually less today than it was in 1907, while wages have gone up in that time, 142%. Now, I submit to you, there is a question for us all to face. Would you rather pay the deficit in taxes, or would you rather make the man who gets the use of the railway pay the bill? It is a simple question, and the answer is very simple, too. There is no country in the world, as far as I know, that has lower freight rates, not even excepting the U.S., than you have here in Canada.

"Sometimes great truths can be brought home to people by homely illustrations. Here is a cigar; say it cost 10c; yet Canadian railways are compelled to haul a ton of freight 12½ miles to earn enough to buy such a cigar. Your chairman, Mr. McDonald, may make a complaint to his railway agent that he is not getting freight in as promptly, or that freight is not going out as promptly, as he would like, and the agent, as a good agent, being enquiries to find out what is the trouble, and he writes a reply on the typewriter, puts it in an envelope and places a postage stamp on the letter, which costs 2c. The Grand Trunk has to haul a ton of freight almost 3 miles to earn the 2c which it cost to put that stamp on the envelope. It is such illustrations that bring home to us exactly what is being done in this country by the railways; yet every time the question of an increase in rates arises, chambers of commerce, boards of trade, and institutions of one kind or another are on their toes, and I do not blame them. The facts must be placed before them, and the fact is that this year the Canadian National Rys. have a payroll of $21,000,000 greater than it was last year, due to the increase in wages paid to our employes. I am not questioning that, I am glad to see it, I like to see proper wages paid and have stood for that all my life and am too old now to change. I say to you, as I have said to other boards of trade, there must be equilibrium between expenses and receipts, and so the question is bound to come up at a later period. We may not be so jovial as we are tonight when that time comes. Let me say further that the total increases of wages paid by all the railway companies in Canada amounted to $77,000,000 last year, nearly $10 per head of the whole population of Canada. Other costs have gone up in proportion. To me, there is nothing so heartrending as to find, month after month, after the work of our organization in regard to the hauling of freight, that when the bills are paid we are worse off than nothing at the end of the month. Figures in red ink have a very distressing effect on me; and I am hopeful, as I go from place to place and preach the doctrine of national railways, and let all the people know what they have, that they will at least do one thing; and that is, they will remember they have a railway and it is their duty to support it.

"There are many other features about the Canadian National Rys. that I would like to tell you about, but there is not time, this is a social night and we are going to have some more music. I want to say this about Canada as a whole, it is a great subject to me, I have been away in Sydney, Nova Scotia, and in Sidney on the British Columbia coast, I have been identified with railways in this country since 1882; I have seen so much change, and so many developments, that I feel extremely confident that this country is a real promised land, it is a country of great potentialities, and it is up to us, particularly of the younger generation coming along, to see to it that we develop it along proper lines; not only along material lines, but along spiritual lines. If we keep that ideal before us, we may be very sure that wherever we may go outside of Canada, we will be able to hear things spoken well of us.

"The management of the Canadian National Rys. is a very serious thing. There will be some changes when the Grand Trunk comes under the control of the national lines. I do not know what the government's views are in that regard; I do not think it has any views about it; I do not mean that in a humorous way. I mean it probably has other things to attend to; but it is going to have the biggest thing in Canada very shortly, to think about—bigger than the government itself. I do not know what the government proposes to do, whether the Canadian National Rys. will be operated by a board of directors, or by a board of management, or by a commission, or who is going to be in control. Personally, it will be my pleasure to render assistance to any one who may succeed me. I have no expectation that I shall be the head of that organization, I do not expect it. Whoever it is, I shall be glad to render him every assistance possible, because I have unlimited faith in this country of ours. I know that Canada can be developed. I am optimist always, I do not think there is room in this country for a pessimist, if there is, he ought to be railroaded out of the Dominion. Believing what I do of Canada, having seen what it has already done; just as sure as I stand here, the railways are just as important as the nation itself, and the development of one will mean the development of the other; and what you are doing here in your own city, what others are doing elsewhere, is contributing towards the time when that great railway property, the Canadian National Rys., will be considered one of Canada's most valuable assets."

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**Railway Lands Patented**—Letters patent were issued during Dec., 1919, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows,—

| | Acres. |
|---|---|
| Alberta and Great Waterways Ry. | 8.04 |
| Canadian Northern Ry. | 962.00 |
| Canadian Pacific Ry. roadbed and station grounds | 72.46 |
| Total | 1,042.50 |

# Mainly About Railway People Throughout Canada.

W. J. Babe, for several years a Michigan Central Rd. conductor at St. Thomas, Ont., has been appointed Deputy President of the International Brotherhood of Railway Trainmen, and will undertake the work supervised formerly by the Vice President, Jas. Murdock, who was appointed recently to the Dominion Board of Commerce. Until his present appointment, Mr. Babe was general chairman, of the Brotherhood's grievance committee.

W. R. Baker, C.V.O., formerly Assistant to President. and Secretary, C.P.R. Co, returned to Canada early in January, via New York, after an extended visit to Europe He has been re-elected President, Royal Montreal Golf Club.

E. W. Beatty, K.C., President C.P.R., left Montreal by special train, Jan. 13, for a trip of inspection over the company's western lines He arrived at Port Arthur, Jan. 18, where he was met by D. C. Coleman, Vice President, Western Lines, who accompanied him to the Pacific coast. Mr. Beatty was expected back in Montreal during the first week in February.

F. Brinkman, Yardmaster, Pere Marquette Rd., St. Thomas, Ont., was elected Mayor of that city, Jan. 1.

Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World, who has been Chairman of the Canadian Press Association's Trade and Class Section for the past four years, has been unanimously elected President of the newly organized Canadian National Newspapers and Periodicals Association.

Sir Geo. Bury, ex-Vice President, C. P.R., now President, Whalen Pulp & Paper Co., Vancouver, was reported in an Ottawa press dispatch of Jan. 5, to have been appointed by the Dominion Government as Canadian representative to advise the British members of the Reparation Commission as to Canada's claims for damages suffered during the war. This report had not been officially confirmed up to the time of going to press.

Hon. J. A. Calder is acting Minister of Railways and Canals, at Ottawa, during Hon. J. D. Reid's absence in Florida.

E. Chandler, Foreman, Bridge and Building Department, G.T.R., Stratford, has retired after 42 years service with the company. On Dec. 31, he was entertained by a number of his associates and presented with a set of chairs.

Mrs. Cochrane, widow of Hon. Frank Cochrane, some time Minister of Railways and Canals, has gone to California, to spend several weeks.

W. J. Cowan, formerly of the Cowan Construction Co., which carried out several contracts on the Canadian Northern Ry. Western Lines, and who died at Cannington, Ont., during the elections for the Dominion Parliament in December, when he was one of the conservative candidates; left an estate valued at $191,-908.09. R. J. Mackenzie, a former director of the Canadian Northern Ry., and a son of Sir William Mackenzie, formerly President of that company, and A. J. Reid, of the C.N.R. legal staff, are the executors.

Baron Cunliffe, Governor of the Bank of England, who died suddenly in London, Jan. 5, was a director of the North Eastern Railway Co. of England.

Chas. P. Disney, whose appointment as acting Engineer of Bridges, Eastern Lines, Canadian Northern Ry., Toronto, was announced in our last issue, was born at Montreal, June 11, 1877, and from 1902 to 1905 was bridge draftsman, Dominion Bridge Co., Montreal; 1905 to 1906, steel checker, Locomotive & Machine Co., (afterwards Montreal Locomotive Works), Montreal; 1906 to 1907, taking a course at Institute of Technology, Boston, Mass.; 1907 to 1914, designing and estimating, Bridge Engineer's office, National Transcontinental Ry., Ottawa; Oct., 1914 to Sept., 1915, in bridge department, Intercolonial Ry., Moncton, N.B.; 1915 to 1919, on military service, being for 18 months a sapper with the Canadian Engineers, and then 3 years consecutively, Lieutenant and Captain in the Royal Engineers, his service in France being continuous for four years.

J. L. Englehart, Chairman, Timiskaming and Ontario Ry. Commission, left Toronto Jan. 7, for Santa Barbara, Cal., intending to remain there until May. His resignation has not been accepted by the Ontario Government, but it is said that he will not withdraw it, as he is determined to retire, on account of the state of his health.

Geo. H. Ham, of the C.P.R. headquarters staff, left Montreal, Jan. 13, for the Southern States, expecting to be away about three months.

D. B. Hanna, President, Canadian National Rys., left Toronto Jan. 17, with Mrs. Hanna, and their two daughters, for Miami, Florida, expecting to remain there about three weeks.

Anton Lund Hertzberg, whose retirement from C.P.R. service was announced in our last issue, died at Toronto, Jan. 31, after a short illness. He was born at Horton, Norway, April 30, 1855, and came to Canada early in 1880, since when he was, to 1883, in G.T.R. service. In 1883 he was appointed Chief Engineer, Credit Valley Ry., and Toronto, Grey and Bruce Ry., and when they were taken over by the C.P.R., he remained with that company, as Resident Engineer at Toronto, and was for two years Engineer, Maintenance of Way Department, Montreal, after which he was appointed Engineer, Ontario Division, later Ontario District, at Toronto. He retired from active service Jan. 1, after 37 years of continuous service with the company. The funeral, which took place at Toronto, Feb. 2, was attended by a number of his former colleagues.

Gerald Hiam, District Freight Agent, C.P.R., Cleveland, Ohio, was married at Fort William, Ont., recently, to Miss D. C. Young, daughter of Lt.-Col. S. C. Young.

Miss Dorothy C. Jones, elder daughter of F. W. Jones, of Victoria, B.C., who for many years occupied prominent positions in the C.P.R. service at Winnipeg, was married Jan 3, to Lt.-Commander D. S. Lambert, R.N., son of the late Major General Lambert, C.B., of Hampshire, Eng.

Zebulon Aiton Lash, KC., Senior Counsel, Canadian National Rys., died at Toronto, Jan. 24 after an illness lasting several weeks, and culminating in a stroke of paralysis, Jan. 11. He was born at St. John's, Nfld., Sept. 29, 1846, and educated there, at Dundas Ont., and Toronto University and was called to the Ontario bar in 1868, and made a Q.C., in 1879. He was appointed Deputy Minister of Justice for Canada in 1872, under Hon. Alex. Mackenzie's ministry, resigning in 1876, and has since been a partner in the legal firm of Blake, Lash, Anglin and Cassels, Toronto. He was for many years a director of the Canadian Northern Ry. Co., and its General Counsel, and at the time of the taking over of the railway by Canadian National Rys., he was a director, and Vice President and General Counsel. He was also President, Great North Western Telegraph Co., a director of the Sao Paulo Tramway, Light and Power Co., Mexico Tramway Co., Rio de Janeiro Tramway, Light and Power Co., and a number of other companies, and also of the Canadian Bank of Commerce and National Trust Co., as well as occupying positions on the boards of Toronto University and several other public institutions. He was buried at Forest Lawn Mausoleum, Toronto.

James McGregor, Superintending Engineer, Halifax Ocean Terminals, Canadian National Rys., is visiting in Scotland and expects to spend some time there.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., and Mrs. Marpole, left there, Jan. 12, to spend some time in Southern California

Flight Lieut. J. A. Middleton, whose death as a wounded prisoner in Germany, in June, 1917, was reported only recently, was born at Toronto in 1888, and educated in Natal, South Africa, and Edinburgh, Scotland. In 1906 he joined the C.P.R. engineering staff, and was engaged on bridge work in British Columbia at the outbreak of war. He enlisted in Lord Strathcona's Horse, and went to France with that regiment, transferring later to the 7th Cameron Highlanders. Having joined the air service, he served as a pilot with the Royal Flying Corps in 1916 and on March 24 of that year, during a heavy enemy attack, his machine was forced down within German lines. A younger brother, Lieut. A. S. Middleton, who died of woudns after the battle of Loos, in France, was formerly on the Canadian Northern Ry. engineering staff.

R. P. Ormsby, Secretary, Canadian National Rys., expects to leave Toronto early in February, to spend about two months in England.

F. O. Parent, agent, G.T.R., Pembroke, Ont., died suddenly at Rockland, Ont., Jan. 12 One brother, F. A. Parent, is agent, G.T.R., Casselman, Ont.

F. H. Phippen K.C., is expected to return to Toronto, from England, about the middle of February.

J. A. Pratt, station agent, Canadian National Rys., Riviere du Loup, Que., died there suddenly, Jan. 23, aged 64. He was in Intercolonial Ry. service for several years.

Hon. J. D. Reid, Minister of Railways and Canals, and Mrs. Reid, left Ottawa Jan. 23, for St. Augustine, Florida, to be absent about a month.

F. Rioux, formerly Assistant to President, Reid Newfoundland Co., St. John's, Nfld., and who went overseas in 1916 as a second lieutenant in the British Army Service Corps, was released from military service recently and has been visiting friends at St. John's, subsequently returning to Montreal, where he will live in future.

**Lieut.-Col. Blair Ripley, C.B.E., D.S.O.**, whose appointment as Engineer, Ontario District, C.P.R., Toronto, was announced in our last issue, was born at Oxford, N.S., Aug. 29, 1880, and was from 1901 to 1903, Assistant Engineer, Canadian Northwest Irrigation Co., Great Falls & Canada Co., Alberta Ry. & Coal Co., and St. Marys River Ry., in Alberta and Montana, respectively; 1903 to 1905, Chief Engineer of Construction, St. Marys River Ry. in Alberta, and from 1904 to 1905, also Chief Engineer of Construction, Alberta Ry. & Irrigation Co.; 1905 to 1907, Resident Engineer on Construction, Grand Trunk Pacific Ry. in Manitoba and Saskatchewan, and Assistant Engineer on harbor work, G.T.P.R., Prince Rupert, B.C.; 1907 to May 1, 1916, Resident Engineer on grade revision, C.P.R., Maple Creek to Medicine Hat, Alta.; Resident Engineer on field work, Lethbridge viaduct, C.P.R.; Assistant Engineer in charge, Old Man River viaduct, C.P.R., Macleod, Alta.; Assistant Engineer in charge, Outlook viaduct, C.P.R., Outlook, Sask. On the completion of these works he was sent by the C.P.R. to Nova Scotia to report on betterments and improvements for the Dominion Atlantic Ry., and to organize and prepare for the replacement of some large and difficult bridges on the waters of the Bay of Fundy. In 1912 he was appointed Engineer in charge of Grade Separation, C.P.R., North Toronto. In 1916 he was appointed Lieutenant-Colonel of the Canadian Railway Troops 1st Battalion, raised for general railway and bridge construction work at the front. He was given the D.S.O. for services in the field and at the close of the war was made a Commander of the Order of the British Empire.

**J. K. L. Ross**, director, C.P.R., and who recently retired from the Dominion Steel Corporation's board of directors, has been elected a director of the Consolidated Mining and Smelting Co. of Canada, succeeding the late W. D. Matthews, who was also a C.P.R. director and father of Mrs. Ross.

**Hon. N. W. Rowell** is acting Minister of Public Works at Ottawa.

**W. A. Sibbett**, who was engaged by the Colombian Government recently to survey the harbor at Barranquilla for extensive water front improvements, was born at Bracebridge, Ont., Nov. 4, 1890, and educated at Barrie, Ont., and Toronto University graduating with honors in civil engineering in 1911. He qualified as an Ontario land surveyor in 1912, and after spending some time on municipal work was engaged as a surveyor on the C.P.R. at North Bay, Ont. In 1915 he surveyed harbors in British Columbia for the Dominion Government. He enlisted for active service in 1915 and went overseas as lieutenant in the 122nd Muskoka Battalion, just prior to which he qualified as a Dominion land surveyor.

**Mrs. Somers**, wife of G. O. Somers, died at St. Paul, Minn., Jan. 12, and was buried at Toronto. Mr. Somers, entered railway service at Toronto in 1879 as telegraph operator, Northern Ry., and was subsequently assistant agent, relieving agent, station agent, and clerk to Superintendent of that road; from 1880 to 1882 he was in private business in Chicago, Ill.; 1883 to 1885 successively, clerk in General Freight Department; acting General Baggage Agent, and chief clerk, General Passenger and Ticket Department, C.P.R., Winnipeg; 1886, chief clerk, General Passenger and Ticket Office, Michigan Central Rd., Chicago, Ill.; 1887, Travelling Passenger Agent, Duluth, South Shore and Atlantic Ry., Marquette, Mich.; 1887 to Sept., 1894, successively chief clerk, General Passenger Department, and Assistant General Freight Agent, Great Northern Ry., St. Paul, Minn. In Sept., 1904, he was appointed General Freight Agent, Great Northern Ry., and later was transferred to a similar position on the Chicago Great Western Rd., which position he resigned in 1912 to enter the Canada Bond Co., Toronto. Shortly afterwards he resigned and returned to the United States and has latterly been in United States Railroad Administration's service.

**R. W. Stovel**, who was appointed Consulting Engineer, Westinghouse, Church, Kerr and Co., recently, was born at Toronto Feb. 22, 1877 and educated at Upper Canada College Toronto, Ridley College, St. Catharines, Ont., and McGill University. He entered Westinghouse Church, Kerr & Co.'s service in 1898, and all of his work has been in the U.S., with the exception of the design and construction of the C.P.R. passenger terminal and steamship pier at Vancouver, B.C. He enlisted for active service with the U.S. Army in Oct., 1917, and went to France with the Chief Engineer of the Transportation Service, and in Aug., 1918 was appointed Electrical and Mechanical Engineer in charge of the Pier Utilities Branch, Terminal Facilities Division, and in the following month was made chief of that division in charge of all French terminal facilities under the U.S. Army Transport Service's jurisdiction, with the rank of lieutenant-colonel.

**Thomas Dennis Utley**, whose appointment as Car Foreman, C.P.R., Weyburn, Sask., was announced in our last issue, was born at Leytonstone, London, Eng., Nov. 1, 1890, and entered railway service, Jan. 5, 1907, since when he has been to Mar. 4, 1910, Assistant Inspector, London Tilbury and Southend Ry., London, Eng.; Apr. 4 to May 21, 1911, laborer, May 22 to June 24, 1910, car cleaner, and June 25, 1910 to Mar. 29, 1911, car repairer, C.P.R., Winnipeg; Oct. 20, 1911 to Sept. 28, 1913, to Nov. 16, 1919, Car Inspector C.P.R., Swift Current, Sask. He was for a short while in Grand Trunk Pacific Ry.'s service as car repairer at Rivers, Man.

**Hugh B. Walkem**, Assistant District Engineer, C.P.R., Vancouver, is on sick leave, spending the winter in Southern California. He was one of the engineers engaged in the original location, and subsequent construction and maintenance, of the C.P.R., and has been in that company's service for nearly 39 years.

**L. D. Walker**, who has been appointed Waterworks Engineer and Inspector, Canadian Fire Underwriters' Association, Toronto, was, for a time in 1907, engaged as an engineer in the Maintenance of Way Department, C.P.R., at Montreal, and later, entered Grand Trunk Pacific Ry. service, being engaged on the construction at the Fort William terminals and the Lake Superior Branch. From 1909 to 1911 he was in the Chief Engineer's office, G.T.P.R., Winnipeg, and from 1911 to 1913, Assistant Engineer, Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont., resigning in 1913, on receiving an appointment under the Dominion Public Works Department at Sault Ste. Marie, Ont.

**G. T. Waugh**, station agent, G.T.R., York, Ont., retired from active service, Dec. 31, 1919, after 36 years with the company. On Jan. 5 he was presented with a club bag by the local staff and left for California.

## Acceptance of Canadian Money at Par on Michigan Central Rd. in Canada.

We have been favored with copies of the following telegrams:

From John Bridge, President, Western Ontario United Boards of Trade, to Chief Commissioner, Board of Railway Commissioners, Ottawa, Jan. 10. "Dining car and Pullman conductors on Michigan Central between Niagara and Windsor are refusing to accept Canadian currency in payment for meals or other service. Crews are apparently acting in good faith, under misapprehension of instructions from United States Railroad Administration. Hope that prompt measures can be taken to present this injustice on Canadian soil."

From Chief Commissioner, Board of Railway Commissioners, to John Bridge, Jan. 12, "Telegram re Michigan Central received. Am taking energetic measures."

From Chief Commissioner, Board of Railway Commissioners, to D. W. Donahue, Superintendent, Michigan Central Rd., St. Thomas, Ont., Jan. 12. "Complaint just received that your employes, acting under instructions, are refusing to accept Canadian currency for Pullman and dining car service. Please see this is discontinued immediately, and wire me to that effect."

From D. W. Donahue, Superintendent, M.C.R., St. Thomas, Ont., to Chief Commissioner, Board of Railway Commissioners, Jan. 12. "Your wire date. Instructions referred to are addressed to agents, conductors, etc., in the United States. Canadian currency or coin is accepted at par in Canada."

From Chief Commissioner, Board of Railway Commissioners, to John Bridge, President, Western Ontario United Boards of Trade, London, Ont., Jan. 12. "Michigan Central wires Canadian currency is accepted at par in Canada."

From John Bridge, London, Ont., to Chief Commissioner, Board of Railway Commissioners, Jan. 13. "Wires received on Jan. 9 and 10. Pullman and dining conductors Michigan Central westbound passenger train 23, Buffalo to Detroit, refused to accept Canadian money for services rendered on Canadian soil. Understand now these crews placed wrong interpretation on order issued by U.S. Railway Board."

**Railway Employes' Voting** — Polls were opened at a number of railway centers prior to Jan. 1, for the municipal elections in Ontario cities. It was reported Jan. 6, in Stratford, Ont., that in the two days the poll was open only 11 votes were recorded, and that the cost of recording them was $24.

**Barsa-Bagdad Ry.**—A London, Eng., cablegram of Jan. 1, states that it is expected to have the Barsa to Bagdad railway in Asiatic Turkey completed for traffic at an early date. Construction is reported to be progressing at the rate of 14 miles a day. A daily passenger train is expected to make the trip in 28 hours at the opening of the line, which will be reduced to about 12 hours when the line is got into thorough working order. Freight trains will, it is stated, make the trip in 48 hours.

# Railway Rolling Stock Orders and Deliveries.

Canadian National Rys. have received 3 sleeping cars from Canadian Car and Founrry Co.

Canadian National Rolling Stock Ltd., has ordered 80 cabooses from Canadian Car and Foundry Co.

Canada Creosoting Co. has ordered 50 tram cars, and 54 sets of running gear, from Canadian Car and Foundry Co.

The G.T.R., to Jan. 10, received 44 steel fram box cars, 80,000 lb. capacity, from Canadian Car and Foundry Co.

Algoma Steel Corporation has ordered 2 standard gauge car trucks, 80,000 lb. capacity, from Canadian Car and Foundry Co.

Bedford Construction Co., St. John, N.B., has bought one 20 yd. steel dump car from Canadian Car and Foundry Co.

The Grand Trunk Pacific Ry. is having a further 1,500 cars repaired by Canadian Car and Foundry Co. at Fort William, Ont.

The G.T.R. has received 44 box cars and 2 stock cars, and 233 repaired box cars and 138 repaired hopper cars from Canadian Car and Foundry Co.

The Canadian National Rys., has invited tenders to be sent in by Feb. 10, for the following rolling stock,—2,000 box cars, 40 tons capacity; 500 refrigerator cars, 30 tons capacity; 500 general service cars (coal), 50 tons capacity; 350 ballast cars, 50 tons capacity; 20 baggage cars, 73½ ft. long; 18 sleeping cars, 12 dining cars, 30 Pacific type locomotives, and 20 switching locomotives.

Canadian National Rys. have received 6 six wheel switching locomotives from Canadian Locomotive Co., completing an order for 25, placed Jan. 28, 1919, with Canadian Locomotive Co., and illustrated in our last issue. Following are the chief details:

| | |
|---|---|
| Weight in working car | 150,000 lb. |
| Wheel base, engine | 12 ft. |
| Wheel base, engine and tender | 41 ft. 1¼ in. |
| Heating surface, fire box | 132 sq. ft. |
| Heating surface, tubes and arch tubes | 1449.7 sq. ft. |
| Heating surface, total | 1,581.7 sq. ft. |
| Driving wheel, diar. | 51 in. |
| Driving wheel, centers | cast iron |
| Driving journals, diar. and length | 8½ x 11½ in. |
| Cylinders, diar. and stroke | 21 x 26 in. |
| Boiler, type | Straight top |
| Boiler, pressure | 180 lb. |
| Tubes, no. and diar. | 157—2 in.<br>24—5½ in. |
| Tubes, length | 12 ft. 5 in. |
| Airbrakes | Westinghouse E.T. 6 |
| Packing | Metallic |
| Fire brick | Security |
| Valve motion | Walschaerat |
| Cab | Steel, wood line |
| Headlight | 10 Pyle National type K, and 15 Schroeder Electric Taylor and Arnold casing |
| Weight of tender, loaded | 96,000 lb. |
| Water capacity | 3,800 imp. gals. |
| Coal capacity | 6 tons |
| Truck type | 4 wheel arch wire |
| Steel, dair. | 33 in. |
| Wheel, type | 10 Davis C and 15 cast iron chilled |
| Journal, dair. and length | 4¼ x 8 |
| Break beam | Simplex |

The Jamaica Government Ry. has ordered 7 twelve wheel (4-8-0) locomotives from Canadian Locomotive Co. They are duplicates of an order placed in Oct., 1919, except that the present ones are to be equipped with superheaters. Following are the chief details:

| | |
|---|---|
| Weight in working order on drivers | 110,000 lb. |
| Weight in working order total | 140,000 lb. |
| Wheel base engine, rigid | 12 ft. 9 in. |
| Wheel base, total | 23 ft. |
| Wheel base, engine and tender | 50 ft. 2 in. |
| Heating surface, fire box and arch tubes | 148 sq. ft. |
| Heating surface, tubes | 1,355 sq. ft. |
| Heating surface, total | 1,503 sq. ft. |
| Driving wheel diar. | 46 in. |
| Driving wheel centers | Cast iron |
| Driving journals, diar. and length | 8½ in. x 10 in. |
| Cylinders, diar. and stroke | 19 x 26 in. |
| Boiler, type | Straight top |
| Boiler, working pressure | 190 lb. |
| Tubes, no. and diar. | 139—2 in.<br>21—5⅜ in. |
| Tubes, length | 13 ft. 4 in. |
| Air brakes | Westinghouse E.T. |
| Packing | Metallic |
| Superheater | Locomotive Superheater Co. type A |
| Valve motion | Walschaert |
| Headlight | Electric |
| Weight of tender, loaded | 94,100 lb. |
| Tank capacity | 3,500 imp. gal. |
| Tank type | U shape |
| Coal capacity | 1;400 lb. |
| Truck, type | 4 wheel arch bar type |
| Wheel, diar. | 33 in. |
| Wheel, type | C.I. center with steel tires |
| Journal, diar. and length | 4¼ x 8 in. |
| Brake beam | Simplex high speed |

## Belgian Rolling Stock Orders.

The Belgium State Railways have ordered 75 consolidation (2-8-0) locomotives from American Locomotive Co., Schenectady, N.Y. The Belgian railway standard train connections, front and rear, will be included in the equipment, but the general design will be the American Locomotive Co.'s. Following are the chief details:

| | |
|---|---|
| Gauge | 4 ft. 8½ in. |
| Cylinders, diar. and stroke | 24 x 28 in. |
| Driving wheel, diar. | 59.84 ft. |
| Boiler, outside diar. | 68 in. |
| Boiler pressure | 200 lb. |
| Firebox, length and width | 96 x 60¼ in. |
| Tubes, no. and diar. | 160—2 in.<br>26—5⅜ in. |
| Heating surface, superheater | 564 sq. ft. |
| Heating surface, tubes | 1,292 sq. ft. |
| Heating surface, arch tubes | 25 sq. ft. |
| Heating surface, arch tubes | 25 sq. ft. |
| Heating surface, firebox | 150 sq. ft. |
| Heating surface, total | 2,031 sq. ft. |
| Heating surface, superheating | 510 sq. ft. |
| Grate area | 40 sq. ft. |
| Wheel base, driving | 19 ft. 6 in. |
| Wheel base, engine | 28 ft. |
| Wheel base, engine and tender | 54 ft. |
| Weight, leading truck | 22,000 lb. |
| Weight, driving truck | 164,000 lb. |
| Weight, total engine | 186,000 lb. |
| Weight, tender | 117,000 lb. |
| Maximum tractive effort based on 65% boiler pressure | 35,000 lb. |
| Factor of adhesion | 4.7 |
| Limiting weight, per axle | 42,900 lb. |
| Tender type | 6 wheel |
| Capacity, water | 6,340 U.S. gal. |
| Capacity, coal | 7 metric tons |
| Superheater | Locomotive Superheater Co. fire box tube, type and cross header |
| Airbrakes | Westinghouse, French automatic |
| Sanders | Lambert |
| Couplers | Belgian standard screw link with 2 spring buffers |
| Brake | Belgian standard |

London, Eng., press dispatch, Jan. 22. —The Belgian Minister of Railways is here negotiating for the purchase of 50 locomtives and 3,000 cars from Canadian manufacturers through the Canadian Government. The contracts will be signed as soon as the Canadian Finance Minister consents to an advance of credit. Belgium only had about $11,000,000 of the $25,000,000 granted last year. This credit, with others in Europe, expired at the end of December. The total unused amount will be advanced when good propositions are put forward. Belgium hopes to obtain a credit for needed rolling stock amounting to about $10,000,000.

Ottawa press dispatch, Jan. 27.—It is said here that large United States firms are interested in the fact that the Belgian Government is in the market for 50 locomotives, 18,000 freight cars and a number of passenger cars. Whether they will get any of the business depends on the Belgian Government, which now has the Canadian offer before it to accept Belgian Government 5½%, five year treasury bonds in payment for the locomotives and cars. Sir Henry Drayton's proposal that the companies themselves should extend five-eighths of the credit and the Dominion Government the balance has been accepted by the companies. A 50-50 basis was originally suggested by the companies.

## The Chief Railway Commissioner on Applications for Rehearings.

Hon. F. B. Carvell, Chief Commissioner, Board of Railway Commissioners, at a sitting of the commission in Montreal, Jan. 20, at which the Canadian Freight Association, on behalf of the C.P.R., the G.T.R., and the Canadian National Rys., asked for a rehearing of the joint freight tariffs order of Aug., 1919, is reported to have said: "What interests me in this matter is that nothing this board ever does seems to be accepted as final. Whenever a judgment is made and the railways do not like it, back they come trying to get the case reheard. In this particular matter the board issued an order in August last. Why was it not obeyed? Why this request that the case should be reopened. I have not been long on the board, but since I have been there have been two occasions on which cases have been asked to be retried. If the applicants can show that the board's order took any person by surprise, or is not sound in law why all right, but if it is simply because you don't like the order that you ask to have the case reheard then I do not feel like hearing it again. I find no fault with you for coming back if you think you have a real case, but I find it creeping up all the time that when an order is not pleasing to the railways, they come back to endeavor to have it changed. They seem to want to treat this board as if it was nothing more than a rubber stamp. Every order this board has made has only been made after we have given it the most careful consideration. In fact I have been rather surprised at the amount of work in connection with each case and I have reached the opinion that in what we are doing we are giving you our best well considered judgment. I'll admit that decisions are not reached as quickly as it is thought they should be, but I contend that every case is thoroughly considered in all its phases before an order is made. That being so, you must have very good grounds before you can ask for a rehearing."

**New Brunswick Workmen's Compensation Act**—The board appointed by the N.B. Government to carry out the Workmen's Compensation Act of 1918, issued on Dec. 29, 1919, a notice containing the rate of assessment to be made upon the pay roll of every concern in the province for the purpose of the act. The amount of the pay roll is to be ascertained under conditions prescribed in the act, and the rate of assessment is set out in a schedule attached to the notice. The operation of steam and electric railways, railway car shops, steel and wooden shipbuilding yards; wrecking and salvaging, towing, express companies' operations, bridge building and a variety of other occupations affecting transportation interests come under the act.

**W F. Barry**, Commercial Agent, Canadian National Rys., San Francisco, Cal., in renewing his subscription to Canadian Railway and Marine World, writes: "It is a pleasure to continue receipt of your very newsy and useful paper."

# Traffic Orders by Board of Railway Commissioners.

### Railway Tolls Continued in Effect.

General order 276, Dec. 31, 1919. Re order in council 1863, as amended, and of all tolls and in pursuance of the powers conferred upon the board by sec. 325 of the Railway Act, 1919: It is ordered that, subject to the provisions of the Railway Act, 1919, the tolls of railway companies in effect as of this date, are hereby continued in effect, on and from Jan. 1, 1920.

### Regulations Respecting Tariffs.

General order 277, Dec. 29, 1919. Re indicating changes in tolls in freight, passenger, express, telephone, and telegraph schedules; in pursuance of the powers conferred upon the board by the Railway Act, 1919, sec. 324, and upon the Chief Traffic Officer's report and recommendation, it is ordered that freight, passenger, express, telephone, and telegraph tariffs, and supplements thereto, applying between points in Canada, or from a point in Canada to a foreign country, hereafter filed with the board, shall, except as hereinafter provided, indicate advances thereby made by the symbol "A," and reduction by the symbol "R," with the necessary explanatory note, in the following manner, viz.:

1. In schedules which show the rates opposite the station, the proper symbol to be shown against each rate, or each rule or regulation, changed. 2. In schedules in which the rates appear in a table separated from the station list: (a) Unless the station groupings have been varied relatively to their rates; the proper symbol to be shown in the rate table in the manner prescribed in sec. 1 hereof; (b) If the station groupings have been varied relatively to their rates; the proper symbol to be shown against the reference on the station page to the rate table, and against each rule or regulation changed.

Provided that if the columns of rates are so close together as to leave insufficient space for the symbols, and in such cases only, increases shall be printed in full-face type, and reductions in italics, with the necessary explanatory note. Provided, also, that if it is found impracticable to indicate changes in a schedule by either of the methods herein prescribed, application may be made to the board, accompanied by a printer's proof of the proposed schedule, for relief from the provisions of this order in such case. And it is also ordered that the character of the schedule be shown at the top of the title page, thus: "Advance," "Reduction," "Reissue," "New Rate (or rates)" and so on, as the case may be. General order 275, Dec. 16, 1919, is rescinded.

### Express Companies' Tariffs.

General order 278, Jan. 3. Re the Railway Act, 1919, Sec. 360, and express companies' tariffs. It is ordered that, subject to such order or orders as the board may from time to time issue, all express companies within the legislative authority of the Parliament of Canada be authorized to charge the express tolls published in their respective tariffs filed with the board.

### Fresh Fruit Rates to Manitoba.

General order 279, Jan. 5. Re complaint of Vinemount Orchard Co., Vinemount, against rate on fresh fruits to Winnipeg, as shown in Canadian Freight Association's Special Commodity Tariff C.R.C. 19, effective Aug. 20, 1918. Upon hearing the submissions of the C.P.R.'s freight traffic manager, on behalf of the railway companies interested herein, at Ottawa, Sept. 16, 1919, the Canadian Pacific, Grand Trunk and Canadian National Railways, the Canadian Freight Association, and the Dominion Department of Agriculture's fruit branch, being represented and upon the board's Chief Traffic Officer's report and reading the written submissions filed subsequently on behalf of the Department of Agriculture's Fruit Commissioner, and it appearing that the tariff contravenes the board's order of Oct. 10, 1904, in the complaint of the Ontario Fruit Growers' Association, and order 8,207, Sept. 27, 1909, dismissing the Canadian Freight Association's application for an order rescinding the order of Oct. 10, 1904; it is ordered that the Canadian Freight Association's Tariff C.R.C. 19, effective Aug. 20, 1918, be disallowed. And it is further ordered that the Canadian Freight Association, in virtue of the authority thereupon conferred by powers of attorney of the railway companies interested herein, forthwith publish and file a tariff restoring the rates on fresh fruits from points in Ontario and Quebec to Winnipeg, Portage la Prairie, and Brandon, prescribed in the order of Oct. 10, 1904, as increased by authority of order 212, Jan. 15, 1918, and as further increased by order in council 1,863, July 27, 1918; the said increases having been continued in effect by general order 276, Dec. 31, 1919.

### Transportation for Private Secretaries.

General order 281, Jan. 12. Re application 2, Dec. 30, 1919, of Railway Association of Canada, under the Railway Act, 1919, sec. 345, for permission to issue free or reduced rate transportation to the classes of persons specified in the application. Upon reading the application, and considering what was filed in support thereof, it is ordered that railway companies within the legislative authority of the Parliament of Canada be permitted until further order, to issue free or reduced rate transportation to the following class of persons, viz.: Private secretaries of ministers of the Dominion Government, including the private secretary of the leader of the opposition.

### Sand and Gravel Rates From York, Ont.

28,163, Dec. 22, 1919. Re complaint of York Sand & Gravel Co., Toronto, against rates on sand and gravel from York to private sidings and team tracks on G.T.R. in and contiguous to Toronto. Upon hearing the complain in Toronto, Oct. 31, 1919, the complainant, the Canadian Manufacturers' Association, the Toronto Board of Trade, the G.T.R., being represented at the hearing, and upon reading the further submissions filed, and the report and recommendation of the board's Chief Traffic officer, it is ordered that the G.T.R. be directed to publish and file a tariff, which may be made effective Jan. 1, 1920, showing the following rates in cents per 100 lb. on sand and gravel, in car loads, from York, Ont.:

| | |
|---|---|
| East of Church St. to Coxwell Ave. and Don Valley | 2¾c |
| Church St. to South Parkdale and Dundas St. bridges | 3c |
| West of South Parkdale to Swansea, west of Dundas St. bridges to West Toronto | 3½c |
| North of Dundas St. bridges to Davenport | 3½c |
| Mimico, New Toronto and Belt Line beyond Davenport to Davisville (Merton St.) | 3¾c |

That the minimum weight be the marked capacity of the car; except that when cars fully loaded will not contain the marked capacity, the minimum shall be the actual weight, but not less than 60,000 lb.

That the rate to New Toronto be exclusive of delivery on manufacturers' siding at that point.

### Grand River Ry. Passenger Tariff.

29,192, Dec. 30, 1919. Re the application of the Grand River Ry. under the Railway Act, 1919, sec. 534, for approval of its Standard Passenger Tariff C.R.C. 14. The said tariff having been filed on the basis permitted by order 29,145, of Dec. 12, 1919, to become effective Jan. 12, 1920, it is ordered that it be approved; the tariff, together with reference to this order, to be published in at least two consecutive issues of the Canada Gazette.

### Fredericton and Grand Lake Coal and Ry. Co.'s Tariff.

29,202, Dec. 27, 1919. Granting application of Fredericton & Grand Lake Coal and Ry. Co. under the Railway Act, 1919, sec. 323, for approval of a bylaw, passed Oct. 7, 1919, authorizing the company's Passenger Traffic Manager and Assistant Freight Traffic Manager, to prepare and issue tariffs of the tolls to be charged for carriage of passengers and freight traffic.

### New Brunswick Coal and Railway Co.'s Tariffs.

29,208, Dec. 31, 1919. Re application of C.P.R. as lessee exercising franchises of the New Brunswick Coal & Ry. Co., under the Railway Act, 1919, sec. 323, for approval of order in council of New Brunswick Government, passed Dec. 9, 1919, authorizing Passenger Traffic Manager and Assistant Freight Traffic Manager of New Brunswick Coal & Ry. Co. to prepare and issue tariffs of tolls to be charged for carriage of passengers and freight. Upon reading the order in council, and it appearing that the intention is to authorize the officials named therein to prepare and issue tariffs of tolls to be charged in respect of the railway owned by it and operated by the C.P.R., it is ordered that the order in council be approved.

### Cartage Allowance to Canada Sugar Refining Co.

29,217, Dec. 27, 1919. Re application of C.P.R. for an order rescinding order 28,630, Aug. 8, 1919, disallowing the company's tariff C.R.C. no. E-3,369, in so far as it provided for a cartage allowance of 1¼c per 100 lb. to Canada Sugar Refining Co., Montreal, in lieu of interswitching by G.T.R. It appearing that the G.T.R. distance from the Canada Sugar Refining Co.'s refinery to the point of interchange with the limitation of 4 miles, as defined in general order 252, and that, therefore, the movement over the G.T.R. is not regulated by the provisions of sec. 15 of said general order, and upon reading what is filed on behalf of the railway company, and the report and recommendation of the board's Chief Traffic Officer, is is ordered that order 28,630, Aug. 8, 1919, be rescinded.

### Freight Rates to Seattle and Tacoma for Export.

29,231, Jan. 9. Re complaints of

Riordon Sales Co., the Ha Ha Bay Sulphite Co., and the Canadian Export Paper Co. of Montreal; Grace & Co., the Meishosha Co., and Jardine, Matheson & Co., of New York; and Caldwell & Co., on behalf of Federal Export Corporation, International Trading Corporation, Mitsubishi Goshi Kaisha, Frazar & Co., Mitsui & Co., A. D. de Shubirin & Co., American Trading Co., Pacific Commercial Co., Anderson Meyer & Co., China, Japan and South American Trading Co., A. G. Kidston & Co., Suzuki & Co., and Iwai & Co., of New York, against withdrawal of export rates to Seattle and Tacoma, Washington, by tariff C.R.C. 43, of Canadian Freight Association, published to become effective Jan. 15. Upon hearing the complaints at Ottawa, Jan. 7, the complainants and the Canadian Freight Association being represented and what was alleged, it is ordered that the Canadian Freight Association be required, not later than Jan. 15, 1920, to reinstate the rates to Seattle and Tacoma in its tariff on freight for export to trans-Pacific destinations.

### British Columbia Electric Ry. Fares.

29,237, Jan. 10. Re complaint of Broadview Ratepayers' Association, Burnaby, B.C., against fares charged by British Columbia Electric Ry. in Broadview District; upon hearing the complaint at Vancouver, Nov. 21, 1919, the complainants and the railway company being represented at the hearing, and what was alleged, it is ordered that the complaint be dismissed.

Assistant Chief Commissioner McLean gave the following judgment, Dec. 28, 1919: At the board's sittings in Vancouver, Nov. 22, 1919, complaint was made of the rates, particularly those affecting Horne Payne and Crown Ave. stations. As expressed by Mr. Collier, one of the parties applicant: "This has been argued before by the solicitor for the municipality, but the ratepayers' association instructed me to come and make a formal protest before this board as to what we consider an exorbitant increase that was granted the company on this line last June. Previous to that we had a 50c rate ticket in existence. I will mention Horne Payne and Crown Ave. stations. At Horne Payne the rate was 5c a ride, Crown Ave. 6c, buying a book costing $3. The new rate to Horne Payne is 7c, an increase of 2c, the new rate to Crown Ave. is 9c, an increase of 50%, which we consider is exorbitant. The company in its statement listed the old rate on the basis of a 10 ride ticket, which in the case of Crown Ave. would read 7½ to 57c for a 10 ride ticket. So far as we were concerned, using that station, the 10 ride ticket was practically nonexistent, so that to us the old rate was 6c and the new rate is 9c."

The stopping points particularly referred to are located on the British Columbia Electric Ry.'s Burnaby Lake line, which in terms of its charter, is the Vancouver, Fraser Valley and Southern. The application of the B.C. Electric Ry. for increases in passenger rates on that line was dealt with by the board in its judgment of Nov. 14, 1918. In the increases for which sanction was asked were certain commutation rates. The rates herein involved fall in this class. The following detail sets out the former rate and the rate for which sanction was asked.

| Between and | Vancouver 10 ride adult | | | New Westminster 10 ride adult | | |
|---|---|---|---|---|---|---|
| | Miles | Old rate | New rate | Miles | Old rate | New rate |
| Horne Payne ..... | 4.9 | $0.50 | $0.70 | 9.8 | $1.25 | $1.50 |
| Crown Ave. ..... | 5.5 | 0.90 | 0.90 | 9.2 | 1.25 | 1.50 |

The figures as to earnings and expenses were carefully analyzed at the time, and the conclusion was unescapable that the various increases involved were justified; and, accordingly, a sanction which covered the rates herein complained of was given. At the hearing in Vancouver, additional information as to this condition of the line was submitted by the railway. Intimation was given at the hearing by the Chief Commissioner that on the showing made it was improbable that the line could carry on on lower rates. While it cannot be said that there was much, if anything, new in the way of evidence as showing that a lower rate basis was justifiable at present on the line in question, the urgent submissions as to the effect of the rate increases has caused the matter to stand for further consideration. Further consideration, however, in view of the fact that no change for the better in the condition of the line in question has been shown as compared with the date when the original judgment was given simply emphasizes the fact that the increases allowed are still justifiable.

The Chief Commissioner and Commissioner Rutherford concurred.

### Fredericton and Grand Lake Coal and Ry.'s Freight Tariff.

29,263, Jan. 10. Re application of the C.P.R., as lessee exercising franchises of Fredericton & Grand Lake Coal & Ry. Co., under sec. 330, of the Railway Act, 1919, for approval of its Standard Mileage Tariff, C.R.C. 34; upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff of maximum mileage freight rates to apply between stations on the Fredericton & Grand Lake Coal & Ry. Co.'s line, be approved; the tariff, with a reference to this order, to be published in at least two consecutive issues of the Canada Gazette.

### New Brunswick Coal and Ry. Co.'s Freight Tariff.

29,264, Jan. 10. Re application of C. P.R. as lessee exercising franchises of New Brunswick Coal & Railway Co., under sec. 330 of the Railway Act, 1919, for approval of its Standard Mileage Freight Tariff, C.R.C. 51; upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff of maximum mileage freight rates, to apply between stations on the New Brunswick Coal & Ry. Co.'s railway, be approved; and that the tariff, with a reference to this order, be published in at least two consecutive weeks of the Canada Gazette.

### Express Rates on Incandescent Lamps.

29,280, Jan. 16. Re applications of Canadian Manufacturers' Association on behalf of Canadian General Electric Co., Canadian Westinghouse Co., Solex Co., Northern Electric Co., Dominion Lamp Co., and Toronto Board of Trade for a reduction from double first class to first class rates on incandescent electric lamps carried by express; upon hearing the application at Toronto, Oct. 31, 1919, the applicants, the Express Traffic Association of Canada, and the Dalyte Electric Co., being represented at the hearing, and what was alleged; and upon the recommendation of the board's Chief Traffic Officer, it is ordered that the rating of two times first class for electric light bulbs, shown in Express Classification for Canada no. 4, be reduced to one and one-half times first class; the change to be made effective not later than Feb. 1, 1920.

### Claim for Loss of Grain.

29,288, Jan. 22. Re complaint of United Grain Growers Ltd., of Winnipeg, that Canadian National Rys. have refused compensation for loss occasioned by delivery to Thunder Bay elevator instead of Paterson's elevator, as directed, car C.N.R. 44,458, grain, ex Deepdale, Man., Dec. 5, 1918, consigned to complainants in care of terminal elevator of Canadian Northern Ry. Co., Port Arthur; upon hearing the complaint at Winnipeg, Nov. 15, 1919, the complainants and the railway company being represented and what was alleged; and upon its appearing that what is involved is a loss and damage claim, in which the board is without jurisdiction; it is ordered that the complaint be dismissed.

### Toronto Suburban Ry.'s Freight Tariff.

29,293, Jan. 23. Re application of Toronto Suburban Ry., under sec. 330 of the Railway Act, 1919, for approval of its Standard Freight Tariff C.R.C. 1; upon its appearing that the company's wage schedule is substantially that of the Canadian National Ry. System, of which the said railway forms a part; and in virtue of which the Canadian National Rys. were permitted, by order in council, 1863, to increase their rates, the tariffs submitted for approval being identical with that of the Canadian National Rys. System for similar distances; it is ordered that Standard Freight Mileage Tariff C.R.C. 1 be approved; the tariff, together with a reference to this order, to be published in at least two consecutive issues of the Canada Gazette.

### Charge for Lining Cars for Flaxseed.

29,309, Jan. 26. Re application of W. E. Campbell, Secretary, Canadian Freight Association, Winnipeg, on behalf of the railways operating in Western Canada, for an order authorizing them to increase their charge from $3 to $4 a car for lining cars used for carriage of flaxseed in bulk; upon hearing the application at Winnipeg, Nov. 15, 1919, the applicant, the North West Grain Dealers' Association, the Canadian National, Canadian Pacific and Grand Trunk Pacific Railways, and certain shippers interested being represented, and what was alleged; and upon the consent of the representatives of the said shippers and of the Northwest Grain Dealers' Association, it is ordered that the said railway companies be authorized to increase their charge for lining cars used for the carriage of flaxseed in bulk from $3 to $4 a car, subject to conditions set out in order 23,894, June 2, 1915. Order 25,956, Mar. 28, 1917, made herein is rescinded.

### Express Charges on Apples—Virden to Cromer.

On Dec. 13, 1919, the board received the following letter from the United Grain Growers, Ltd., Eastern Division, Winnipeg: "On Nov. 4 we made a shipment of 251 boxes of apples, weight 12,550 lb., Virden to Cromer, via Canadian National Express, which exacted express charges on basis of 55c per 100 lb., which is full tariff rate. We are

given to understand that the railway companies will not allow us a refund or 15c per 100 lb., owing to their maintaining a delivery service at this point, but did not handle this shipment from our elevator to the station. We are also given to understand that a very recent case of this nature was dealt with by your commission. Would you kindly advise status of the commission ruling on this subject?"

The board's ruling was communicated to complainants by letter from the Assistant Secretary, Dec. 19, as follows:—"I am directed to state that a somewhat similar situation was dealt with in the case of the Neal Baking Co. of London, Ont., which was advised as follows: 'Referring to your letter to the Chief Commissioner, I am directed to say that the judgment recites, inter alia: "There are many points, hundreds of them, where there is no wagon service and where the cost of maintaining a wagon service would be entirely disproportionate to the total receipts. Nevertheless these points pay just the same rates as do points where a wagon service exists," and then goes on to provide as to the reductions to be made. Your correspondence raises the contention that where at a cartage point the shipper or consignee performs a wagon service after cartage hours there should be a similar reduction in respect of the shipper or consignee. The intention of the judgment is that the reduction should be limited to points where there is no cartage of any kind whatever performed by the express companies.'

"I am further directed to say that the rates have been checked. The first-class rate between the Virden and Cromer blocks is 85c Cromer is not a cartage point. In accordance with the judgment, there is deducted from the 100 lb. rate 15c, making the net first class rate 70c. The charge for the box of apples graduated on the first class rate of 70c gives a rate of 55c, as charged Virden is a cartage point. In terms of the letter above quoted the reduction of 15c as referred to applies only at points where there is no cartage service of any kind. Where the express company maintains a cartage service, which the shipper does not see fit to take advantage of, this does not justify the reduction asked for."

**Demurrage on Coal at Three Rivers.**

The application was set out in a letter of Dec. 4, 1919, from Bureau & Bique, advocates, as follows:—"We are acting for J. H. Giroux, owner of a lime quarry which is situated a short distance from Three Rivers, but some 4 miles from the nearest station on the St. Maurice Valley Ry., running from here to Shawinigan Falls. Under regulations ratified by your board, demurrage is charged after 3 days without unloading. As the pit of this quarry is some 4 miles from the station and the roads are none too good, especially in winter and spring, it is almost an impossibility to unload a car of coal in 3 days. Mr. Giroux would want 5 days without demurrage. Under the circumstances, his request seems fair; as his industry is young, but very important for the district, it seems that no undue expense should be added to his cost of production. The St. Maurice Valley Ry. is operated by the C.P.R. Would you kindly tell us when it would be possible to have this point adjudicated upon by your board?"

The board rules as follows:—The condition of the highway over which haulage of the coal was to be made, and which is referred to as a reason for extension of the free time, is a disability for which the railway is in no way responsible. The free time for unloading as fixed by the board in the Demurrage Rules is of general application, and covers what, after careful consideration, is regarded as a maximum reasonable term for unloading. In other cases where road disabilities, or lack of facilities on behalf of the applicant, have been advanced as a reason for additional free time, the board has not felt itself justified in granting additional free time. It does not feel justified in granting that an extension should be made in the present instance.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian National Rys.**—F. J. BULLER, formerly Paymaster, Eastern Lines, Canadian Northern Ry., has re-entered the service and has been appointed Supervisor in charge of Local Treasurers and Paymasters, Canadian Northern Railway System. Office, Toronto.

W. A. KIRKPATRICK has been appointed acting Assisting Superintendent, Division 2, Central District, vice D. W. Steeper, assigned to other duties. Office Sioux Lookout, Ont.

G. H. PERLEY, heretofore transitman, New Glasgow, N.S., has been appointed Resident Engineer there, vice R. Montgomerie, resigned on his removal to Scotland.

The positions of Supervisors of Work Equipment, with jurisdiction north, and south, of the St. Lawrence River held by W. S. Secord, Toronto and T. Carroll, Moncton, N.B., respectively, as announced in our last issue, are new ones. Their duties are to look after the maintenance of work equipment, provide the necessary outfit and operators for its successful operation, and arrange for its distribution, after consultation with the proper officials.

**Canadian Pacific Ocean Services Ltd.**—H. B. BEAUMONT has been appointed General Agent, Passenger Department, Montreal District, vice W. Webber, promoted. Office, Montreal.

P. D. SUTHERLAND has been appointed General Passenger Agent for the Orient. Office, Hong Kong, China.

W. WEBBER, heretofore General Agent, Passenger Department, Montreal District, has been appointed General Agent, Passenger Department in charge of the handling of passenger traffic at Atlantic ports. Office, Montreal.

**Canadian Pacific Ry.**—S. A. BROWN, heretofore Assistant Yardmaster, has been appointed Yardmaster, Port Arthur, Ont., vice J. D. Callahan, transferred.

J. D. CALLAHAN, heretofore Yardmaster, Port Arthur, Ont., has been appointed Yardmaster, Medicine Hat, Alta.

R. F. RICHARDSON, heretofore Local Freight Agent, Edmonton, Alta., has been appointed General Agent, Alaska and Yukon Territory. Office, Juneau, Alaska.

D. STEVENSON, who returned recently from active military service overseas, has been appointed Assistant Yardmaster, Port Arthur, Ont., vice S. A. Brown, promoted.

**Grand Trunk Ry.**—G. H. BROWN has been appointed Commercial Agent, Grand Trunk Ry. lines in Canada, vice J. Waugh, transferred. Office, Minneapolis, Minn.

FRANK FOSTER has been appointed Assistant to Superintendent, Motive Power, Ontario Lines, Allandale, Ont., vice John Vass, assigned to other duties.

C. J. HAIGH has been appointed Commercial Agent, G.T.R. lines in Canada. Office, Philadelphia, Pa.

S. G. WAGSTAFF has been appointed Commercial Agent, G.T.R. lines in Canada. Office, Toledo, Ohio.

C. S. WAINWRIGHT has been appointed Commercial Agent, G.T.R. lines in Canada. Office, Los Angeles, Cal.

JAMES WAUGH, heretofore Commercial Agent, Minneapolis, Minn., has been appointed Commercial Agent, G.T.R. lines in Canada. Office, San Francisco, Cal.

**Grand Trunk Western Lines Rd.**—W. M. GUY, heretofore Travelling Freight Agent, London, Ont., has been appointed Division Freight Agent there, vice R. W. Youngs.

**Walford Forwarding Corporation**—H. A. YOUNG, formerly Traffic Manager, Canadian Lake Line, has been appointed agent Walford Forwarding Corporation, New York. Office, 53 Yonge St., Toronto.

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**Telegraph Address Registration**—Jas. Richardson & Sons, Ltd., et al, complained to the Board of Railway Commissioners recently against the fee of $2.50 proposed to be charged by the C. P.R. Co.'s Telegraph and the Great North Western Telegraph Co., for recording a registered address as set forth in a circular letter of Nov. 20, 1919, issued by those telegraph companies. The Chief Railway Commissioner gave the following ruling, Dec. 24, 1919: The board has considered the substance of the application. I am of the opinion that the charge is not a rate under the control of this board, because it is a charge made by the telegraph companies for a service to be performed by the cable companies, over which we have no jurisdiction. In other words, the telegraph company is acting to some extent as an agent for the cable company by devising a means by which one or two words may answer the purpose of half a dozen words which would be charged for individually by the cable company. Therefore, I do not see that we have any jurisdiction to interfere.

**Rules for Wires Erected Along or Across Railways**—The Board of Railway Commissioners issued the following circular, Jan. 5: Referring to circular 167, June 19, 1918, to the effect that under the provisions of the old act and the amendment of 1911, sec. 7, c. 22, general order 231, May 6, 1918, and the rules thereby adopted and confirmed, applied only to construction across a railway. Sec. 372 of the Railway Act, 1919, is not so limited and applies to construction along as well as across a railway. Where, therefore, the construction, whether along or across the railway, is by consent and in accordance with the Standard Conditions and Specifications set out in the schedule to general order 231, and approved by that order, no further leave of the board is necessary.

# Canadian National Railways Construction, Betterments, Etc.

St. John, N.B., Terminals—A. P. Barnhill, one of the C.N.R. directors, in addressing the Commercial Club at St. John, N.B., Jan. 10, is reported to have said the city's interest would be well cared for by the board, and that the port would be given fair treatment. At the next meeting of the board the first appropriations under the present management would be submitted, and St. John will have no cause for complaint when the appropriations are made public, so far as matters within the driectors' authority are concerned. The important point for the citizens of St. John is to impress on the Dominion Government is that additional terminal facilities should be provided by the government in fulfilment of its several promises to the city. The directors may decide on certain terminal improvements but money must come from the government, and any recommendations by the directors will be subject to revision by the government. The board has under consideration plans, the prepartion of which is well advanced, for a new station, and a large appropriation will be recommended for additional yard accommodation.

Canadian National Railways Y.M.C.A. Building at Capreol, Ont.

Canada Eastern Ry.—A recent press report states that work has been started on the section of the Intercolonial Ry., known formerly as the Canada Eastern Ry., between McGivney Jct. and Fredericton, N.B., to give the National Transcontinental Ry. direct connection into St. John, over the St. John and Quebec Ry. S. B. Wass, District Engineer, Moncton, is reported to have said in Moncton, recently, that work had been started on a big rock cut near Durham, that this was the beginning of the work of the revision of the line between McGivney Jct. and Fredericton, and that this section of the line is to be brought up to the standard necessary ofr heavy trains. The report also states that the work will include the construction of a new bridge across the St. John River at Fredericton.

Quebec Station—A press report, Jan 14, states that plans have been submitted to the Railways Department for the building of a station in Quebec on the sit occupied formerly by the Canadian Northern Ry., and the Quebec and Lake St. John Ry. station.

Lotbiniere and Megantic Ry.—A press report states that tenders will be called for shortly by the Canadian National Rys. for building an extension of the line from Fortierville to a junction with one of the C.N.R. lines, to give a through connection to Quebec. The L. and B. R. has been acquired by the Dominion Government recently.

Grenville Cut Off—The Board of Railway Commissioners has authorized the opening for traffic of the Grenville cut off on the Lachute Division, Que., from Lot 359, Range 1, Block O, Chatham Tp., near mile 60 from Joliette.

Carillon-Grenville Canal Bridge—The Board of Railway Commissioners has authorized the company to rebuild its bridge across the Carillon - Grenville canal in Grenville Tp., Que.

North Crosby Bridge—The Board of Railway Commissioners has authorized the company to rebuild its bridge across the Rideau Canal, in North Crosby Tp., Ont., mile 40.10 from Brockville.

Capreol Y.M.C.A. Building—The company is erecting a Y.M.C.A. building at Capreol, Ont., at the south end of the yard facing the main line from Parry Sound, the rear elevation overlooking Bloor St. The building has concrete foundation walls, the main exterior walls being of brick finished with stucco, the roof is sloped and covered with cedar shingles. An entablature of galvanized iron returns all round the building, the dormer windows of the third floor being just above the cornice of the entablature. In the center of the front elevation there is a portico of 4 piers, 2 stories high and supporting two verandahs. The main entrance doors open off the lower of these and give access to the main hall or rotunda through a vestibule. Just at the left of the entrance from the vestibule is the office and manager's room. The office is provided with sliding sash and counter. Immediately to the right of the entrance is the library, which is also provided with a counter and sliding sash. In the center of the hall and opposite the entrance there is a spacious alcove with a fireplace. To the right, columns divide off the billiard room; a games room being screened off at the back of the billiard room. An open writing room is provided at the back of the main hall between the alcove and the games room. To the left, between two columns, access is obtained to the dining room or cafeteria. If found necessary this room can be partitioned off from the main hall. Entrance through swing doors is provided, between the dining hall and the kitchen at the back of it. At the back of the main hall, between the kitchen and alcove is the main staircase, also an entrance from the street. The main or first floor has large open spaces which can be used for meetings and lectures. A simple treatment of stucco beams, with a plain cove cornice mould, and plaster columns, is used throughout the main floor, which is finished with oak; the partitions and trim on this floor are of Georgia pine, stained and varnished. On the second floor there are 18 bedrooms; a sick bay, large lavatory and bathroom and linen closets. There is access to 4 balconies from the corridors and some of the rooms. The balconies are for fire protection and sleeping porches. On the third floor there are 18 single bedrooms and one double bedroom, a large lavatory and linen closets. There is access to the balcony roofs on this floor, also for fire protection, and outside sleeping porches. At the ends of the second and third floors, doors are provided, so that an exit can be obtained to future iron fire escapes. The floors are of wood joists, the main floor being finished in oak, and the second and third floors in birch. The partitions are of wood studs, the whole of the walls and partitions on the main or first and second and third floors being covered with lath and plaster. The trim on the main floor is of Georgia pine, stained and varnished, and on the second and third floors of pine painted. In the basement provision is made for 2 bowling alleys which will be put in later. A boiler room and fuel room are provided in the basement at the rear. Provision is also made for the installation of a public and a private lavatory. One room at the rear can be used for help and if necessary two more rooms can be erected at this end of the basement, between piers, as living quarters for any further help. The building was designed by G. C. Briggs, Supervisor of Buildings.

Fort William Interlocking Plant—A press report states that a contract has been let for the installation of 2 half interlocking plants at Fort William, Ont.

Western Lines Construction, Etc.—We are officially advised that grading and other construction work was done on 16 branch lines in Manitoba, Saskatchewan and Alberta during 1919. Grading on some of these lines had been done in previous years, while on others the grading contracts were only been let in 1919. During 1919 there were 253,95 miles of new grading completed on these lines, and 158.46 miles of track laid, on 7 of the lines, partly on grading completed previously and partly on new grading. In addition 7.15 miles of second track were laid near Munson, Alta The following table shows the miles of grading and track laying done during 1919:

| | Grading. Miles | Track laid |
|---|---|---|
| Amaranth extension, Man. | 11.68 | |
| St. Rose du Lac extension, Man. | 9.31 | |
| Alsask southeasterly, Sask. | 1.26 | |
| Eston southeasterly, Sask. | 25.16 | |
| Jackfish Lake line, Sask. | 11.43 | |
| Luck Lake line, Sask. | 16.04 | 19.75 |
| Melfort-Humbolt line, Sask. | 23.63 | 0.35 |
| Melfort northeasterly, Sask. | 18.72 | |
| Peebles-Lampman lne, Sask. | 17.96 | |
| Swift Current line, Sask. | 22.11 | 12.96 |
| Thunderhill extension, Sask. | 1.41 | 17.45 |
| Acadia Valley line, Alta. | 19.33 | |
| Hanna-Medicine Hat line, Alta. | 54.17 | 48.08 |
| Peace River line, Alta. | 0.48 | 4.30 |
| Vegreville-Calgary revision, Alta. | 0.44 | |
| Oliver northerly, Alta. | 25.82 | 55.57 |
| | 253.95 | 158.46 |

John Wardrope, General Agent, Natural Resources Department, issued a statement recently in regard to work done on western lines in 1919. In addition to branch line construction, etc., already referred to above, he gave the following particulars: "A number of large stations have been built at country points and loading platforms and stock yards have been extended and provided at points where none previously existed. At Moose Jaw a new station was built, also freight shed and office building. At Vancouver a $1,000,000 station was completed and put in operation. Commencement was made on terminal facilities at Victoria. Terminal facilities at the following points have been enlarged: Port Arthur, Kamsack, Humbolt, North Battleford, Edmonton, Hanna, Calgary, Big Valley, Kindersley, Prince Albert and Saskatoon. Train service has been placed on the northeasterly part of the Hanna-Medicine Hat line.

**Radville to Weyburn, Sask.**—A press report states that a survey is being made for a line from Radville to Weyburn, Sask., and that construction will be started this year.

**Peebles-Lampman Line**—The Board of Railway Commissioners has authorized the Canadian Northern Saskatchewan Ry. to lay tracks across Assiniboia Ave., Peebles, Sask.

**Hanna - Medicine Hat Line** — The Board of Railway Commissioners has authorized the Canadian Northern Western Ry. to open for traffic its Hanna-Medicine Hat Branch from Bonar, Alta., southerly. This branch was previously opened previously for freight traffic, and the recent order removes the restriction as to the kind of traffic that may be carried. A press report states that 9 stations are being opened on the section of the line referred to for traffic, viz.: Taplow, Sheerness, Honey, Halladay, Kenowall, Carolside, Roope, Cassford and mile 47.

**Edmonton Car Shops**—A recent report spates that it was proposed to erect large car shops at Saskatoon Sask., and that the present shops at Edmonton, Alta., would be closed, let the Edmonton City Council to arrange on Dec. 30, for a delegation to interview the management in Toronto, and the Minister of Railways at Ottawa. A telegram from D. B. Hanna, President, C.N.R., on Jan. 1, informed the council that there was no foundation for the rumors, but that on the contrary it was proposed to enlarge the plant there as business necessitities might require.

**Oliver-St. Paul de Metis Line**—The Board of Railway Commissioners has authorized the opening for traffic of the branch line from Oliver towards St. Paul de Metis, Alta., to mile 98.5, with limitations as to speed.

**Kamloops - Kelowna - Vernon - Lumby Line**—We are officially advised that construction is approximately about 40% completed on this line, which includes the main line from Kamloops to Kelowna, 114.55 miles, and a branch from Vernon to Lumby, 15.5 miles. The contractors for the grading, etc., are J. W. Stewart & Co., Vancouver.

**Vancouver Island Line**—We are officially advised that track has been laid on the line from Victoria to the bridge across the Koksilah River, mile 52.43, and that work is in progress from that point to mile 140, a distance of 87.57 miles. Track laying is being done by the company's own forces.

A press report states that tenders are under consideration for the erection of a locomotive house at the terminal yards on the Songhees Reserve, Victoria. (Jan., pg. 21).

## United States Railway Notes.

Howard Elliott, President, Northern Pacific Rd., is reported to have stated recently that $3,000,000,000 must be spent by U.S. railways within the next few years, to provide first class passenger and freight facilities.

The Baltimore & Ohio Rd.'s President, in addressing the Baltimore Chamber of Commerce recently, said that unless U.S. railways are granted means of getting increased revenues, in proportion to increased cost of operation, when returned to private control, they will have to revert again to government control. He stated the increase in cost of operation since 1916 as being about 70%.

Director General Hines of the United States Railroad Administration, states that a national agreement covering rules and working conditions for railway employes represented by Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employes has been signed between himself and officers of that organization to continue in force during the period of federal control.

**Sir R. G. Reid's Estate**—Two judgments were delivered Jan. 17, by the Quebec Court of Appeal, in connection with the action brought by Miss Helen Duff Reid, against Sir William D. Reid, H. D. Reid, R. G. Reid, the Reid Newfoundland Co., Lord Shaughnessy and the Royal Trust Co., involving 54,768 shares in the Reid Newfoundland Co. The Quebec Superior Court had ordered the sequestration of the shares pending final judgment in the principal action, and the same court in a second judgment had dismissed an application of H. D. Reid and R. G. Reid, requesting that Miss Reid make option as to which of the several claims in the action she would proceed upon. In the first case the court decided that this was not a case where sequestration should be ordered, and in the second appeal, a majority of the court confirmed the Superior Court's decision that Miss Reid was not obliged to make an option of the several claims in her action.

**Another Hotel for Montreal**—In connection with the erection of the projected hotel in Montreal by a syndicate which includes Lord Shaughnessy, Chairman, C.P.R. Co., and E. W. Beatty, K.C., President, C.P.R., application was made recently to Montreal City Council for permission to erect a 16 story building, the present building bylaw restricting the height of buildings to 10 stories. A committee to which the matter was referred favorably, and on the council. Jan. 13, by a vote of 11 to 8, authorized an amendment of the bylaw to permit the erection of the hotel.

**Dominion Government Acquisition of G.T.R. System**—The Dominion Government was reported, Jan. 7, to have approved of the agreement between it and the G.T.R. Co. for acquiring the system, under the provisions of the act passed last session. A meeting of the company's shareholders will be held in London, Eng., Feb. 19, to consider the agreement, and, if deemed advisable, ratifying it.

## Steam Railway Track Laid in 1919.

The total of new first track laid in Canada on steam railways during 1918 was 121.32 miles, against which the following table, compiled from official returns to Canadian Railway and Marine World, show that 325.77 miles of new track were laid by five companies on 13 different lines, during 1919. The Canadian National Rys., on its Canadian Northern Ry. lines in Saskatchewan, Alberta and British Columbia, laid 202.17 miles of this and the British Columbia Government laid 82 miles of the remainder on its Pacific Great Eastern Ry. The length of track laid in the several provinces was: Alberta, 134.75 miles; British Columbia, 127.84 miles; and Saskatchewan, 63.18 miles. Following are details:

| | | |
|---|---|---|
| **Alberta and Great Waterways Ry.—** | | |
| Mileage 276.90 to 283.50 | | 6.60 |
| **Canadian National Rys.—** | | |
| Thunderhill branch, Sask. | 20.15 | |
| Swift Current branch, Sask. | 18.03 | |
| Melfort-Humboldt line, Sask. | 0.35 | |
| Luck Lake branch, Sask. | 19.75 | |
| Alsask South Easterly, Sask. | 4.90 | |
| Hanna-Medicine Hat line, Alta. | 48.08 | |
| Oliver-St. Paul de Metis line, Alta. | 55.57 | |
| Peace River line, Alta. | 27.84 | |
| **Vancouver Island line—** | | |
| Mileage 24.59 to 52.43 | 27.84 | 202.17 |
| **Dolly Varden Mines Ry.—** | | |
| Dolly Varden Mines to Alice Arm, B.C. | | 18.00 |
| **Lacombe and North Western Ry.—** | | |
| From near Bentley to Rimbey, Alta. | | 17.00 |
| **Pacific Great Eastern Ry.—** | | |
| Lone Butte near Horse Lake to Deep Creek near Soda Creek, B.C. | | 82.00 |
| Total | | 325.77 |

## Saskatchewan Provincial Guarantees of Grand Trunk Pacific Railway Bonds.

Hon. W. F. A. Turgeon is reported to have stated in the Saskatchewan Legislature, Jan. 20, that he had received a telegram from Hon. J. A. Calder, Ottawa, as follows:—"Matter we discussed in Toronto agreed to. You may expect word in near future from Drayton. Settlement will cover past as well as future." This telegram had reference to the question of interest paid by the province in respect of branch line construction. Up to the present the province has paid $537,000, which the Dominion Government will apparently repay, as well as take over all future liability of Saskatchewan under its guaranttees. The contingent liability of Saskatchewan under its guarantees the G.T.R. is $13,211,000.

**Alien Enemy Property in Canada**—An Ottawa press report states that it is proposed to convert into cash the $40,000,000 or more of Austrian and German property vested in the Finance Minister under the provisions of the orders as to alien investments in Canada, and to distribute the same in liquidation of debts in Canada by Austrians and Germans, and for other purposes, under the directions of the Reparation Committee. It is stated that the fund includes $28,000,000 of C.P.R. stock with accrued dividends.

**Reported Merging of Railways and Canals Department and Public Works Department**—An Ottawa press report states that there is a probability that the Public Works Department, and the Railways and Canals Department will be merged under one minister. The Department of Public Works, is at present without a minister.

# Canadian Pacific Railway Construction, Betterments, Etc.

Appropriations for 1920—We are officially advised that the appropriations for eastern and western lines for this year provide for tie and rail renewals; bridge work, including turntables; ballasting, ditching, tile drains, etc.; tie plates and rail anchors; station and building work; siding and yard tracks; terminal and other improvements; additional coaling plant facilities at Fort William; new station terminal improvements at Moose Jaw; water supply, pipe lines, tanks, etc.; automatic signals and interlockers; fencing, repairs and renewals, British Columbia coast and river steamships, miscellaneous, telegraph work, renewals and improvements.

The cut off from Molson, Man., to Winnipeg, 83.1 miles, will have a second track build. The ballasting, ditching, tile drainage, tie plates, rail anchors and rail renewals will be largely improvements to present track. The siding and yard track work will cover extensions to present tracks at various points. The fencing will include the usual amount of repair work, as well as further tree planting, for snow protection, which was started last year.

Renewals and repairs of bridges, etc., will include, in addition to ordinary maintenance, a number of new turntables at various places, and the putting in of heavier spans at various points on the main line, as well as a large amount of culvert replacements and renewals.

Water supply work will include the renewal of several tanks in steel, as well as the installation of some new tanks and standpipes, at points where they are required owing to exigencies of traffic.

Terminal and other improvements will include the extension of various buildings at Angus ships, Montreal, as well as other important terminals throughout the system; the station and building express buildings, as well as the extension of some of the present stations and express buildings at various points.

The automatic signal will include yard and station protection at several points on both eastern and western lines, and the rebuilding of Hamilton Jct., interlocker.

The telegraph work cover the replacement of some wires on important lines with copper, as well as dispatching and telegraph system between Montreal and Smiths Falls.

The British Columbia coast, lake and river steamship work will include the usual maintenance and repairs, a new station and office building at Victoria, 2 new tugs and a new barge for the B.C. lake and river service.

Western Lines Work—D. C. Coleman, Vice President, Western Lines, returned to Winnipeg, Jan. 15, from Montreal, where he spent some days discussing the appropriations for this year's betterments and construction work. He is reported to have made a statement at Fort William, Ont., Jan. 14, as to the works to be undertaken as follows: "This year's programme of betterments, improvements and extension is the most considerable undertaken since 1913. Given a normal grain yield, we look for the heaviest volume of freight traffic we have been called on to move, and we propose to make such provision for it that the public will continue to receive the best quality of service. The work of double tracking those portions of the line where traffic is especially dense will be resumed. It is proposed this year to double track the Molson cut off, from Molson to Winnipeg, and to provide for the handling of all through freight and passenger traffic by that route. The increasing volume of livestock traffic will be recognized by the construction of 29 additional stockyards. The housing of employes at isolated points will continue to engage earnest attention and this year 21 additional houses for section foremen and a large number of additional bunk houses for temporary section laborers will be provided. The building of branch lines to promte settlement and to serve farming districts now without transportation facilities will proceed rapidly, but a definite announcement as to what may be completed this year is deferred until the prospects as to labor supply can be gauged a little more accurately.

"At Fort William work will be started on another unit of the coal handling plant on Island 1, which even now is considered the nest on the Great Lakes. The new unit, which will take the best part of two years to build, will practically double the storage capacity which can be served by the plant."

At Winnipeg, block asphalt platforms will be laid to serve the station tracks. A new plant will be put in to provide for the more rapid cleaning and disinfecting of passenger cars, the freight car shop at Weston will be extended, and provision has been made for many improvements in the other facilties there.

At Regina the locomotive house will be extended. A new coaling plant will be erected. A further extension to the station will be erected to provide for the constantly increasing express and mail traffic, and a rearrangement of the main building will be made to provide more waiting room and ticket office accommodation. At Regina Beach, additional trackage will be provided to accommodate excursion traffic.

At Weyburn, at new building will be erected for the Dominion Express Co., and the locomtive house will be extended.

At Saskatoon, the freight shed facilities will be improved, an electric staff system will be installed on the joint section to Harwood, and at Sutherland the car shop will be completed and the locomotive house facilities improved.

At Moose Jaw, the new station and office building will be proceeded with. The platforms will be reached through a subway from the station, and the layout will be of the most modern type. A central steam heating plant will also be built and the engine house extended.

At Yorkton, the track facilities will be greatly increased and a new freight shed of much increased capacity will be built. Extensions will also be made to the locomotive houses at Wynyard, Sask., and Hardisty, Alta.

At Medicine Hat the station facilities will be improved, the locomotive house facilties increased, and an increase in freight yard tracks is on contemplation.

At Calgary a handsome new building for the Dominion Express Co. will be built east of the present Y.M.C.A. building, the capacity of Alyth freight terminal will be greatly increased by additional tracks and the ice houses' facilities will be extended.

At Edmonton there will be a rearrangement of tracks at the station with a view to increased capacity, and a substantial extension will be made to the freight shed.

At Lethbridge, and at Macleod, there will be considerable expenditure for improvement of present facilities.

At Cranbrook, the locomotive house, machine shops, and the ice house will be replaced by new structures.

At Revelstoke, the locomtive house facilities will be materially improved.

To handle the constantly increasing fruit traffic on Okanagan Lake, an additional tug and an additional car barge will be provided and a new tug will also be placed on the Arrow lakes.

At Vancouver, work on the new ocean pier will be pressed vigorously, and there will be other improvements undertaken to provide for the handling of the growing traffic of that great port.

At Victoria, in connection with the coast steamship service, it is intended to add to the appearance of the inner harbor by erecting a fine office and terminal building.

In addition to the works already enumerated, stations will be built at Lydiatt, Harrowby, and Schwitzer, in Manitoba; at Willows, Corrinne, Insinger, Dafoe, and Rutland, in Saskatchewan, and at Metiskow.

West St. John, N.B.—The new baggage shed at West St. John, N.B., described in Canadian Railway and Marine World previously, was reported to be sufficiently completed for use early in January, about a month ahead of the contract date. The painting of the structure and the installation of the heating plant were said to be the only works uncompleted. Grant and Horne were the contractors.

Rapid progress is reported to have been made with the construction of the passenger camp from the baggage shed to the pier. Permission for the construction of this camp was granted recently by the St. John City Council.

The company is reported to have given a contract to the Fegles Construction Co., Port Arthur, Ont., for the installation of the equipment in the conveyors, connecting berth 15 with the company's elevators at West St. John, at an approximate cost of $50,000. The conveyors are being built by Grant and Horne, St. John, N.B.

Chateau Frontanac, Quebec—D. H. Mapes, Engineer of Buildings, C.P.R., addressed the Montreal Rotary Club, Jan. 13, on "Problems which face a building engineer," in the course of which he gave details of the projected extension of the Chateau Frontenac. These extensions he said will alter the front of the hotel, the new wing, which will increase the hotel's capacity by 250 rooms, running up St. Louis St. The roof of the addition will provide a lookout for guests.

Aylmer Station—A press report states that an improved station will be erected at Aylmer, Que., during this year; that a new site has been surveyed and that cert ain preliminary work has been done.

London Division—A. Williams, Superintendent, London Division, is reported to have stated that an expenditure of $245,000 had been approved for betterments on the division; that the work to be done will include a new station at Ayr, at an estimated cost of $23,000; a new station at Puslinch, at an esti-

mated cost of $11,000; general betterments at Chatham, at an estimated cost of $45,000; improvements at Galt, at an estimated cost of $16,000; improvements to the locomtive houses at London and Windsor; a passing track between Zorra and Woodstock at an estimated cost of $8,000; that the present oil lights on 65 miles on the division on which the block signal system has been installed will be replaced by electric lights, and that minor works will be done at other points along the division. The installing of a block signal system between Guelph Jct. and Woodstock was completed during 1919, and there is a possibility of the system being installed during this year between Milton and Guelph Jct.

Lanigan Northeasterly Branch — The Board of Railway Commissioners has approved location plans of the branch northeasterly from Lanigan, Sask., mile 0 to 60.98, and authorized its construction across 53 highways. This is a line which the Dominion Parliament at its last session authorized to be built through Melfort into the Carrot River district. A contract for grading the first 50 miles was let in May, 1919, to Stewart and Welch, Calgary, Alta., and we were officially advised recently that 5% of the grading on it had been done up to Dec. 30, 1919. This is evidently the line referred to in a press report which states that the company had made preliminary arrangements for building a line into the Pas district, which would ultimately mean its extension into the Copper Lake and Lake Athapapuskow gold mining district. The Carrot River runs into the Saskatchewan River near Pas, and the mining districts referred to north of that place.

Connaught Tunnel—A press report states that a contract has been let to Sidney E. Junkins Co., for putting a concrete lining in the Connaught tunnel in the Selkirk Mountains. The tunnel is 5 miles long and the lining of it will, it is said, be one of the largest concreting jobs ever contracted for. (Jan., pg. 15).

Vancouver Pier Extension—In a statement made at Vancouver, B.C., Dec. 29, D. C. Coleman, Vice President, C.P.R., Western Lines, is reported to have said that the construction of the new pier will be put in hand just as soon as the contract is let, and that it is intended to ask for tenders very shortly. This projected pier is part of a comprehensive plan for the provision of complete facilities for the handling of the company's ocean and coastal ships at Vancouver. The location of the porjected pier is to be between two existing piers, and it is to be known as B.C. pier. The work proposed to be put in hand immediately will consist of dredging and filling.

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The National Steel Car Corporation incorporated recently under the Dominion Companies Act, has taken over the plant, equipment, business, assets and liabilities of the National Steel Car Co., Hamilton, Ont., under the terms of the agreement, particulars of which were published in Canadian Railway and Marine World. The following are directors: R. J. Magor, New York, President; D. Symington, Baltimore, Md.; H. H. Price, New York; D. B. Dewar, Hamilton. It is reported that other directors will be directed shortly when the other officers will be appointed. The company will continue to manufacture railway cars, for service and will largely increase its motor truck manufacturing department.

## Light Railways Projected for Northern Ontario.

In connection with the project for the construction of light railways in Northern Ontario, to which reference was made in Canadian Railway and Marine World for Dec., 1919, pg. 658, we are officially advised that the Canadian Light Ry. Construction Co. Ltd., plans to commence construction of a railway, meter gauge, approximately 39⅜ in. between lakes village and Gowganda town plot, as soon as the snow goes off the ground; that it is proposed to have the material on the ground ready for starting work by that time; that 30 lb. steel rails will be used for the 27 miles of track; that the motive power will consist of gasoline and oil burning steam locomotives and it is expected to have trains running into Gowganda by midsummer.

The company, we are further, advised, proposes to build extensions of the line from Gowganda into the Fort Matchawan and West Shining Tree mining districts respectively, and is working on plans to build on loop line, leaving the Timiskaming and Northern Ontario Ry. at Swastika, going through the Kirkland Lake, Larder Lake, Skead Tp., and Boston Creek areas and connecting again with the T. and N.O.R. at Boston Creek.

In connection with this project articles have appear in local papers comparing Australian railways of Australia with the light railways projected for Northern Ontario. The Canadian Light Railway Construction Co. has issued the following circular letter in this connection: "The railway situation in Australia is that several trunk and main lines have been built on different gauges, which of course has created an unsatisfactory system of railway transportation. The situation in Northern Ontario is that for the past 10 years railway extensions, good roads, etc., have been promised for these districts, or the subject, in some form, has been under consideration by various governments, but very little has bee done. The idea of building light railways is to give undeveloped districts immediate transportation facilities. The construction of light railways is only temporary. Their operation will assist development of water power and of the mining industry. When the business increases to warrant it, the light railways can be turned into electric or standard roads and the light rails and equipment can be transferred to new fields, to be used again as a method of assisting development. It is the intention to use light railways to assist the development of new and undeveloped districts. They are cheaper to build and maintain than macadamized roads, and will do the business on short hauls up to their capacity of a standard railway, and their is a commercial and business proposition. The Canadian Light Railway Construction Co. plans only to build branch lines, not trunk lines. Light narrow gauge railways embody three economic principles, low cost of construction, maintenance and operation. In addition they can be quickly laid down and run over almost any kind of country. They proved to be the most economical and successful method of transportation adopted by the allies during the war. Commercially they have been used in France, Belgium, Germany and Russia, for the past 20 years, as feeders to the main railways, and it is proposed to use them in the same capacity in this country. The Canadian Light Railway Construction Co. is not advocating light railways in preference to government owned standard or electric roads."

A convention of those interested in the development of Northern Ontario was opened at North Bay, Ont., Jan. 21, and among the subjects considered was that of the construction of light narrow gauge railways.

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## Railway Finance, Meetings, Etc.

Canadian Northern Ry.—A New York press dispatch of Jan. 9, stated that William A. Read & Co., who placed on the market on Jan. 7 an issue of $7,500,000 Canadian Northern Ry. Equipment Trust 6% bonds, Series D, 1919, had sold nearly the whole issue. The securities maturing June, 1920, to Dec., 1921, were reported to have been sold on a 6¼% basis, and those maturing June, 1922 to Dec., 1929, on a 6½% basis.

Canadian Northern Rolling Stock Ltd.—There was deposited with the Secretary of State at Ottawa, Jan. 22, duplicate original of a lease made by Canadian Northern Rolling Stock Ltd., to Canadian Northern Ry. Co., dated Dec. 1, 1919, to which is attached an assignment to Fidelity Trust Co., Philadelphia, Pa.

Ottawa Terminals Ry.—The directors for the current year, elected at the recent annual meeting, are: H. G. Kelley, President; W. D. Robb, Vice President; Frank Scott, Vice President and Treasurer; J. E. Dalrymple, R. S. Logan, W. H. Biggar and F. L. Bond.

Pacific Great Eastern Ry.—The British Columbia Government has placed an issue of $2,500,000 of 5 years 5% gold bonds at 97.84, yielding the investor 5½%, the proceeds of which will be used exclusively, the Finance Minister is reported to have said, in Victoria, Jan. 6, for construction of the Pacific Great Eastern Ry.

The Quebec Central Ry.—Accounts for the year ended June 30, 1919, issued recently, show a surplus, after meeting interest charges, of $274,742, and $88,249 was brought in making $362,991. The guaranteed dividend of 5% has been paid; $80,000 set aside for renewals, and $25,000 transferred to contingent fund, leaving a balance to be carried forward of $88,911.

Temiscouata Ry.—A meeting of holders of provisional certificates issued by the bondholders' committee for the 5% consolidated mortgage income bonds was held in London, Eng., recently. J. R. Ball, chairman, informed the certificate holders that if the extraordinary conditions under which the railway was operated were taken into consideration, the results of the operations for the year ended June 30, 1919, should not be considered unsatisfactory.

Timiskaming and Northern Ontario Ry.—

| | Nov.,1919 | Nov.,1918 | Dec.,1919 | Dec.,1918 |
|---|---|---|---|---|
| Passenger earnings | $70,431.12 | $47,399.04 | 072,803.76 | $52,921.20 |
| Freight earnings | 190,159.13 | 154,931.81 | 187,715.99 | 152,800.49 |
| Total earnings | 260,590.25 | 202,330.85 | 260,519.75 | 205,721.69 |

White Pass and Yukon Ry.—The accounts for the year ended June 30, 1919, which were issued recently, show a credit balance of £67,847, instead of a debit balance of £48,427, as at June 30, 1918. This is reported to be due to adjustments made in the company's finances under a scheme of arrangement.

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ADVERTISING RATES furnished on application.

ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of the issue in which it is to appear.

TORONTO, CANADA, FEBRUARY, 1920.

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## Index to Canadian Railway and Marine World for 1919.

At the end of this issue is a very complete index to the contents of the volume for 1919 which as in former years, will doubtless be fully appreciated by the large number of subscribers who bind Canadian Railway and Marine World for reference purposes.

Even a casual glance over the pages of closely printed matter will show the tremendous range of subjects covered and the thorough manner in which this paper represents the entire transportation interests of the whole Dominion, steam railway, electric railway, marine shipbuilding, express and telegraph interests, as well as railway and canal and harbor contracting work.

## Caraquet and Gulf Shore Ry. Proposed Sale.

Gloucester, N.B., County Council is reported to have passed a resolution asking the Dominion Government to take over the line from the company and make it a Canadian National Ry. branch, or to allow the New Brunswick Act summarized in Canadian Railway and Marine World, January, on pg. 12, to come into immediate effect. The Dominion Government has power to veto acts passed by a provincial legislature within a certain limited time. The Caraquet and Gulf Shore Ry. Co. has petitioned the Dominion Government to veto the N.B act referred to; another press report states that a proposition may be made under which Gloucester County would issue bonds for the difference of about $50,000 between the price at which the company is willing to sell, and that which the Dominion Government is willing to give for the line.

A letter signed C. W. White, in the St. John. N.B., Globe, of Jan. 21, referring to the Caraquet and Gulf Shore Ry. says: "This road is under option to a number of New York gentlemen, who will close the transaction during February. R. D. Isaacs, of St. John, who was in Bathurst recently, went over the road with an engineer. It is fully understood that Mr. Isaacs is the purchaser for the New York parties."

## C.P.R. Employes Entertained at Montreal.

On New Year's Eve, the President, Vice President and other C.P.R. officers, entertained about 6,000 of its Montreal employes at an at home at the Windsor St. station. The feature of the evening was the conveyance by picture of the season's greetings of the company's chiefs to the employes, each greeting beting proceeded by a portrait of the officer sending it.

The principal messages were as follows:

E. W. Beatty, K.C., President: "I wish every officer and employe a very happy new year. In doing so let me suggest that the greatest happiness can be achieved by duties faithfully performed, and that the first duty of a railway officer or employe is an appreciation of the grave responsibilities of his position and the paramount necessity of good service to the public. The high standard of the company's service can be maintained only by unremitting diligence, by courtesy, by friendly co-operation and by unfailing pride in the company's great traditions. I trust that you will all enjoy a maximum of health and happiness during the coming year."

Lord Shaughnessy, Chairman of the company: "Peace, contentment, happiness in home and occupational life, with all other blessings, be yours in the new year."

I. G. Ogden, Vice President, Finance Department: "May I have as good wishes from you all as I send to all of you for the new year."

## E. W. Beatty Urges Thrift.

E. W. Beatty contributed the following to the New York Sun recently: "With every new year we usually resolve to turn over a new leaf. If there is to be any general resolution made by the North American continent for the year, it might well be in the direction of thrift, for the first after-the-war years are causing natural concern to those who remember the financial panics which have always closed similar periods of careless spending. The extravagance noted by every recent visitor from Europe to this continent synchronizes with conditions of actual starvation affecting millions of people in Europe itself, who fought for freedom only to die for lack of food. This extravagance has been made possible, at least in part, by the heavy purchases made under stress of war by European nations on this continent. It represents the expenditure of unexpected profits, which are being dissipated, instead of placed in reserve for a rainy day. In this orgy of extravagance, Canada is just as great a sinner as the United States. In the last few weeks Canadians have been penalized to some extent for their uncurbed purchase of United States made luxuries by an adverse exchange. What the penalty to be paid by the U.S. will be, remains to be seen."

## Electrification of Steam Railways.

D. B. Hanna, President, Canadian National Rys., was reported in a London, Ont., press dispatch to have said in a speech there early in January, that within a short time all Canadian railway terminals will be electrified. We are officially advised that Mr. Hanna made no reference to the matter in his speech, but subsequently in conversation with some London business men, he did say that a time would perhaps come when railway companies would be forced to face such a situation. He did not say that the C.N.R. or any other Canadian railway had any present intention of electrifying its railway.

A Toronto daily paper, which has published several apparently fake stories recently about railway matters, stated early in January that the C.P.R. had decided to electrify its whole system, main line and branches. Grant Hall, Vice President, gave a categorical denial to this at once. We are advised that while the C.P.R. management is always looking into the future and has obtained data in connection with the possibility of electrifying various portions of its lines, nothing whatever has been done towards carrying out any portion of the work, nor is their any likelihood of anything being done in the immediate future.

Saxon State Railways Deficits — A Berlin, Germany, cablegram says that the state owned railways of Saxony, show a deficit of 300,000,000 marks.

# Electric Railway Department

## Electric Railway Employes' Wages, Working Conditions, Etc.

London St. Ry.—Following the adverse result of the plebiscite on the question of an increase of fares by the ratepayers of London, Ont., Jan. 1, the question of what the company would do was at once discussed. C. Currie, President, arrived in London from Cleveland, Ohio, and after going over the situation, it was announced Jan. 5, that the company would continue to pay the increased wages granted, in the hope that the ratepayers would authorize an increase in rates, and would endeavor to recoup itself by reducing the service given. On Jan. 12, announcement was made that there would be a curtailment of service, it being stated that two cars would be taken off the Ottawa line and one each off the Oxford, Normal and Richmond routes on Jan. 16. The service will be maintained as at present on Saturdays and Sundays; 45 cars will be operated during rush hours; "trippers" will be run whenever traffic warrants, but the new schedule cuts down the service during the hours when traffic is light. The London City Council had the matter of the reduced car service before it Jan. 19, when it was referred to a committee for consideration.

Niagara, St. Catharines & Toronto Ry. Wages—A Board of Conciliation has been appointed to investigate the question of wages and working conditions of the Niagara, St. Catharines and Toronto Ry.'s employes, G. D. Kelly, Ottawa, representing the company; J. A. McAninch, representing the men, and County Judge Snider, Hamilton, Ont., being Chairman.

Ottawa Electric Ry.—F. D. Burpee, Superintendent, issued the following bulletin, Jan. 7: "Beginning Jan. 16, the following rules will apply to spare conductors and motormen. A spare conductor or motorman is one who is not booked on a regular, relief or swing run. Spare men must report at the barns or relief points at the following hours, week days, 5.50 a.m., 10 a.m., and 5.25 p.m. Sundays, 8 a.m., 11.40 a.m., and 4 p.m. After reporting they must remain as long as the relief inspector or night barn clerk wishes. They must be properly clothed in uniform and ready to work. Spare men must report also, at times other than the above, when specially ordered to do so by an inspector, night clerk, or other proper authority. If a spare man is not employed after reporting, he will be credited with the full time he is held, which time in any case will not be less than one hour. The Inspector of Reliefs (Mr. Carson) will have charge of all booking. Spare men are entitled to lay off one day in each week of seven days if they wish to do so, but this layoff day must be arranged for with the Inspector of Reliefs. Spare men will not be allowed to lay off on Saturdays, Sundays or public holidays. A spare man who does not report at the regular times mentioned above, or whenever specially ordered, will be charged with a miss for each time he fails to do so. No miss will be charged against any man when he is off duty, by arrangement with the Inspector of Reliefs, or is on leave of absence, or has reported sick. Each spare man who has no misses charged against him, or who is not away on account of sickness, or who is not on leave of absence (except the weekly day off), will be guaranteed $37.50 for each pay period of one-half month as a minimum wage. If the time that has been credited to him for working and reporting does not reach that amount, the difference will be paid to him on the regular pay days. Not more than 5 spare conductors and 5 spare motormen must be allowed away on leave at the same time. No leave will be granted for more than 30 days, and only then if the demands of the service permit it. In future when spare men are employed they will be considered as on probation for 6 months. At the end of this probationary period, if their conduct has been satisfactory to the Chief Inspector, they will be taken on as permanent employes. If not satisfactory, they will be relieved from duty."

### Canadian Electric Railway Association.

**Honorary President,** Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.

**Honorary Vice President,** Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.

**President,** A. Gaboury, Superintendent, Montreal Tramways Co.

**Vice President,** G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

**Honorary Secretary-Treasurer,** pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

**Executive Committee,** The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

**Official Organ**—Canadian Railway and Marine World, Toronto.

## Preparing for Taking Over Toronto Railway by the City.

Following the carrying of bylaws providing for the city acquiring the Toronto Ry. on the expiration of its franchise in 1921 for the establishment of a transportation commission, and for the operation of the railway by a commission of three persons, without salary to be appointed by the city council, the city council is applying to the Ontario Legislature for the power to establish the Toronto Transportation Commission, consisting of three members, each of whom shall be a resident and a ratepayer, and appointed by the city council for three years, without salary, for the operation and control of all car lines, controlled or owned by the city. The commission's power to include the fixing of fares, so that the income shall be sufficient to make the transportation facilities self sustaining, and to make requisition upon the council for funds to carry out its duties. The powers asked by the council provide that it may without submitting the same to the electors, pass bylaws for the issue of debentures to cover the purchase of the Toronto Ry.'s property, and for the construction fo any new lines or extensions of existing lines, for rolling stock, buildings and other equipment.

## Automobile Drivers' Responsibility for Collisions With Street Cars.

The Ottawa Electric Ry. will be the plaintiff in accidents due to collisions with automobiles and other vehicles where such accidents are due to careless and reckless driving of automobiles and other vehicles. F. D. Burpee, Superintendent, O.E.R., in referring to the matter recently, said: "These accidents are becoming too frequent, and so many of them result in damage to the company's cars that we are obliged to take action. Careless driving upon the part of chauffeurs is becoming very serious. There is a class of chauffeur who recklessly rush in from side streets on to the main streets, without regard to results. Many of them have an idea that if a street car is on their left hand they therefore have the right of way. This is a mistake. Streets cars, under the city bylaws, have right of way over all other traffic at all times, but apart from this fact motormen on the cars are in many cases powerless to prevent collisions. The street cars are held to the tracks. Motormen can only go ahead or back up. They cannot turn out. Their instructions from the management to exercise care at all times and to do everything possible to avoid accidents, are strict and frequently repeated. On the other hand, practically every opportunity of avoiding collision is open to the chauffeur. He can approach main streets with caution, and he can guide his automobile in any direction and at any degree of speed. The public generally is vitally interested in this growing recklessness on the part of chauffeurs. Pedestrians, as well as passengers in street cars, are in constant danger. Much can be done to minimize the danger, and to decrease the number of accidents, if the owners of automobiles will warn their drivers, and punish them when accidents occur."

J. B. Bulley, Superintendent, Cape Breton Electric Co.'s Sydney Division, was presented with a set of pipes by motormen and conductors of his division recently.

Assessments of Electric Railways—The Grand River Ry. appealed recently against its assessment in Kitchener and Preston, Ont. The Kitchener court of revision dismissed the appeal against the assessment on the company's battery building, and the company has appealed to the county judge.

Louise Bridge, Calgary—The Calgary, Alta., City Council has under consideration plans for the erection of a new bridge across the Bow River, on the site of the present Louise bridge; the new structure to be of full street width, to accommodate a double track electric railway and the ordinary sidewalk.

# Ottawa Electric Railway Proposes Service at Cost.

F. D. Burpee, Superintendent, Ottawa Electric Ry., wrote the mayor of Ottawa, Jan. 21, asking that the city board of control at first opportunity take up the consideration of a service at cost arrangement as a solution of the electric railway problems. He pointed out that with the certainty that the city will not renew the franchise on its expiry in 1923, the company could not be expected to spend money in providing extensions of the service. In connection with this matter, Mr. Burpee issued the following statement Jan. 2:—

'Operating a street railway today, particularly on a 5c fare, is no bed of roses, and most companies are eager enough to have municipalities buy them out. The costs of operation increase directly with the volume of business done, and the price of every item that makes up the costs of operation has nearly doubled since before the war, but the revenue is definitely controlled by the rate of fare. Service at cost contracts are not obstructive to municipal ownership. In fact the most of those in force provide that the city can take over the railway at any time on giving a year's notice. This clause makes such a contract a stepping stone towards municipal ownership. Ottawa Electric Railway shareholders are not averse to municipal ownership, and if the city desires to purchase in 1923, will do everything possible to facilitate the transfer of the property.

"The normal increase of business which halted during the war, has resumed, and we feel sure that this increase of business will continue. Next year it will be still more difficult to handle, and increasingly so from year to year till the end of the franchise. We are making daily use of our entire plant, and we cannot help but realize that from now on the general efficiency of our plant will be affected, but the demand for constant use will steadily increase. We admit that we cannot adequately serve the Ottawa public today, but we are doing our level best and placing every available car where it will serve the greatest number of people. The mayor stated yesterday that there seemed no good reason why the company should not make the necessary extensions and additions to its assets, as there was apparently little risk that there would be a fall in prices between now and 1923, when the city, under its agreement, is bound to pay for everything the railway has at that time. We have no cash reserves to make such purchases. Our reserves are already invested in cars, power house machinery, barns, etc. As a very large amount would be required to make any material improvement in the system, the shareholders certainly do not intend to try and raise that large amount on a franchise of three years, even if it were possible to do so, which is extremely doubtful. The mayor also stated that any valuation taken today must necessarily be higher than anything we have ever known and that no one can tell how it will compare with future values. Is it not also positive that future values may be considerably higher than they are today, and this may be the case in 1923? Certainly there are no indications of falling prices. Many of the best economists in the world are of the opinion that the present standard of values is a permanent one, and that we cannot expect ever to return to the old state of things that existed before the war.

"To put a service at cost contract into effect requires a valuation of the property to decide what return shall be made to the owners of it. It makes no difference whether the company is capitalized at one million or ten million, the value is based on what the company actually owns, not on stock certificates. Such a valuation is exactly the same as that called for by our franchise at its expiration in 1923. Why not take such a valuation now, and if prices are expected to change, provide that any time the city decides to take over the property, another valuation should be made? The mayor infers that a service at cost contract will tend to extravagant operation. One of the fundamental principles of such contracts is that all expenditures are absolutely fixed by an independent commission appointed by the public. If the company spends more money on operation than the commission has allowed the excess must be paid out of a guarantee fund which the company is called upon to maintain at all times out of the pockets of the shareholders. Some of these contracts add an extra spur to economical operation by permitting the company and its employes to share to some extent in any surplus that may accrue over and above the costs of operation.

"The promoters of this company were the pioneer electric railway men of Canada, and they naturally have more than a financial interest in the electric railway here. We have our critics, as all public utility concerns have, but it is generally admitted that in the past the city has been well served by its street railway. We are anxious to preserve that good opinion. To relieve a situation that it is clear to us will become a very difficult one in the near future, we have suggested service at cost as an immediate remedy, and have asked the city government to look carefully into it. It is being successfully operated today in a number of cities on this continent to the evident satisfaction of the riding public. We are ready to make a definite proposition after a discussion with the city's representatives, but at present suggest that the general idea of the plan be looked into, and that the fullest publicity be given to the whole question."

## Toronto Railway's Snow Removal Appeal.

The Judicial Committee of the Imperial Privy Council has dismissed the Toronto Railway Co.'s appeal against the city's claim for removing snow from the streets, where it had been deposited by the company, after removal from its tracks. The specific claim was for $14,000 for clearing snow in 1914. A London dispatch giving a summary of the judgment, states that the correspondence between the company and the city, particularly in 1914-15, showed acute difference between the parties on the subject of snow removal. The company claimed that it had the right to deposit the snow in the same places as used by the city. Local courts decided that the company's claim was untenable, and stated the company's duty in the matter. Later proceedings before the Ontario Railway and Municipal Board had the same result and the board's orders on the subject were not complied with. The judgment states that the board was practically helpless to enforce its order in this regard, as by the statutes there is nothing expressed or implied, which would give it power to penalize the company for a breach of contract. The judgment considered it the company's duty not to deposit snow on a street without having first obtained permission of the city engineers and there appeared to be no doubt that the company did so, thereby committing a breach of its statutory duty. Therefore the city is quite within its rights in seeing to the streets being cleared, and the expense so incurred, so far as applicable of the removal of improper deposits by the company, is one which the company is under obligation to pay.

## The Hydro Electric Power Commission of Ontario's Electric Railway Projects.

Toronto Eastern Ry.—The City of Toronto and all the other municipalities concerned in the project for the purchase of the Toronto Eastern Ry. from the Canadian National Railways, and its completion with terminals in Toronto at a cost of $8,360,794 have passed bylaws approving the agreement, and authorizing the issue of debentures for their several proportions of the cost. The City of Toronto vote on Jan. 1, carried the bylaw by 22,351 to 4,333, and York Township, voting Jan. 17, carried it by 252 votes to 10. Following is a list of the municipalities and the amounts of debentures authorized:

| | |
|---|---|
| Township of York | $ 381,587 |
| Township of Scarborough | 892,686 |
| Townsihp of Pickering | 482,050 |
| Township of Whitby | 280,304 |
| Township of East Whitby | 299,943 |
| Township of Darlington | 429,680 |
| Town of Whitby | 277,955 |
| Town of Oshawa | 711,894 |
| Town of Bowmanville | 216,030 |
| City of Toronto | 4,328,665 |
| | $8,360,794 |

**Hamilton-Galt-Elmira-Guelph Line**—Ten of the 17 municipalities interested in the project for the construction of an electric railway from Hamilton to Galt, Elmira and Guelph, voted at the municipal elections early in January on bylaws to raise their several proportions of the total of $6,530,659, which the line and its terminals in Hamilton are estimated to cost. Eight of the municipalities gave majorities for the bylaws, and in only one case, West Flamboro, was it defeated. Following is a list of the municipalities, the amount of debentures authorized to be issued, and the number of votes for and against where the voting has already taken place:—

| | | For | Against |
|---|---|---|---|
| Ancaster Tp. | $ 174,080 | 425 | 247 |
| Flamboro West Tp. | 82,734 | 131 | 225 |
| Beverley Tp. | 241,464 | 323 | 183 |
| Dumfries North Tp. | 157,817 | 80 | 65 |
| Dundas Town | 168,942 | 319 | 82 |
| Waterloo Town | 379,487 | 439 | 53 |
| Hamilton City | 607,173 | 5,577 | 1,742 |
| Galt City | 1,318,031 | 1,029 | 73 |
| Kitchener City | 1,053,080 | 1,174 | 407 |
| Guelph City | 855,239 | 1,099 | 248 |
| Waterloo Tp. | 557,973 | 385 | 211 |
| Woolwich Tp. | 283,687 | 284 | 27 |
| Puslinch Tp. | 38,543 | ..... | ..... |
| Guelph Tp. | 92,549 | ..... | ..... |
| Elmira Village | 91,484 | 271 | 2 |
| Preston Town | 281,615 | 317 | 153 |
| Hespeler Town | 146,761 | ..... | ..... |
| Total | $6,530,659 | | |

# Toronto Railway's Car Shortage Penalty Appeal Allowed by Privy Council.

The Toronto Ry. Co.'s appeal against a penalty of $1,000 a day for 24 days, imposed by the Ontario Railway and Municipal Board for failure to carry out the board's order of Nov. 9, 1914, for the supply of 100 double truck cars, by Jan. 1, 1918, and another 100 by Jan. 1, 1919, was allowed by the Judicial Committee of the Imperial Privy Council, Jan. 20, with costs of the Privy Council and the Ontario Supreme Court appeals. The history of the case dates back for some time before the war. Different orders were made by the board, on the city's application for the provision of additional cars of a type to be approved by the board, and after considerable experimenting by the company, it was practically shown that the type of car desired by the outside parties was more or less of a freak and was impracticable. The orders were then rescinded and a new order made on Nov. 9, 1914, after a special report prepared under an order of the board on the Toronto Ry. traffic conditions, that the company provide 100 additional cars by Jan. 1, 1918, and another 100 by Jan. 1, 1919. In the meantime, war had commenced, and not only the financial condition, but the general industrial condition of the country was upset, owing to the necessity for diverting everything of that nature to war purposes, and it was practically impossible for cars to be built for ordinary uses. The city made various applications to the board to compel the company to carry out the board's order, without having any regard to the conditions prevailing throughout the world, and alleging what amounted to contumacy on he company's part. The matter drifted along until early in 1918, when special legislation was passed by the Ontario Legislation for the alleged purpose of strengthening the board's power to enforce compliance with any order it might make, by providing a penalty not exceeding $1,000 a day for noncompliance with any such order. This legislation became effective Mar. 26, 1918, and on Apr. 9, on the city's application, the board inflicted a penalty of $1,000 a day, from Mar. 26 on the company for not carrying out the order to provide 100 cars by Jan. 1, 1918. The company immediately entered an appeal against the penalty order on the grounds that the board had no jurisdiction to make such an order, that the order was not made for the purpose of enforcin gcomplaince with any order, and that under the Ontario Railway Act, the board cannot order a penalty to be paid for any neglect or noncompliance with any order prior to the date of the order providing such penalty; that the company used its best efforts to comply with the board's order, but it was impossible, owing to war and other conditions to obtain cars, and that the order inflicting a penalty was against evidence and contrary to law and the weight of evidence, and also that evidence was wrongfully rejected. The Supreme Court of Ontario's Appellate Division, confirmed the board's orders, both as to the provision of the cars, and the infliction of the penalty, the company immediately entering an appeal to the Imperial Privy Council.

In allowing the appeal, Lord Finlay is reported to have stated that the board is authorized to impose penalties for noncompliance with its orders, but subject to the condition that such penalties must be "for the purpose of enforcing compliance" with these orders, and this expression points not to the summary imposition of a penalty for a past breach without previous warning, but the imposition of a penalty in advance, for the purpose of procuring obedience to the order, and, in his opinion, it was not the Ontario Legislature's intention that the board should be empowered to impose penalties, except after giving the railway warning that penalties would be imposed, after a specified period, and giving it the opportunity of avoiding such penalties by complying with the order. Accordingly, the order of Apr. 19, 1918, was authorized by the act. He considered that the company was not prevented by war conditions, from supplying cars, and was gravely in default, but even so, was entitled to a notice of penalty and an opportunity of meeting it. The point raised by the company, that by the powers conferred on the board, it must be regarded as a superior court within the meaning of the British North America Act, and that members should be appointed by the Governor General of Canada, and not by the Lieut.-Governor of Ontario, was fully considered by the Supreme Court of Ontario, which decided against the company, and in consequence of the view taken on other points of this appeal it was unnecessary for the Judicial Committee to argue it, and he expressed no opinion on the matter.

## Nova Scotia Tramways and Power Co.'s Increased Expenditures.

In connection with the passing of the semi-annual cumulative dividend recently, making one year now in arrears, the company issued a circular to shareholders, from which the following are extracts:—"For the 12 months ended Sept. 20, 1919, gross earnings increased approximately $237,000 over the corresponding period of 1918, but operating expenses and taxes increased $296,000. The increase in operating expenses was due to to the high cost of labor and materials, to large expenditures needed to place the gas and tramways departments in better operating condition, and to an increase in taxes amounting to almost 35%. The tramway is obliged by the terms of its charter to maintain a rate of fare averaging 4.3c per passenger. Every possible effort will be made at the next session of the legislature to have the charter changed to allow for a proper increase in the rate of fare. With a higher fare and by the use of one-man safety cars which are being installed, the situation should be helped materially. For the 9 months ended Sept. 30, the balance of earnings for reserves, replacements and dividends was $94,575 and it is estimated that this balance for the 12 months ended Dec. 31, 1919, will not exceed $116,216. The semi-annual dividend of $3 per share paid in July, 1919, required a disbursement in cash of $62,364, thus leaving a balance which would be insufficient to cover the dividend due on Jan. 2, 1920, even if no provision were made for depreciation."

## Southern Canada Power Co.'s Annual Report.

The Southern Canada Power Co. owns 11 electric lighting and power plants in Canada and one in Vermont, and of these only one, the Sherbrooke Ry. and Power Co., operates an electric railway in addition. The annual report for the year ended Sept. 30, 1919, issued recently does not give details of the railway operations separately, but gives earnings, expenses, etc., of its whole operations in bulk. The following table gives the figures, all inter-company charges being eliminated:—

| | | |
|---|---|---|
| Gross earnings | | $566,091 |
| Purchased power | $ 93,941 | |
| Taxes | 10,989 | |
| Operation and maintenance | 180,953 | |
| Administration | 23,987 | 309,780 |
| Profit from operation | | $256,311 |
| Non-operating profits | | 6,982 |
| | | $263,293 |
| Bad debts | $ 1,114 | |
| Interest | 204,115 | 205,229 |
| Surplus for year | | $58,054 |

The profit and loss account, showed a balance of $146,008.84 brought forward, which has been increased to $201,035.02. The total assets are valued at $8,425,-707.06, of which $7,961,897.51 represents the company's various properties. The capital outstanding includes $285,-200 preferred stock, $4,285,200 common stock; $3,036,900 first mortgage bonds; $110,777.95 bonds of subsidiary companies, and $27,307.75 real estate mortgages. The current liabilities were $74,787,27, and the accrued bond interest $15,699.07, the other liability being the $201,035.02 balance to credit of profit and loss account.

The following are the directors for the current year:—President, W. C. Hawkins; General Manager, Jas. B. Woodyatt; other directors: W. K. Baldwin, M.P., Jas. Davidson, J. S. Gillies, W. H, Miner, A. J. Nesbitt, G. Parent, K.C., M.P.; C. E. Read, J. M. Robertson, H. Sifton, J. R. Moodie. Secretary-Treasurer and Purchasing Agent, L. C. Haskell; Assistant Secretary - Treasurer and Comptroller, C. Johnstone. The Sherbrooke Ry. and Power Co.'s directors for the current year are: W. C. Hawkins, A. J. Nesbitt, J. B. Woodyatt, Grant Johnston, C. Johnstone and L. C. Haskell.

## Montreal Tramways Co. and Cost of City Sewers.

Under existing legislation the Montreal Tramway's Co. has to pay one-half of the cost of sewers built on the highways along the company's right of way. The company contends that it does not benefit in any way from the building of such sewers, the only benefit occruing to the owners of properties alongside the right of way, and that, therefore it should be relieved of the charge. A bill has been introduced in the Quebec Legislature to add a new section, 25b to the act, 1 George V, as amended by the act 2, George V, as follows: "Notwithstanding any law to the contrary, the strips of land belonging to the company and constituting its right of way, when in the centre or bordering on a street road or highway in a municipality, shall not be considered as property fronting on such street, road or highway, nor required, as such, to contribute to the cost of construction, maintenance or repair of roads, sidewalks, waterworks, or public drains of such municipality."

# Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—Point Grey municipal council on Jan. 13, granted the company permission to lay tracks on Grenville St. W. G. Murrin, Assistant General Manager, Vancouver, was present and explained that the company has no particular desire to build the line, but it is under an obligation to the C.P.R. to make an expenditure of $50,000. (Jan., pg. 34).

**Calgary Municipal Ry.**—Tenders have been received for the supply of ties and bolts for repairs to the tracks during this year.

After lengthened consideration, the Calgary, Alta., City Council has adopted a route for the extension of the Tuxedo Park line. It favors the extension of the present Center St. line from the present terminus at Twentieth Ave. to beyond Thirty-Second Ave. In order to carry out this plan the Canadian Estates Co. is being asked to permit the removal of the present line on First St., northeast to Center Ave., and for the taking up of the present line from Twenty-Fourth Ave. northeast, this track to be relaid on the Edmonton trail to Twenty-Seventh Ave., northeast.

In connection with a recent accident on the Fourteenth St. West hill, A. G. Graves, City Commissioner, and T. H. McCauley, Superintendent, have made a number of recommendations for the rerouting of cars, the construction of new loops, improvements to the car brakes, etc., with the view of making the operation safe. A press report states that the estimated cost of the improvements is $14,000. (Dec., 1919, pg. 670).

**The Hamilton, Grimsby and Beamsville** Electric Ry.'s barns at Beamsville, Ont., together with 3 passenger cars, were destroyed by fire, Dec. 28. The amount of the damage is variously estimated at from $40,000 to $75,000.

**Kingston, Portsmouth and Cataraqui** Electric Ry.—We are officially advised that the company will make necessary repairs to its track, but is not contemplating any new construction.

**London and Port Stanley Ry.**—London, Ont., ratepayers, on Jan. 1, by a vote of 2,930 to 2,188 defeated a bylaw for carrying out various betterments on the line, and the purchase of an electric locomotive and 6 passenger cars as detailed in Canadian Railway and Marine World for January, pg. 34. The commission asked for $218,000, but the city council cut it down to $200,000, which was the figure voted on. P. Pocock, Vice Chairman of the London Railway Commission, is reported to have stated, Jan. 5, that the defeat of the bylaw was probably caused by the large number of money bylaws voted upon, and the total amount asked for frightened the people that the money asked for the L. & P.S.R. is absolutely needed if the commission is to take care of the traffic and that the commission will, most probably, ask the council to have the bylaw submitted again at an early date. At this year's inaugural meeting of the London Railway Commission the question of the purchase of an electric locomotive and 6 cars was laid over for future consideration. It is said to be probable that the money for this rolling stock, and betterments for which the $200,000 is required will be obtained by means of short term loans.

The new station building at Port Stanley, Ont., which has already been described in Canadian Railway and Marine World, was opened Jan. 19.

An agreement with the London Gas Co. for the building of a spur line to the gas works has been approved, and it was decided to make application to the gas company for permission to extend the spur to the old Hunt's mill property and the hydro electric substation. (Jan., pg. 34).

**The Moncton Tramways Electricity** and Gas Co.'s car barns at Moncton, N.B., were destroy by fire Dec. 26, the estimated amount of the damage being about $50,000. The property destroyed included the car barn, and the machine shop, together with one car and a sweeper. A watchman lost his life as a result of injuries received during the fire. The property was only partially covered by insurance, the amount awarded to the company by the adjusters being reported to be $8,540.

**The Montreal and Southern Counties** Ry. Co. is asking the Dominion Parliament to extend the time within which it may build its authorized lines of railway, and for other powers. The company was incorporated by the Dominion Parliament in 1897 to build a railway to be operated by electricity or any other mechanical power except steam, from the northern limit of Chambly County, Que., through Chambly, Vercheres, Rouville, St. Hyacinthe, Laprairie, St. Johns, Iberville, Missisquoi, Brome, Shefford, Stanstead and Sherbrooke Counties to the City of Sherbrooke, Que. In 1898 it was given power to build lines also in the Beauharnois, Chateauguay, Huntingdon and Napierville Counties. Extensions of time for construction were subsequently granted, the last being one of five years, granted in 1915. The company passed under G.T.R. ownership, and its railway consists of a line built from Montreal crossing the G.T.R. Victoria Jubilee Bridge to St. Lambert and Longueuil, and a converted Central Vermont Ry. branch having a total mileage of 52.20 miles. (Dec., 1919, pg. 670).

**The Montreal Tramways Co.** is, we are officially advised, building a new line on Stroville St., from Mason St., to Belanger St., 1.15 miles. At present it is not contemplating doing any new construction, but the usual work of renewal of tracks will be gone on with during the coming construction season. The company contemplates the immediate construction of a new substation at Cote St., with 10,000 k.w. capacity. (Dec., 1919, pg. 670).

**The Oshawa Ry.** has been authorized by the Board of Railway Commissioners to lay a second track across Wilkinson and Barrie Aves., and to make changes in the location of an existing spur line in Oshawa, Ont. (Aug., 1919, pg. 449).

**Port Arthur Civic Ry.**—A press report states that the Port Arthur, Ont., Civic Ry. contemplates the purchase of wires, etc., for the renewal of the overhead work on 4.5 mile of single track during this year.

**Quebec County**—A Quebec press report states that plans have been prepared for building an electric railway to link up a number of parishes and summer resorts in Quebec County, and that the project was laid before representatives of municipalities interested at a meeting held recently at Loretteville. The suggestion is to start from the Sillery terminus of the Quebec County Ry., a subsidiary of the Quebec Ry., Light and Power Co., run through the Sillery, Cap Rouge, La Suede, Les Sauls, Lorretteville, Ancienne, Lorette, Charlesbourg and Beauport municipalities and connect with the Q.R.,L. and P. Co.'s line in Limoliou Ward, Quebec City. The estimated cost is $500,000, and the promoters are said to be ready to begin building in April.

**Quebec Ry., Light and Power Co.**—Some complaints having been made as to the condition of extension work on the Beauport Road, W. J. Lynch, General Manager, was reported to have said, Jan. 13, that the extension was completed and that cars were running as far as the Canadian Northern Ry. crossing by Nov. 13, two days ahead of the date stipulated on the agreement with the city. Beyond the C.N.R. tracks grading has been finished and track laid, but owing to the state of the ground, the erection of the poles for the overhead work has been suspended. It is the company's intention to complete the work with as little delay as possible. (Jan., pg. 34).

**Toronto Civic Ry.**—We are officially advised that there were no extensions of or additions to the track, rolling stock or buildings during 1919. The only projected extension on which there is any definite instruction at present is the double tracking of the present temporary single track line on Bloor St. West, between Quebec Ave., and Runnymede Road, 0.491 mile.

Tenders will be received to Feb. 17, for the construction and equipment of the St. Clair Ave.-Mount Pleasant Road extension. The specifications show that this work involves the widening of St. Clair Ave., east of Yonge St.; the laying of a permanent pavement, with a double track railway, along the middle of the street; the grading of Mount Pleasant Road, the installation of a temporary ballast line; the construction of bridges and trestles, and the provision of 13 cars for the operation of the line. The track will be laid with 7 in. girder rails, 122 lb. to the yard; the St. Clair Ave. track to be classed as permanent, and the Mount Pleasant Road track to be classed as temporary. (Jan., pg. 34).

**Toronto Ry.**—The Board of Railway Commissioners has ordered the company to pay the C.P.R. $10,093,98, being 10% of the estimated cost of the subway at Avenue Road, and interest at 5% on half the cost of the work during construction, and on the total cost from completion, amounting to $13,807.01, altogether $23,900.99. (Dec., 1919, pg. 671).

**The Waterloo-Wellington Ry. Co.** will apply to the Ontario Legislature to amend the letters patent incorporating the company under the name of the Berlin and Bridgeport Electric St. Ry. by authorizing it to build an electric railway from Bridgeport, through the Waterloo and Guelph townships to the City of Guelph.

A press report referring to the above, prior to the official notice of the application to the legislature being published, stated that W. H. Breithaupt, Kitchener, President of the company, said that after such a line had been built the company might be induced to sell out to the Hydro Electric Power Commission of Ontario at a fair price. (Jan., pg. 33).

# Mainly About Electric Railway People.

Thos. Ahearn, President, Ottawa Electric Ry., is spending some time at Coronado Beach, California.

O. E. Baldwin, heretofore Purchasing Agent for the City of Guelph, Ont., has been appointed Manager, Guelph Radial Ry. at a yearly salary of $1,800. He had transportation experience in London, Eng., where he is reported to have managed a motor bus company.

Sir Adam Beck, Chairman, Hydro Electric Power Commission of Ontario, who went to England, towards the end of Dec., 1919, where he was attacked by pneumonia, is reported to be convalescing there and hoping to be able to sail for Canada about the middle of February. He has been reappointed by the London, Ont., City Council to the London Railway Commission, which manages the London and Port Stanley Ry. for two years. He has also be re-elected Chairman L.R. Commission.

H. Brooker, dispatcher, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., has resigned, and is reported to have entered Hydro Electric Power Commission of Ontario's service, in connection with the operation of the Sandwich, Windsor and Amherstburg Ry., which is being taken over by the commission.

E. P. Coleman, General Manager, Dominion Power and Transmission Co., addressed the Hamilton, Ont., scientific society, Jan. 16, on public utilities, dealing particularly with those supplying electric light and power, and operating electric railways. In the course of his address he gave an account of the origin and development of the Dominion Power and Transmission Co., and the electric railway companies owned and operated by it.

N. S. Cumming, heretofore chief clerk, Dominion Power and Transmission Co.'s railway department, Hamilton, Ont., has been appointed Superintendent Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., vice W. R. Robertson, resigned to enter the Hydro Electric Power Commission of Ontario's service.

Alderman T. J. Hanningan, Secretary, Ontario Hydro Electric Railway Association, resigned from the Guelph, Ont., City Council, Jan. 12, as a protest against the council having elected Alderman H. Westoby as mayor, Mr. Hannigan alleging that Mr. Westoby is opposed to the hydro projects, though the latter expressed himself subsequently as in favor of at least some of them.

A. F. McGill, Assistant Superintendent, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., has resigned, and is reported to have entered Hydro Electric Power Commission of Ontario's service, in connection with the operation of the Sandwich, Windsor and Amherstburg Ry., which is being taken over by the commission.

J. Moir, Traffic Superintendent, Edmonton, Sask., Radial Ry., was suspended from duty by the mayor, Jan. 7. On the following day the mayor issued a memorandum giving reasons for the step he had taken, and making a number of charges against Mr. Moir. The committee in charge of public utilities held a meeting Jan. 9, at which the mayor withdrew all the charges made and withdrew the suspension of Mr. Moir, who was thereupon reinstated in office. Mr. Moir then resigned his position, his resignation to take place in 30 days. On Jan. 10 the city commissioners granted him two months pay on his retirement.

A. N. Pay, Master Mechanic, Niagara, St. Catharines and Toronto Ry., St. Thomas, Ont., has resigned, and is reported to have entered Hydro Electric Power Commission of Ontario's service in connection with the operation of the Sandwich, Windsor and Amherstburg Ry., which is being taken over by the commission.

P. Pocock has been reappointed by London, Ont., City Council as a member of the London Railway Commission which manages the London and Port Stanley Ry. for a further term of two years. He has also been re-elected Vice Chairman of the commission.

W. R. Robertson, Superintendent, Niagara, St. Catharines and Toronto Ry., has resigned to enter the Hydro Electric Power Commission of Ontario's service. He is on its railway department's staff and is in charge of operation.

Herbert Grant Tulley, who has been appointed President, International Ry. Co., Buffalo, N.Y., was born at St. John's Common, Sussex, Eng., Aug. 1, 1872, and for some years was in the British army in India. On leaving the British army, he went to the United States, entered the Metropolitan Life Insurance Co.'s service, and served in various capacities from 1899 to 1905. From 1905 to 1911 he was investigator, adjustor, assistant claims agent, and officer in the Transportation Department, Chicago, City Railways, Chicago, Ill.; 1911 to Jan. 14, 1920, Assistant Superintendent of Transportation, Superintendent of Transportation, and Vice President, Philadelphia Rapid Transit Co., Philadelphia, Pa. The International Ry. operates 435 miles of track, including city services in Buffalo, Niagara Falls and Lockport, N.Y., and connecting interurban lines, and the Niagara Falls Park and River Ry. in Canada.

Senator J. M. Wilson, one of the Montreal Tramways Co.'s directors, has given $100,000, towards the restoration of Laval University, Montreal, which was seriously damaged by fire recently.

C. J. Yorath, City Commissioner, Saskatoon, Sask., who has charge of Saskatoon Municipal Ry., was reported recently to have been appointed Comptroller-General for Manitoba. The Premier of Manitoba advised Canadian Railway and Marine World, Jan. 25, that Mr. Yorath had not received any appointment from his government.

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Transcona-Winnipeg Omnibus Line—The Transcona, Man., Town Council, on Jan. 13, instructed its clerk to get in touch with Winnipeg city officials to obtain permission to establish a terminus in Elmwood for an omnibus line from Transcona; to secure estimates of the cost of motor busses and to report to a future meeting. The route of the projected line follows the Nairn Road from Transcona to the Elmwood end of the Louise bridge, Winnipeg, near the end of the Winnipeg Electric Ry. on Talbot Ave., 4.5 miles. Details of the service and the fares will be fixed at a future meeting. Several attempts to establish an electric car line between Transcona and Winnipeg have failed.

## Proposals for Buying Ontario Electric Railways.

Guelph Radial Ry.—Guelph, Ont., ratepayers, by a vote of 1,095 to 237, passed a bylaw on Jan. 1 to raise $150,000 by debentures for improving the Guelph Radial Ry. and buying additional rolling stock. It is to be operated as part of the electric railway system to be built and operated by the Hydro Electric Power Commission of Ontario.

Mayor Westoby, in his inaugural address to the city council on Jan. 19 is reported to have urged its members to co-operate in every way with the Hydro Electric Power Commission of Ontario to the end that Guelph may secure at an early date the hydro radial railways promised. He is also reported to have said that the Radial Ry. will be taken over by the commission, under the terms of the bylaw, in July, when improvements in the service will be made.

Sandwich, Windsor and Amherstburg Ry.—We were officially advised, Jan. 15, that it was expected that the Hydro Electric Power Commission of Ontario will assume control of this railway, the purchase of which was authorized by bylaws, passed by the nine municipalities interested, on Dec. 6, 1919, about the middle of March. Until the transfer is made the railway will be managed by the same staff as heretofore. One of the conditions of the transfer is that any of these officials shall resign on request from the commission.

Sarnia St. Ry.—A member of the Hydro Electric Power Commission of Ontario's engineering staff visited Sarnia, Ont., recently and it was reported Jan. 16, that complete survey of the Sarnia St. Ry. and its possibilities would be commenced by the commission's engineers during February. It is expected that as the result of the survey a proposition will be made to acquire the line by the city, and to extend it.

Toronto Suburban Ry.—On Oct. 16, 1919, the Toronto Board of Control requested the Works Commissioner to confer with the government authorities to ascertain what arrangements could be made for co-operation in the operation of the "City and Suburban Street Ry." and to form a scheme of operation for the benefit of the citizens. On Jan. 2, the Works Commissioner reported that he had received the following letter from A. J. Mitchell, Vice President, Canadian National Rys., dated Oct. 30, 1919:—

"The sale of the street railway lines within the City of Toronto, owned by the Canadian National Rys., was discussed at the last meeting of our board, when it was decided that the company would consider the sale of such lines at a fair price to be agreed on with the city, or subject to arbitration, providing that the city would agree to taking over the Woodbridge extension, or providing running rights to this company on an equitable basis over the lines taken over. The whole question of the operation of electric lines is under consideration at the present time and should the Hydro Electric Power Commission of Ontario proceed with an extensive programme of hydro radials this company might make an arrangement with the commission with respect to its lines outside the City of Toronto. I presume such an arrangement would not affect, but would rather advance, what the City of Toronto has in mind with respect to radials within

the city limits. I will be glad to discuss this matter further with you at any time."

In submitting this letter to the board of control, the Works Commissioner said: "Having regard for the provisions of the agreement between the city and the Hydro Electric Power Commission of Ontario, requiring the assent of the commission to acquisition by the corporation of any such lines, will your board please adopt a policy and instruct me further?"

On Jan. 14 the board of control decided to consult the Hydro Electric Power Commission of Ontario on the matter.

## Reported Negotiations for Sale of Quebec, Montmorency and Charlevoix Ry.

Under an act of 1918 the Dominion Government was authorized to acquire from the Quebec Ry., Light and Power Co., the portion of its lines known formerly as the Quebec, Montmorency and Charlevoix Ry., extending from Quebec to St. Joachim, 25.1 miles, and there connecting with the Quebec and Saguenay Ry. Although this latter line has been taken over by the government under the same act, the Quebec, Montmorency and Charlevoix Ry. has not, but the Quebec and Saguenay trains are operated over it to Quebec under traffic agreement.

A press report states that negotiations are in progress between an English syndicate, acting in close conjunction with the Delaware and Hudson Co., for the purchase of the line from Quebec to St. Joachim; the price mentioned being $2,000,000. The D. and H. Co., through its own lines in Canada—the Quebec, Montreal and Southern Ry. and the Napierville Junction Ry.—is reported to have secured running rights which will carry it up to the Quebec Bridge. Arrangements for running rights over this bridge into Quebec can, it is stated, be secured, and as a result, the Q., M. and S.R. could be linked up and with running rights over the Quebec and Saguenay Ry., which could probably be secured from the Dominion Government, the D. and H. Co. would have a through route to Murray Bay and other tourist points on the lower St. Lawrence River.

## British Columbia Electric Railway Passenger and Lighting Rates.

The British Columbia Public Utilities Commissioner gave his decision recently on the Burnaby District's complaint that the British Columbia Electric Ry. was discriminating against the municipality in its electric light rates. The company in July, 1918, faced an increase in wages and suffered a strike. Before reoperating the cars the company asked for an increase of passenger fares in the City of Vancouver and in the Point Grey, South Vancouver and Burnaby municipalities. The increase was granted by all the municipalities except Burnaby, and in return for this concession the company agreed to a reduction in rates for lighting charged in the three municipalities named. The single city line, the Hastings East line, in Burnaby operate on the old fares. The Burnaby Lake line is an interurban one under the Board of Railway Commission's jurisdiction. Apart altogether from negotiations for increased fares on city lines, the company applied for, and received, authority to increase them on the Burnaby Lake line from the Board of Railway Commissioners, but Burnaby municipality appealed against this decision.

The commissioner, after reviewing the whole matter, says he can see nothing in the case which implies discrimination by the company. It appears that Burnaby municipality is seeking relief from a situation which has arisen out of its council's considered action. It is probable that under the existing rates, brought about in the way described, users of electric light are sufferers in comparison with users in other municipalities who pay standardized rates, but on the other hand users of the Hastings St. car line are gainers. If this discrimination exists, it is discrimination against electric light users, but the Burnaby people are responsible therefor through their elected council. As the commissioner's jurisdiction as to fares on the Hastings St. line is to say the least of it, questioned by the 1919 amendment to the Dominion Railway Act, he considered himself only competent to deal with electric light rates, and these could not be dealt with until after a proper segregation of the company's electric light and power systems from its railways. The application was therefore adjourned until the question of jurisdiction has been definitely settled. As the company wishes to standardize both railway rates, on the Hastings St. line, and light rates, he suggested that the parties get together and come to an agreement on such a basis.

## Increases in Electric Railway Freight and Passenger Rates.

**Grand River Ry.**—The Board of Railway Commissioners has authorized the company's standard passenger tariff 16, C.R.C. 14, fixing a fare of 2.875c a mile on all its company's lines and which went into effect Jan. 20.

**London St. Ry.**—London, Ont., ratepayers on Jan. 1, voted 4,080 to 3,604 against authorizing the company to increase its fares.

**Ottawa Electric Ry.**—In connection with the company's appeal against the Board of Railway Commissioners' refusal to grant an increase of fares on the Britannia line, which was argued before the Supreme Court of Canada, Nov. 17 and 18, 1919, the court on Dec. 22, 1919, decided that it requires further argument on the following questions:—1. Has the Board of Railway Commissioners authority to reduce the company's charge for passenger services within the City of Ottawa, below the fare of 5c now charged for any such services? 2. If the first question is answered in the negative, has the board power to require the company to provide a service partly within and partly beyond the limits of the City of Ottawa for a charge not exceeding 5c? 3. In passing upon the questions raised upon this appeal is the court in any respect governed by the Railway Act, 1919, Sec. 325? The argument will probably be heard in February. Nepean Tp. is the respondent.

**Winnipeg Electric Ry.**—A Winnipeg press dispatch of Jan. 28 says that the 6c street car fare there, will continue for some months. Justice Curran having stated that, even if the city should be successful in an action to obtain an injunction restraining the company from collecting such a fare, the injunction would not become operative for many months.

## Montreal and Southern Counties Ry. to Build Bridge at Granby.

Judgment was given Dec. 31, in the Quebec Court of King's Bench, upon the Montreal and Southern Counties Ry.'s appeal against a Quebec Superior Court judgment in an action brought against the company by the City of Granby. The action arose out of the interpretation of the company's franchise contract with the city; one of the clauses of which provided for the construction of a general traffic bridge over the Yamaska River by the company, and authorizing the city, if the company failed to build the bridge, to build it at the company's expense. The company had not built the bridge, because it did not want to lay its lines along the road crossing the river, but the city called for its erection. The Superior Court held that the company should build its bridge, and the Court of King's Bench, with one dissentient, has upheld that decision.

The appeal raised not only a question of the legal interpretation of the contract between the parties, but also asked whether the issue was not one for the Board of Railway Commissioners and not the civil courts to decide. Judgment, as arrived at by a majority of the court—Justice Carroll dissenting—was that under the conditions of the contract this was a question properly before the courts and that the company was wrong in its contentions. As a result, the majority judgment, orders the company to build a steel bridge over the Yamaska River at Irwin St., over which vehicles and pedestrians may safely pass. If it fails to do so, the City of Granby is authorized to build the bridge at the company's expense.

**Hydro Electric Power Commission of Ontario's Railway Construction** — In connection with the railway work which forms part of the power development being carried out by the Hydro Electric Power Commission of Ontario in the Niagara Peninsula, we are officially advised that the Canadian Bridge Co.'s tender has been accepted for the supply and erection of 3 double track deck plate girders to be designed for Cooper's E-70 loading. Each span will be 75 ft. long, designed in accordance with Michigan Central Rd. specifications, with concrete floor for ballasted deck. The bridge will be erected at the crossing of the Niagara power development canal about 1,000 ft. east of the crossing by the M.C.R. main line of the Welland River at Montrose, Ont.

**Application for Increased Fares in New York**—The Receivers for the New York Ry., the Interborough Subway and Elevated Lines, in Manhattan, and the Brooklyn Rapid Transit Co., have applied to the city for permission to charge an 8c fare until June 30. It was stated that unless an increased fare is granted the companies may be compelled to suspend all traffic.

Charles Kennedy and Lewis Kennedy, father and son, were each fined $20 at at the St. John, N.B., police court, recently, for assaulting a New Brunswick Power Co.'s conductor, while in charge of a car, Dec. 26. The accused persisted in taking a dog into the car with them in contravention of the rules.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry. and allied companies:—**

| | Oct.,1919 | Oct.,1918 | 4 mons. to Oct. 31, 1919 | 4 mons. to Oct. 31, 1918 |
|---|---|---|---|---|
| Gross | $710,405 | $580,354 | $2,704,611 | $2,114,137 |
| Expenses | 526,990 | 456,028 | 2,023,468 | 1,751,662 |
| Net | 183,415 | 124,326 | 681,143 | 362,475 |

**—Cape Breton Electric Co. —**

| | Nov.,1919 | Nov.,1918 | 12 mons. to Nov. 30, 1919 | 12 mons. to Nov. 30, 1918 |
|---|---|---|---|---|
| Gross | $51,610.95 | $49,235.47 | $579,869.40 | $547,951.52 |
| Expenses | 40,349.20 | 37,074.51 | 451,788.41 | 382,583.70 |
| Net | 11,261.75 | 12,160.96 | 128,080.99 | 125,367.82 |

**Edmonton Radial Ry.**—A report by the city controllers of Edmonton, Alta., on the operation of the civic public utilities to Nov. 30, 1919, contains the following: "The gross earnings for the months were $1,912,322.88, while operation and maintenance cost $1,073,140.27, showing a net surplus on operation of $839,182.61, as against $694,966.06 for the same period of the previous year, and after meeting capital and depreciation charges there is a net surplus on all the utilities (inclusive of the deficit on the street railway) for the 11 months of $137,-919.07 compared with $2,528.76 for the corresponding period of 1918. The street railway for November showed a net surplus (inclusive of capital and depreciation charges), of $1,526.39, against a net deficit for Nov., 1918 of $25,546.05. The net deficit on the street railway for the 11 months to Nov. 30, 1919 was $53,-283.94."

**Guelph Radial Ry.**—A press report states that the receipts for 1919 show an increase of $16,000 over those for 1918. We were officially advised Jan. 20 that the accounts were being audited, and that figures were not available.

**London and Port Stanley Ry. Co.**—The directors for this year are: President, E. S. Little, mayor; Vice President, Alderman G. B. Drake; other directors, Aldermen Watkinson, Ashton, Wheatcroft, Cunningham, Brighton and W. A. Wilson. The mayor of London, Ont., explained, Jan. 17, that it is necessary to hold an annual meeting to keep the company formally in existence, as the capital stock the Grand Trunk Ry. holds 210 shares, and other persons hold 47 shares. The remaining 8,637 shares are owned by the City of London. The company had paid out of the $183,564.31 received from the London Railway Commission, $183,494.51 for interest, sinking fund, etc., and the balance of $68.80 for current expenses.

**The Montreal Tramways Co.** has declared a dividend at the rate of $2.50 a share of its capital stock for the quarter ended Dec. 29, 1919. It is reported that the meeting of directors, Jan. 15, at which the dividend was declare, the President presented figures to show that owing to the recent advance granted in fares with a corresponding increase in passenger traffic, the company had been placed in a position to resume the payment of dividends on the common stock, payment of which had been suspended since the spring of 1918.

**Nova Scotia Tramways & Power Co.**—A Halifax, N.S., press report states that no dividends will be paid in the preferred stock for the 6 months ended Dec. 31, 1919. There are outstanding $2,200,000 of preferred shares, bearing interest at 6% per annum and payable half yearly, the interest being one year in arrears, approximately $122,000. Considerable sums have been expended on renewal of track and other improvements, for which a short term loan of $1,000,000 was made during 1919, and half of which has been spent. This improvement works will be continued during this year.

**Toronto Civic Railway—**

| Receipts | Dec.,1919 | Dec.,1918 | 1919 | 1918 |
|---|---|---|---|---|
| | $44,140.79 | $32,075.48 | $441,955.09 | $331.413.24 |
| Passengers | 2,603,065 | 1,922,409 | 26,190,336 | 19,755,072 |

**Toronto Ry., Toronto and York Radial Ry. and allied companies—**

| | Oct.,1919 | Oct.,1918 | 10 mons. to Oct. 31, 1919 | 10 mons. to Oct. 31, 1918 |
|---|---|---|---|---|
| Gross | $1,123,801 | $1,048,478 | $10,442,259 | $10,645,075 |
| Expenses | 729,430 | 557,908 | 6,515,661 | 5,759,861 |
| Net | 394,371 | 490,570 | 3,926,598 | 4,885,214 |

**Toronto Railway—**

| | 1918 | 1919 |
|---|---|---|
| January | $ 562,077 | $ 588,923 |
| February | 569,650 | 545,771 |
| March | 575,957 | 615,526 |
| April | 543,055 | 600,231 |
| May | 548,778 | 620,068 |
| June | 533,393 | *431,082 |
| July | 540,296 | *534,412 |
| August | 555,709 | 629,540 |
| September | 571,637 | 641,422 |
| October | 475,545 | 650,914 |
| November | 517,226 | 638,871 |
| December | 594,847 | 678,407 |
| Totals | $6,588,800 | $7,175,167 |

*Strikes in progress.

The city's percentage for 1919 was $1,251,310.

**Winnipeg Electric Ry. and allied companies—**

| | Oct.,1919 | Oct.,1918 | 10 mons. to Oct. 31, 1919 | 10 mons. to Oct. 31, 1918 |
|---|---|---|---|---|
| Gross | $428,339 | $295,005 | $3,375,339 | $2,969,142 |
| Expenses | 321,795 | 261,441 | 2,667.983 | 2,289,891 |
| Net | 106,544 | 33,564 | 707,416 | 679,251 |

The surplus for Nov., 1919, after providing for fixed charges, was $37,623.71.

# Electric Railway Notes.

Moncton Tramways, Electricity and Gas Co., Moncton, N.B., is reported to have ordered 2 new cars, and a new sweeper, to replace the car and sweeper destroyed when the car barn was burned Dec. 26.

Calgary, Alta., City Council is receiving applications for the position of Traffic Manager of the Calgary Municipal Ry., a new position which the city commissioners recommended should be created.

The Moose Jaw, Sask., Electric Ry., is reported to have put in operation on Jan. 12, a regular 6 minute car service on the belt line in place of the irregular service in operation for some time previously.

The Toronto Civic Works Department called for tenders during January for 2 single truck cars for the Toronto Civic Ry.'s Bloor St. route. It is expected that the order will be placed about the end of February.

Calgary, Alta., City Council is reported to have ratified an agreement with the Dominion Government for carrying letter carriers on the Calgary Municipal Ry. at $40 each per year instead of $35 as heretofore.

The Cape Breton Electric Co. has issued an illustrated calendar for 1920. The top half of the sheet for each month contains a colored cartoon of a humorous character illustrating a phase of the safety first movement.

Winnipeg Electric Ry. employes decided, Jan. 8, by a vote of 550 to 300, to withdraw from the International Street Railway Men's Union and to form an independent union. The company employs about 1,100 men.

By order of the Montreal Tramways Commission, the public were given the privilege of using the Montreal Tramways Co.'s cars at the ordinary day rates from midnight to 5 a.m. on Christmas and New Year's mornings. The regular night fare between these hours is 15c cash.

The Toronto Board of Control, on Jan. 21, made an order for the return of reports made in 1918 in connection with the proposed building of a civic car factory in Toronto, so that it may again consider the question of the building of cars by the city for the operation of the civic railway.

The Toronto Police Commissioners are paying the Toronto Ry. $100 a year each for badges to be used by plainclothes men and detectives, when riding on the company's cars. It was announced early in January that 160 of these were in use, but that the number will probably be considerably curtailed.

The Detroit United Railway adopted the queue system recently at Detroit, Mich., for handling crowds during the rush hours. Both the front and rear doors of the car are utilized, and two lines of intending passengers are formed, one for each door. Extra conductors are placed at each end to facilitate collection of fares.

The case of the City of Winnipeg Electric Ry., respecting the validity of the order, made by the Public Utilities Commissioner for Manitoba, increasing car fares, was set down for hearing at the sittings of the Manitoba Court of King's Bench, which opened Jan. 26. The city questions the validity of the Public Utilities Act.

The Toronto Board of Control, after considering the Imperial Privy Council's judgment on the Toronto Railway's appeal against the penalty of $1,000 a day for noncompliance with an order of the Ontario Railway and Municipal Board to provide additional cars, decided that an application be made to the board forthwith for the enforcement of the original order.

The Quebec Ry., Light and Power Co. is reported to have announced, Dec. 24, that all tickets purchased at the rates in force prior to the recent increase in rates, would be accepted for transportation on the cars at face value. It was originally stated that these tickets would only be accepted on the cars for one month after the new rates went into force on Nov. 20, 1919.

The Toronto Board of Control, on Jan. 21, voted $200,000 for the purchase of motor cars for operation on the civic railway, chiefly, to relieve congestion on Danforth and St. Clair lines. The Works Commissioner was instructed to buy cars, making the best possible arrangement, preference to be given to Canadian car building companies, but not to close any deal without further instructions from the board.

The Fort William Municipal Ry. has bought 14 cars from the Cleveland St. Ry., Cleveland, Ohio, to replace those destroyed by fire in Dec., 1919. They are somewhat shorter than those being operated at present in Fort William. Two arrived at Fort William towards the end of January, and were immediately overhauler and put in service. The price paid for the cars delivered at Fort William is approximately $4,800 each.

At the British Columbia Electric Ry., Vancouver Island employes' annual dinner at Victoria, rceently, A. T. Goward, Local Manager presiding, it was stated that 1/11 of the company's employes in the Island Division, who enlisted for overseas service, 11 were killed and 14 wounded in action. Of the company's employes in the whole province, 564 enlisted, and of these 40 were killed in action, 41 wounded, and 81 died. Of the remainder, 318 had returned.

Edmonton, Alta., Radial Ry. employes are reported to have requested the city commissioners to discontinue the operation of one-man cars, and to put two men in charge of all cars. The men contend that it is too much to expect one man to punch transfers, collect transfers, give change, sell tickets, attend to fare box and run a car on schedule time, that it is taking altogether too great a risk, is unreasonable, and that the service would be greatly improved by its alteration. It is stated that during certain periods of the a second man is placed on the one man cars to enable the work to be done.

The Board of Railway Commissioners, sitting at Kitchener, Ont., Jan. 12, had under consideration the Grand Trunk Ry.'s appeal for an order to direct the Kitchener Light Commission, operating the Kitchener and Waterloo St. Ry. to pay 50% of the cost of the watchmen at the King St. crossing at Kitchener. It is stated that the Kitchener commission at present only pays 2c a day towards the watchmen's wages, which amounts to $9,75, and the G.T.R. claims that a fourth man will have to be employed. Commissioner Goodeve, who heard the application, recommended the parties to come to an agreement and report.

# The Canadian Electric Railway Association Expresses its Appreciation of Its Honorary Secretary-Treasurer.

On the eve of leaving Toronto for a short New Year's holiday, Acton Burrows, who resigned the Honorary Secretary-Treasurership of the Canadian Electric Railway Association recently, after having been unanimously re-elected for 12 years, and who has been elected an honorary member of the association and its Honorary Vice President, was entertained at luncheon at the Albany Club, Toronto, by a number of officials of electric railways which are members of the association, the arrangements having been made by a committee, consisting of A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Ry.; and C. L. Wilson, Assistant Manager, Toronto & York Radial Ry

After the King's health had been drunk, the association's President A. Gaboury, Superintendent, Montreal Tramways Co., who occupied the chair, said: "—I need not explain the purpose of this luncheon, unfortunately we all know it too well, but I certainly cannot let the occasion go by without saying a few words of the great loss the association has sustained in the resignation of its Honorary Secretary-Treasurer, Acton Burrows, who has acted for so many years in that capacity, who has rendered such valuable services to the association, who has, as a matter of fact, sacrificed a great part of his time and energy, possibly to the detriment of his own personal affairs, for the purpose of helping along the Canadian Electric Railway Association, and making it a success. It is safe to say that it is the unanimous opinion of every member, from coast to coast, that much of its success has been due to the energy, experience and courage displayed at all time by our good friend Acton Burrows.

"Mr. Burrows, we have had the pleasure of knowing you for a great many years, and in those years you have made us feel that we could call upon you for all the help and assistance that lay in your power. You have always replied to any request for information, cheerfully and conscientiously, and I can assure you that we have appreciated and do still appreciate the courtesy and kindness you have always shown, both in your capacity of Honorary Secretary-Treasurer of the association, and as a personal friend. As a mark of our esteem we herewith tender you a small token of the very deep affection and love that all the members of the association feel for you. Do not accept the tokens at their price value, they are not intended as such, but accept them as a reminder of deep attachment and friendship that will last forever."

The presentation consisted of a large Sheffield plate tray, silver on copper, with mounts, silver milled and hand engraved, and a Sheffield plate coaster, both of the period from 1800 to 1820, and several pieces of cut glass. The tray bore an engraved inscription "Presented to Acton Burrows by Canadian Electric Railway Association, Dec., 1919." Mr. Burrows expressed briefly his deep appreciation of the presentation, and of the too flattering manner in which Mr. Gaboury had spoken of his services, and assured the donors that although he felt compelled, owing to his business and personal affairs requiring his whole attention, to resign the honorary secretary-treasurership, he would always be at the association's disposal, and he hoped to continue to meet the members on many future occasions and to be in frequent correspondence with them from the Canadian Railway and Marine World's office.

The following, among those present, also spoke, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry., and Honorary Secretary-Treasurer pro tem of the association; E. P. Coleman, General Manager, Dominion Power & Transmission Co.; E. W. Oliver, General Superintendent, Niagara, St. Catharines & Toronto Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.; F. D. Burpee, Superintendent, Ottawa Electric Ry.; W. J. Radford, Assistant Manager, Toronto Suburban Ry.; Jas. Anderson, Vice President, Sandwich, Windsor & Amherstburg Ry.; J. F. Deadey, Superintendent, Mimico Division, Toronto & York Radial Ry.

A. Eastman, acting Honorary Secretary-Treasurer, pro tem, read a number of telegrams and letters, received from officials of companies which are members of the association, from which the following are extracts:

E. P. Coleman, General Manager, Dominion Power & Transmission Co., Hamilton, Ont.: "We greatly regret to note that our Honorary Secretary-Treasurer, Acton Burrows, has felt constrained to tender his resignation to the association. we consider this a very serious matter, as there is no doubt that the success of the association in the past has been mainly due to the efficient and unselfish ministration of our honored and Honorary Secretary-Treasurer and his wise direction of its affairs."

C. C. Curtis, Manager, Cape Breton Electric Co., Sydney, N.S.: "Please convey to Acton Burrows, the grand young man of the C.E.R.A., my regret at being unable to be with you today, also my best wishes for a happy and most successful New Year."

E. J. Dickson, Vice President, International Ry., Buffalo, N.Y.: "Regret impossible to attend luncheon. Kindly convey our very best wishes to Mr. Burrows for all manner of success in the future."

G. Gordon Gale, Vice President, Hull Electric Co.: "I regret that I shall not be able to be in Toronto for the luncheon. I should very much like to join with you all in the presentation which will take place at that time."

Lt.-Col. J. E. Hutcheon, General Manager, Montreal Tramways Co., Montreal: "I am pleased to note that a presentation is to be made to Mr. Burrows. I would like very much to be present, but I fear that my attention will be required here during the entire week, on matters of very great importance to the company. If it is at all possible to get away, I assure you I will be present Mr. Burrows has been of very great value to the association, in the many years he has occupied office, and we cannot do too much on his retirement to show our appreciation."

C. B. King, Manager, London Street Ry., London, Ont.: "We are very sorry that Mr. Burrows finds its necessary to discontinue serving as Honorary Secretary-Treasurer. Personally I feel the association may be quite unable to secure a substitute."

M. W. Kirkwood, General Manager, Grand River Ry. and Lake Erie & Northern Ry., Galt, Ont.: "It would really be a pleasure to attend the luncheon, but owing to perss of business, it is not possible for me to do so."

A. W. McLimont, Vice President and General Manager, Winnipeg Electric Ry., Winnipeg, Man.: "Unfortunately it will be impossible for any of this company's officials to be represented at the luncheon to be tendered Acton Burrows. I personally regret very much not being able to attend, as there is nothing that the members of the C.E.R.A. can do that would be more than Mr. Burrows' untiring efforts for the association's interests have entitled him to."

C. U. Peeling, Manager, Cornwall Street Ry., Light & Power Co., Cornwall, Ont.: "While our company cannot be represented at the luncheon we heartily concur in the association's action, and regret that we have been unable to show our appreciation of Acton Burrows' services at an earlier date.

W. B. Powell, General Manager, Montreal & Southern Counties Ry., Montreal, Que.: "I regret very much that owing

to our being very short handed at present, we will be unable to send a representative."

R. M. Reade, Superintendent, Quebec Ry., Light & Power Co., Quebec, Que.: "My best thoughts and wishes go out to all of you at this time, and I regret exceedingly my inability to be present, owing to this time of year being the busiest part of our winter season. We hate to lose Acton Burrows, even after 13 years, because he has always been a genuine inspiration to all of us, active and always in action, the man who has done things for the association, and Dec. 29, 1919, will stand out as evidence of his sterling character and worth, showing the great esteem, and I may say affection, we all have for him. Here's to his very good health and happiness and I hope that as Honorary Vice President of the Association he will give us the benefit of his mature experience in things 'electro-politico.' I feel we can count on his hearty co-operation, not only now in the re-organization, but in the years to come."

H. E. Weyman, Manager, Levis County Ry., Levis, Que.: "Sorry cannot attend Please accept my esteemed appreciation."

W. S. Hart, Secretary - Treasurer, Three Rivers Traction Co., Montreal, wrote Mr. Burrows personally: "I regret to note from circular issued by Mr. Eastman that you have resigned as Honorary Secretary-Treasurer of the Canadian Electric Railway Association. I am hardly surprised at that action as certainly it must have been a great sacrifice to you to give up so much time as you have to the affairs of the association. The high standing of our association is such that I feel we should testify our gratitude for the work that you have done. I have not been a very important factor in the association, but all of my relations to it have been of a most satisfactory nature."

## Calgary Municipal Railway Operating Results.

City Comptroller Wood in a report upon the operations of Calgary, Alta., public utilities for the 11 months ended Nov. 30, 1919, is reported to have said: "In the street railway department, there was a deficit at the beginning of the year which totaller $7,118.24. Increased traffic, especially during the autumn and early winter, however, quickly brought a surplus to this department, and at the end of November, the total actual revenue of the lines was $736,559.05, as against total expenditures of $713,182.64 leaving a surplus of $23,376.41. The milder weather of December, it is expected, will cut down the revenue somewhat as compared to November, but the figures indicate that the lines will finish the year with a surplus of approximately $25,000. The unfortunate accident of Dec. 20, will have no effect on the profits of the line, for the reason that such accidents are paid for out of a special reserve fund created by taking 2% of the gross profits each year and setting them aside for this purpose. At the beginning of 1919, there was $18,367 and the 2% of the gross this year will add another $15,000 about. However, a number of other minor accident cases had to be paid for out of the money on hand at the beginning of the year so that the recent accident will just about clean out the reserve fund."

A press report of Jan. 6, stated that the results of the year's operation would be about as follows:—

| | | |
|---|---|---|
| Car earnings | $772,881.05 | |
| Miscellaneous | 15,045.15 | |
| Bowness Park | 27,976.25 | $215,092.46 |

The cost of operation is not given, but it is stated that the surplus is expected to be from $25,000 to $30,000.

In connection with these figures, T. H. McCauley, Superintendent, is reported to have given the following additional information:—"The total hours of operation for the year ended Dec. 31, were 304,596. On this basis, with 2 men on a car at 60c an hour, or $1.20 an hour, the cost would have been $365,515.20. With one man on a car, at 65c an hour, the cost was $197,987.40, a saving of $167,527.80. To this must be added saving in double time for holidays of $8,223.60; saving on uniforms of $5,550; winter trousers, $1,612.50; saving on caps, $487; a total saving of $185,613.10.

## Suits Against Montreal Tramways Co.

The Quebec Superior Court, sitting at Montreal, Jan. 14, awarded $465.50 damages and costs in favor of George Gautier, against the Montreal Tramways Co. In Nov., 1917, the plaintiff was a passenger on one of the company's cars and after he had got off and was waiting for it to move on, the conductor, it was alleged, deliberately kicked him in the eye, causing a severe wound. There evidently had been some wrangling between the plaintiff and the conductor before the former got on the car, and the conductor admitted that in endeavoring to close the door of the car he touched the plaintiff, but without intending in anyway to cause him injury.

The Quebec Superior Court, sitting at Montreal, Jan. 12, gave a verdict in favor of the Montreal Tramways Co. in an action brought against it by Mrs. McConnell, who claimed $2,000 damages for the death of her husband, caused by W. T. Mattice, an Italian. The evidence showed that McConnell was a passenger on one of the company's cars, May 17, 1917, on which the conductor had an altercation with an Italian. The Italian was ejected, but ran after the car, boarded it, and drew a knife. The conductor retreated to the interior of the car and closed the door. The Italian being in a rage turned on the passengers on the platform, inflicting such injuries on McConnell that he died June 8, 1917. The plaintiff alleged that the conductor did nothing to protect the lives and safety of the passengers on the platform. The court held that the death of the passenger was due to the criminal act of the Italian, and that the plaintiff had failed to prove the essential allegation of her claim, viz., the responsibility of the Montreal Tramways Co.

The Nova Scotia Tramways and Power Co.'s 24 safety cars, which are being built by the American Car Co. for the Halifax tramways service, as mentioned in a previous issue, are of the following general dimensions,—length over bumpers, 28 ft., ½ in.; length over dashers, 26 ft. 9½ in; length of body, 17 ft. 9½ in.; width overall, 8 ft.; width over side plates, 7 ft. 8 in.; width inside, 7 ft. 2 in.; height from rail to roof, 9 ft. 10⅝ in.; height from rail to floor, 2 ft. 4 15-16 in.; wheel base, 8 ft. The cars have seating capacity of 32 persons each, and arrangement is made for fitting a hinged seat against each vestibule, which is folded up when the door adjacent thereto is in use. The weight of each car is approximately 7½ tons, and owing to the installation of special safety devices, it is claimed that they can be operated on shorter headway The safety devices applied to the cars are interlocked with a controller and brake handle, and it is necessary for the motorman to hold the control handle down to keep the car in motion, the releasing of the handle through any cause automatically cutting off the power, applying the brakes and releasing the pneumatically operated doors. Approximately 75% of the weight of the car body and passenger load is supported on swing links, suspended by the ends of quarter elliptic springs on the four corners of the truck.

Winnipeg Car Routing—The Winnipeg Electric Ry. some time ago arranged a rerouting on a number of its car lines; Elmwood residents protested against the rerouting insofar as it had effected a reduction on the three lines serving the Elmwood and East Kildonan districts. The Public Utilities Commissioner heard the case Dec. 23, 1919, and gave his decision Jan. 15, stating that the effort to make a through route over the whole district, including Sutherland Ave., and Talbot Ave. West, will never be satisfactory, and he therefore disapproved of it. He approved the looping of the Elmwood line at Donald and Ethel Sts. The consideration of the route to be taken by the Morse place cars, whether the old route will be restored, or a new one arranged was held over for further consideration.

# MARINE DEPARTMENT.

## Facilities for Aiding Early and Late Navigation on St. Lawrence River.

Early in January the Quebec Board of Trade wrote the Minister of Marine urging that facilities be provided to assist early and late navigation on the St. Lawrence River. Mr. Ballantyne replied in part as follows:—"The casualty that befell the s.s. Canadian Recruit is very much to be regretted indeed. The very severe ice conditions that resulted in the loss of this ship came about at a much earlier period than was anticipated here with regard to the experience of previous years. So far as the s.s. Canadian Spinner is concerned, while the situation is extremely serious, it is hoped it may be possible to rescue her from the other end.

"I have realized for some time that the facilities available for assisting vessels to navigate the St. Lawrence River after severe weather sets in are quite inadequate. For reasons that I am sure will commend themselves generally, the Marine Department consented to the transfer to the Russian Government of the ships that would be really effective in combatting the ice conditions in the St. Lawrence. My present intention is to take such steps as may be necessary to provide equipment that will be reasonably adequate to assist any ships that may find it necessary to navigate the St. Lawrence after the ice conditions became severe. The representations submitted as to the extent to which facilities should be provided will be borne in mind by me in the course of the further consideration that the question will receive."

# Marine Department

## Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

**Orders for Cargo Steamships**—Canadian Railway and Marine World for January gave particulars of orders placed by the Marine Department for 56 steel cargo steamships for operation by Canadian Government Merchant Marine Ltd., and also referred to further orders which were being negotiated for on Jan. 12, we were officially advised that the following additional orders had been decided on:

Collingwood Shipbuilding Co., two ships, approximately 3,890 d.w. tons each, one will be built at Collingwood, Ont., and one at Kingston, Ont.

Nova Scotia Steel and Coal Co., New Glasgow, N.S., one ship, approximately 2,800 d.w. tons.

| | |
|---|---|
| Total value, 45 ships | $54,234,635 |
| Average cost per ton | $199.63 |

**Summary 2.**

| | |
|---|---|
| No. of contracts agreed upon since signing of armistice, Nov. 11, 1918 | 15 |
| Total d.w. tonnage | 88,280 |
| Total value, 15 ships | $15,287,625 |
| Average cost per ton | $173.17 |

**Summary 3.**

| | |
|---|---|
| Total no. of contracts agreed upon to Jan. 12 | 60 |
| Total d.w. tonnage | 359,945 |
| Total value, 60 ships | $69,522,260 |
| Average cost per ton | $193.14 |

**Summary 4.**

| | |
|---|---|
| No. of ships completed to Jan. 12 | 23 |
| Total d.w. tonnage | 121,275 |

**Summary 5.**

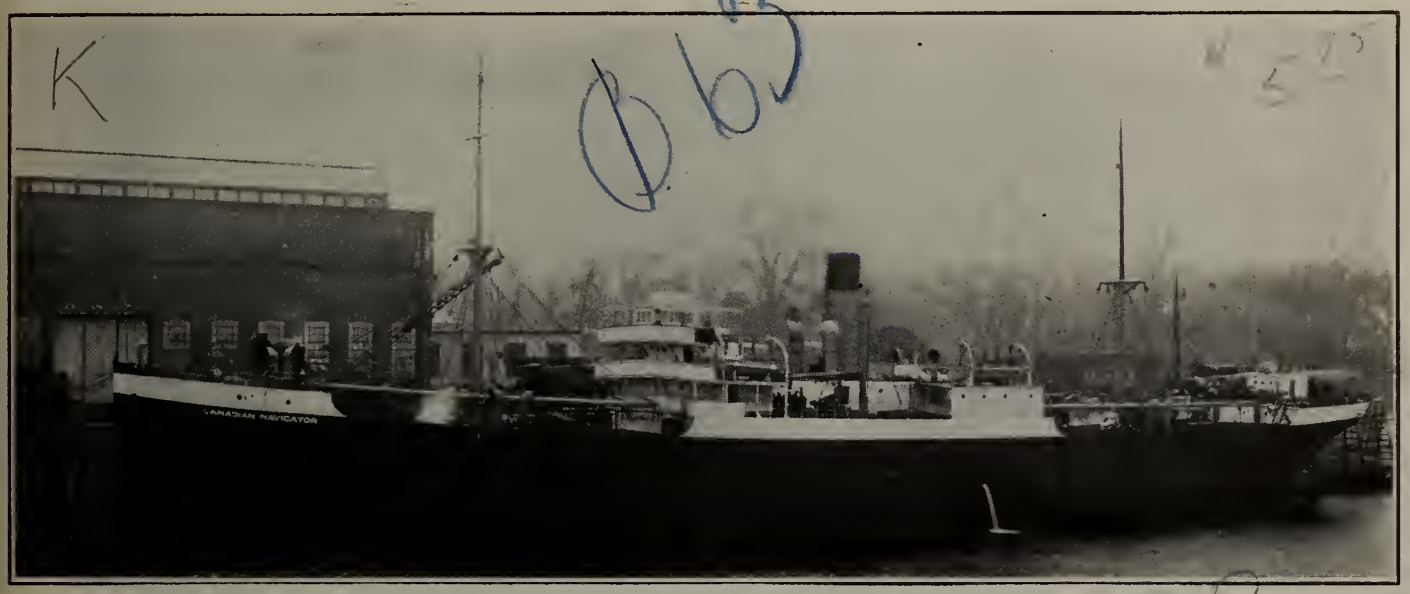
| | |
|---|---|
| No. of ships turned over to Canadian Government Merchant Marine Ltd., to Jan. 12, and in service | 19 |
| Total d.w. tonnage | 99,885 |

12; approximately 8,100 d.w. tons; J. Coughlan & Sons, Vancouver, B.C.; Dec. 27, 1919.

S.s. Canadian Inventor; Marine Department contract 36; builders' yard no. 13; approximately 8,390 d.w. tons; J. Coughlan and Sons, Vancouver, B.C., Jan. 24, 1920.

**Deliveries of Steamships**—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following were delivered to the Marine Department by the builders on the dates mentioned.

Dec. 20, 1919; s.s. Canadian Sealer; Marine Department contract 40; builders' yard no. 5; approximately 2,800 d.w.



Steel cargo steamship, Canadian Navigator; approximately 4,300 d.w. tons; built for Canadian Government Merchant Marine Ltd., by Canadian Vickers Ltd., Montreal.

Davie Shipbuilding and Repairing Co., Lauzon, Que., one ship, approximately 8,390 d.w. tons.

Fuller particulars of these ships are given in the table on pg. 90 of this issue.

In connection with the shipbuilders' deputation which waited on the Dominion Government on Jan. 7, it is said that the orders for steel cargo steamships will be increased from the 60 already placed to 70, and negotiations are under way in this connection.

J. J. Coughlan, of J. Coughlan and Sons, Vancouver, on returning there recently from Ottawa, where he spent some time, is reported to have said that he had arranged for orders for two ships of approximately 8,100 d.w. tons each. The Port Arthur Shipbuilding Co. was reported on Jan. 10 to have received an order for one ship of approximately 3,940 d.w. tons, in connection with which we were officially advised Jan. 26, that negotiations were proceeding, but that details had not been agreed on.

**Statistics re Orders, Deliveries, Etc.**—The following information has been furnished by the Marine Department as of Jan. 12:—

**Summary 1.**

| | |
|---|---|
| No. of contracts agreed upon before date of armistice, Nov. 11, 1918 | 45 |
| Total d.w. tonnage | 271,665 |

**Passenger Ships to Be Ordered**—As fully reported on pg. 96 of this issue the Minister of Marine in speaking at the Dominion Marine Association's dinner in Montreal, Jan. 9, stated that the government has under consideration the building of combined passenger and freight ocean steamships of about 15,000 gross tons, and a speed of 18 knots, to be operated by Canadian Government Merchant Marine and that they will be built in Canada. The Marine Department's Naval Constructor, C. Duguid, is now in Great Britain on official business and while there will probably look into the most up to date practice for this class of ships.

**Keels Laid**—Since our last issue we have been advised of the laying of the following keel:—

S.s. Canadian Victor; Marine Department contract 50; builders' yard no. 77; approximately 8,350 d.w. tons; Canadian Vickers Ltd., Dec. 10, 1919.

**Launchings of Steamships** — Since Canadian Railway and Marine World for January was issued, we have been advised of the following launchings:

S.s. Canadian Exporter; Marine Department contract 35; builder's yard no.

tons; Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Dec. 27, 1919; s.s. Canadian Rancher; Marine Department contract 14; builders' yard no. 6; approximately 5,100 d.w. tons; Tidewater Shipbuilders Ltd., Three Rivers, Que.; delivered to Marine Department, Dec. 27, 1919.

Dec. 27, 1919; s.s. Canadian Planter; Marine Department contract 28; builders' yard no. 72; approximately 8,100 d.w. tons; Canadian Vickers Ltd., Montreal.

Jan. 17, 1920; s.s. Canadian Raider; Marine Department contract 7; builders' yard no 102; approximately 5,100 d.w. tons; Wallace Shipyards Ltd., North Vancouver, B.C. She was transferred to Canadian Government Merchant Marine Ltd., and is taking a cargo of lumber to Australia.

As stated above, 23 of the 60 ships ordered had been completed up to Jan. 12, and of these 19 had been transferred to Canadian Government Merchant Marine Ltd., for operation.

**Officers of Steamships**—The following officers have been appointed by Canadian Government Merchant Marine Ltd. The first column contains the names of the ships, the second those of the cap-

tains and the third those of the chief engineers:

| | | |
|---|---|---|
| Canadian Aviator | H. S. Hilton | J. F. Brown |
| Canadian Raider | R. Winter | ..... |

Deadweights of Steamships—Canadian Railway and Marine World for Sept., 1919, contained a table showing the approximate d.w. tons provided for in contracts for 8 of the steel cargo steamships ordered by the Marine Department for Canadian Government Merchant Marine Ltd., and the final determined weights at which the builders were paid at the price per long ton, stated in the contract. The following particulars have been received as to 3 other steamships:—

| | Approximate | Determined |
|---|---|---|
| Canadian Adventurer ..... | 3,400 | 3,408 |
| Canadian Miller ..... | 8,100 | 8,390 |
| Canadian Sower ..... | 3,400 | 3,405¾ |

Steamship Services—Canadian Railway and Marine World for January mentioned that the Vancouver Board of Trade was reported to have received word that, as soon as possible, Canadian Government Merchant Marine Ltd., would establish a steamship service between Montreal, Halifax and British Columbia ports, via the Panama Canal. We are advised that this matter has been brought to the Canadian Government Merchant Marine managements' attention on several occasions, and that the inauguration of such a service has been urged, but the management has not been able to satisfy itself that it could be made to pay, and nothing definite has therefore been done in connection with the matter.

In reference to the petition sent by the Canadian Merchant Service Guild to the Minister of Marine, asking that a government passenger steamship service be established between Vancouver, Victoria and San Francisco, we are advised that the same has been referred to the Canadian Government Merchant Marine management in connection with the matter.

D. O. Wood, Traffic Manager, Canadian Government Merchant Marine Ltd., has issued a circular to Canadian importers and exporters as follows: "Press dispatches declare that trade returns show British trade is once more solvent. It is stated that British shipping freights are again bringing in the enormous revenue of over $5,000,000 daily. The Canadian Industrial Reconstruction Association has prepared a statement upon the question of exchange and amongst ten recommendations to bring about its rereturn to stability, from which the following is selected: "Utilize Canadian service. Shipments should be made over Canadian carriers and in case of overseas exports through 'Canadian ports in Canadian ships.' That this recommendation is sound, must be quite obvious. Why not assist in the building up of Canada's treasury by patronizing Canadian owned vessels? The Dominion Government is, at the public expense, establishing a merchant marine, known as Canadian Government Merchant Marine Ltd., operated by the Canadian National Rys. Board. There are in service at this date, 26 ships in the following trade routes, viz., 11 to the United Kingdom; 10 to the British West Indies and Cuba; 3 to Brazil and South America; 2 to Australia and New Zealand, with 34 vessels to follow within 12 months. The attention of the principals of all exporting and importing firms is particularly drawn to these facts, and their co-operation is earnestly desired."

Steel cargo steamship, Canadian Gunner; approximately 3,750 d.w. tons; for Canadian Government Merchant Marine Ltd.; built by Collingwood Shipbuilding Co., Collingwood, Ont.

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The s.s. Canadian Sealer, which was delivered to the Marine Department by the Nova Scotia Steel and Coal Co., Dec. 20, 1919, and which was sent subsequently with supplies for the Magdalen Islands, was reported to have been caught in the ice at Souris, P.E.I., Jan. 19. The D. G. S. Montcalm was sent to break the channel through to the Canadian Sealer and take the Magdalen Island supplies from that steamship to the Magdalen Islands, about 75 miles from Souris. The transfer of the supplies was accomplished and the Montcalm left Souris, Jan. 24, but by noon, Jan. 27, she had made barely 25 miles and was practically ice bound. It was later reported that she was drifting away from the Island with the current, and that she had been ordered to abandon the trip temporarily and try to make for Halifax, N.S.

The s.s. Canadian Spinner, which, as reported in our last issue, was icebound in the St. Lawrence River, near Matane, while on her voyage from Quebec to Halifax, N.S., was released subsequently from the ice, with the aid of the Dominion Government s.s. Montcalm, and arrived at Sydney, N.S., Jan. 13. She sailed from Quebec at 7 a.m., Dec. 16, with part of a general cargo for Rio de Janeiro, Santos and Buenos Aires, which was to be completed at Halifax and very soon experienced trouble with ice. She passed Crane Island Dec. 16, at 2 p.m., was off Murray Bay Dec. 17, at 9 a.m. and passed Red Island Dec. 18 at 10 a.m. Shortly afterwards she was reported as unmanageable through ice, and to be drifting with the current, with her rudder post broken. She passed Metis Dec. 23, and made some little headway, owing to a momentary slackening of the ice, which, however, closed in again about Dec. 27. Pointe des Monts was passed Dec. 29, and on Dec. 30 she was off Cap Chats, being reported as about 15 miles from shore, with the wind and current gradually driving her farther out, and towards Cap Magdalen. The master reported by wireless that the ship was in no immediate danger, and that everything was well on board. On Jan. 2, she was reported about 5 miles off shore, and 3 miles west of Cap Magdalen. On Jan. 3 at 9 a.m., it was announced that she was nearly clear of the surrounding ice and about a mile east of Fame Point. During the drift, temporary repairs were made to the broken rudder post. The Dominion Government icebreaking s.s. Montcalm was ordered up the Gulf from Sydney, N.S., to aid the Canadian Spinner, and on Jan. 5 sighted her about 20 miles east of Fame Point, where she had again become icebound. At this time the Montcalm was about 50 miles east of Fame Point. A way was gradually made through heavy ice, the Canadian Spinner being off Southwest Point on Jan. 6, the ships meeting on Jan. 7. The Montcalm led the way out of the ice, and both ships were reported to be at 48 n. 60 w. at noon Jan. 12, arriving at Sydney, N.S.,

at 3 p.m., Jan. 13, and at Halifax, Jan. 15 at noon.

**Sailings of Steamships**—The following sailings (dates on or about) are scheduled subject to change without notice. The number in front of the ship's name in each case is that of the voyage.

**Liverpool Service, from Halifax, N.S.**
4, Canadian Seigneur ..... Feb. 23
4, Canadian Miller ..... Mar. 17

**Liverpool Service, from St. John, N.B.**
6, Canadian Voyageur ..... Feb. 10
5, Canadian Ranger ..... Feb. 29

**London Service, from St. John, N.B.**
3, Canadian Trooper ..... Feb. 28

**Glasgow Service, from Halifax, N.S.**
2, Canadian Aviator ..... Feb. 17
2, Canadian Settler ..... Mar. 4

**Australian and New Zealand Service, calling at Sydney and Melbourne, Australia, and Auckland and Wellington, N.Z., from Vancouver, B.C.**
1, Canadian Exporter ..... Feb. 15

**Havana, Cuba, Service, from Halifax, N.S.**
5, Canadian Trader ..... Feb. 5
5, Canadian Sailor ..... Feb. 15

**Havana, Cuba, Service, from St. John, N.B.**
4, Canadian Adventurer ..... Feb. 4
3, Canadian Sower ..... Feb. 10

**Kingston, Jamaica, Service, from St. John, N.B.**
1, Thos. J. Drummond ..... Feb. 25
6, Canadian Warrior ..... Mar. 7

**Barbados, Trinidad and Demerara Service, from Halifax, N.S.**
4, Canadian Signaller ..... Feb. 19
3, Canadian Gunner ..... Mar. 5

**British American Shipbuilding Co.**, Welland, which has contracts from the Marine Department for 2 steel cargo steamships of approximately 4,350 d.w. tons each, expects to launch the first one, builder's yard no. 4; Canadian Otter; towards the end of February.

**Canadian Vickers, Ltd.**, Montreal, laid the keel of s.s. Canadian Victor; Marine Department contract 50; builder's yard no. 77; approximately 8,350 d.w. tons, Dec. 10, 1919, and advised Jan. 6 that the keel of s.s. Canadian Conqueror; Marine Department contract 51; builder's yard no. 78; approximately 8,350 d.w. tons, would be laid "in the near future" thereafter.

This company delivered s.s. Canadian Planter; Marine Department contract 28; builder's yard no. 72; approximately 8,100 d.w. tons, to the Marine Department, Dec. 27, 1919.

**Collingwood Shipbuilding Co.** has received additional orders from the Marine Department for 2 more steel cargo steamships of approximately 3,890 d.w. tons each, one to be built in its Collingwood, Ont., yard and one in its Kingston, Ont., yard at $182.50 per long d.w. ton.

**J. Coughlan & Sons**, of Vancouver, B.C. launched the steel cargo steamship, Canadian Exporter; Marine Department contract 35; builder's yard no. 12; approximately 8,390 d.w. tons, Dec. 27, 1919, and the s.s. Canadian Inventor; Marine Department contract 36; builder's yard no. 13; approximately 8,390 d.w. tons, Jan. 24, 1920.

They also launched the Canadian Inventor, Marine Department contract 36; builders' yard no. 13; 8,100 d.w. tons, Jan. 24, the christening being performed by Miss Dorothy Lougheed, daughter of Senator Sir James Lougheed. This is the third steamship of this type to be launched by this company for Canadian Government Merchant Marine, the keel having been laid May 3, 1919.

**Davie Shipbuilding and Repairing Co.**, Lauson, Que., has received an additional order from the Marine Department for a steel cargo steamship, approximately 8,390 d.w. tons, at $167.50 per long d.w. ton.

**Harbour Marine Co.**, Victoria, B.C., which has contracts with the Marine Department for 2 steel cargo steamships of approximately 8,100 d.w. tons, advises that the first one, s.s. Canadian Armourer, will probably be launched about the end of February or early in March, and the second one, s.s. Canadian Composer, about a month later.

**Details of the Different Types of Steamships for Canadian Government Merchant Marine Ltd.**

The following are comparative details of the seven different types of steamships being built for Canadian Government Merchant Marine Ltd.:

| | 2,800 ton. | 3,400 ton. | 3,750 ton. | 4,300 ton. | 5,100 ton. | 8,100 ton. | 10,500 ton |
|---|---|---|---|---|---|---|---|
| Length, overall | 280 ft. | 260 ft. | 260½ ft. | 333 ft. 7 ins. | 344 ft. | 413 ft. 1 in. | 445 ft. |
| Length, bet. perpendiculars | 270 ft. | 251 ft. | 251 ft. | 320 ft. | 331 ft. | 400 ft. | 430 ft. |
| Breadth, moulded | 38 ft. | 43½ ft. | 43½ ft. | 44 ft. | 46½ ft. | 52 ft. | 56 ft. |
| Depth, moulded | 20½ ft. | 23 ft. | 26 ft. | 25 ft. | 25½ ft. | 31 ft. | 38 ft. |
| Draft, loaded | 20 ft. | 20 ft. | 22 ft. 2 ins. | 21 ft. 2 ins. | 21 ft. 8 ins. | 25 ft. 1 in. | 29 ft. |
| Type | Tri-compound | S.d., p.b. & f'c's'le | Lake, s.d., p.b. & f'c's'le | S.d., p.b. & f'c's'le | S.d., p.b. & f'c's'le | 2d., p.b. & f'c's'le | 3d., p. & f'c's'le |
| Engines—Type | 17¼ x 28¾ x 47 ins. | Triple expansion | Triple expansion | Triple expansion | Triple expansion | Triple expansion | Triple expansion |
| Cylinders, diar. | 33 ins. | 20½ x 34 x 56 ins. | 18 x 30 x 50 ins. | 25 x 41 x 67 ins. | 25 x 41 x 68 ins. | 27 x 44 x 73 ins. | 29½ x 50 x 80 ins. |
| Stroke | 875 | 40 ins. | 36 ins. | 45 ins. | 45 ins. | 48 ins. | 54 ins. |
| Ind. h.p. | Single ended | 1,300 | 1,200 | 1,800 | 2,500 | 3,000 | 4,000 |
| Boilers—Type | 17¼ ft. | S.d., p.b. & f'c's'le | Single ended | Single ended | Single ended | Single ended. | Single ended |
| No. | S.d., p.b. & f'c's'le | 2 | 2 | 2 | 3 | 3 | 4 |
| Diar. and length | 2 | 12¾ x 10¾ ft. | 14 x 10¾ ft. | 15½ x 11½ ft. | 14 x 11½ ft. | 15½ x 11½ ft. | 15½ x 11¾ ft. |
| Working pressure | 12¾ x 10¾ ft. | 190 lbs. | 180 lbs. | 180 lbs. | 180 lbs. | 180 lbs. | 180 lbs. |
| Furnaces—No. | 185 lbs. | 6 | 6 | 6 | 9 | 9 | 12 |
| Grate surface | 2 | 135 sq. ft. | 100 sq. ft. | 132 sq. ft. | 156 sq. ft. | 198 sq. ft. | 270 |
| Heating surface | 80 sq. ft. | 4,670 sq. ft. | 3,900 sq. ft. | 5,162 sq. ft. | 7,275 sq. ft. | 7,743 sq. ft. | 10,500 sq. ft. |
| Speed | 3,000 sq. ft. | 9 knots | 9 knots | 11 knots | 11 knots | 11 knots | 12 knots |
| Classification | 8½ knots | Lloyd's | Brit. Corp. | Lloyd's | Lloyd's | Lloyd's | Lloyd's |

**Nova Scotia Steel and Coal Co.**, New Glasgow, N.S., delivered the steel cargo s.s. Canadian Sealer; Marine Department contract 40; builder's yard no. 5; approximately 2,800 d.w. tons to the Marine Department, Dec. 20, 1919. See also sidehead paragraph "Canadian Sealer" above.

The company has received an order from the Marine Department for another steel cargo steamship, approximately 2,800 d.w. tons, at $190 per long d.w. ton.

**The Port Arthur Shipbuilding Co.**, Port Arthur, Ont., is negotiating with the Marine Department for an additional order for a steel cargo steamship of approximately 3,940 d.w. tons.

**Tidewater Shipbuilders Ltd.**, Three Rivers, Que., delivered the s.s. Canadian Rancher; Marine Department contract 14; builder's yard no. 6; approximately 5,100 d.w. tons; to the Marine Department, Dec. 27, 1919.

The company is also building 2 other steel cargo steamships of approximately 5,100 d.w. tons each, for the Marine Department, viz,. Canadian Fisher; Marine Department contract 15; builder's yard no. 7; the keel of which was laid Sept. 20, 1919; and Canadian Forester; Marine Department contract 16; builder's yard no. 8; the keel of which was laid Nov. 1, 1919. It expects to launch both in the spring.

**Wallace Shipyards Ltd.**, North Vancouver, B.C., delivered the steel cargo s.s. Canadian Raider; Marine Department contract 7; builder's yard no. 102, approximately 5,100 tons, to the Marine Department, Jan. 17.

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**The Canadian Merchant Service Guild** held its annual meeting at Vancouver, recently. The report for 1919 showed that there were 160 new members, the total membership being 606, including 9 honorary members. Decorations were won for bravery during the war by members, including one Order of the British Empire, one Distinguished Service Order and one Distinguished Service Cross. The financial statement showed a balance in the bank of $1,781.06, not including a special reserve fund of $2,427.61. Capt. W. L. Gilchrist, master of the C.P.R. s.s. Princess Patricia, was elected President. The other officers are:—Vice Presidents, J. B. Weeks, Nanaimo; D. Morton, Prince Rupert; J. J. Mulligan, Vancouver; D. Mackenzie, Victoria; J. H. Brown, Yukon, and J. O. Williams; Secretary, A. Goodlad; Treasurer, C. W. Wearmouth. Representatives of the various classes of ships were elected as follows: Ocean going, R. A. Bachelor; local passenger, D. Donald; local freight, John McNaughton; tow boats, W. W. Best; government boats, owned or chartered, H. R. Hilton; licensed pilots, J. C. Foote.

**Steamships to Be Salvaged**—Capt. J. T. Reid, General Manager, Reid Towing and Wrecking Co., Sarnia, Ont., is reported to have stated that he will close negotiations shortly for the salving of several steamships which were wrecked along the Atlantic and Gulf of St. Lawrence coasts, during last year. He expects to have sufficient contracts to keep the salvage crews busy throughout the forthcoming season. In cases where the hull is considered beyond salvage, attention will be paid only to the machinery and boilers.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The following contractions are used in the column giving the type of the vessels to be built:—s.d., single deck; 2.d., two deck: 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | 4,575 | $207. | $ 947,025 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " " | 67 | 8,390 | 180. | 1,510,200 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbuilding Co. Ltd. | 61 | 3.990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26. 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd. | 100 | 4.485 | 207. | 928,395 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5. 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | 4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9. 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5.100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbuilding Co. Ltd. | 62 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | June 3, 1918 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " " | 63 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " " | 64 | 3.990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5.100 | 200. | 1.020.000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | 5,100 | 200. | 1.020.000 | S.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | Dec. 27, 1919 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5.100 | 200. | 1.020.000 | S.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | ..... | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5.100 | 200. | 1.020.000 | S.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | 5.100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 11, 1919 | Oct. 9, 1919 | ..... |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | 5.100 | 200. | 1.020.000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 28, 1919 | ..... | ..... |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | 3,400 | 205. | 697,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 9, 1918 | May 5. 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | 3.400 | 210. | 714,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | 3.400 | 205. | 697,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | 3.400 | 210. | 714.000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15. 1919 | ..... | ..... |
| 23. | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18. 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | 8.390 | 188. | 1.577.320 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | 8,390 | 188. | 1.577.320 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | 8,390 | 188. | 1.577.320 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8. 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | 8,390 | 188. | 1.577,320 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Armourer | Harbor Marine Co. Ltd. | 1 | 8.390 | 198. | 1.661.220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | ..... | ..... |
| 30 | Jan. 24, 1919 | Canadian Composer | " " | 2 | 8,390 | 198. | 1.661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10. 1919 | ..... |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4.575 | 215. | 983.625 | S.d., p., b. and f'c's'le | Lloyd's | 10½ | Aug. 29, 1919 | ..... | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10½ | Aug. 29. 1919 | ..... | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | Jr. Coughlan & Sons | 11 | 8.390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Apr. 26, 1919 | Dec. 6. 1919 | ..... |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | 8,390 | 198. | 1.661,220 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27. 1919 | ..... |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | 8.390 | 198. | 1.661.220 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan. 24. 1920 | ..... |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | 8,390 | 198. | 1.661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | ..... | ..... |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10.500 | 197.50 | 2.073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10.500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. Ltd. | 5 | 2.800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8. 1919 | Dec. 20, 1920 |
| 41 | Mar. 31, 1919 | Canadian Miner | " " " | 6 | 2.800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | ..... | ..... |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8,390 | 198. | 1.661,220 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Bri. Corp. | 10 | Mar. 29, 1919 | ..... | ..... |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4.575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10 | July 14, 1919 | ..... | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbuilding Co. Ltd. | 65 | 3,990 | 180. | 718,200 | Lake, s.d., p. b., and f'c's'le | Lloyd's | 11 | Sept. 3, 1919 | Dec. 27, 1919 | ..... |
| 47 | Sept. 11, 1919 | Canadian Observer | " " " | 66 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | ..... | ..... |
| 48 | Sept. 2, 1919 | Canadian Artificer | Dominion Shipbuilding Co. Ltd. | 10 | 3.500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426.300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | ..... | ..... |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426.300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8.390 | 170. | 1,426.300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Midland Shipbuilding Co. Ltd. | 10 | 3.990 | 180. | 718.200 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Wallace Shipyards Ltd. | 103 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Collingwood Shipbuilding Co. Ltd. | — | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| — | ..... | ..... | " " " | — | 3,890 | 182.50 | 709.925 | Lake. s.d., p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Nova Scotia Steel & Coal Co. | — | 2.800 | 190. | 532,000 | 2.d. p., b. and f'c's'le | " | 8½ | ..... | ..... | ..... |
| — | ..... | ..... | Davie Shipbuilding & Repairing Co. | — | 8.390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 359.945 | | $69,522,260 | | | | | | |

# Mainly About Marine People.

**Capt. Barrett**, of the Keystone Transportation Co., has been appointed head of the School of Navigation, in connection with Queen's University, Kingston, Ont.

**Commander Sir A. Trevor Dawson**, R.N., one of the directors of Vickers Ltd., London, Eng., and of Canadian Vickers, Ltd., Montreal, also Chairman, Canada Steamship Lines London, Eng. Advisory committee, who was a knight bachelor, has been created a baronet.

**A. E. Disney**, heretofore Passenger Agent, White Star Line, Seattle, Wash., has been appointed Assistant General Manager, White Star Line, New York.

**Chas. Duguid**, Naval Constructor, Marine Department, left Ottawa, about the middle of January, for Great Britain, on official business, expecting to be away a month or six weeks.

**A. C. Garden** has been elected chairman of the Hamilton, Ont., Harbor Commission.

**Capt. W. L. Gilchrist**, master of the C.P.R. s.s. Princess Patricia, has been elected President of the Canadian Merchant Service Guild.

**M. J. Haney**, Vice President, Canada Steamship Lines, Ltd., and a director of Canadian Locomotive Co., has retired from the presidency of the Home Bank of Canada.

**Francis King**, of Kingston, Ont., General Counsel, Dominion Marine Association, whose portrait appears in this issue, was born at Kingston in 1870. He is an M.A. of Queen's University, Kingston, 1890, was called to the bar in 1892, and in 1903 formed a partnership with Geo. H. Smythe, B.A., son of the late E. H. Smythe, K.C., LL.D.; the firm name being King & Smythe. He assisted in the formation of the Dominion Marine Association in 1903, and has been connected with it since; first as Secretary Treasurer, and since as General Counsel. He has been a member of council of Queen's University since about 1900, and is now Counsel for the university. He is an Anglican, and has been Honorary Lay Secretary of Ontario Diocese for the past 10 years. He is a member of council of Ontario Bar Association, and chairman of its committee on legal ethics, a member of board of commissioners (three in number) appointed three years ago by the Ontario Government to act with commissioners from the other provinces in promoting uniformity of legislation throughout Canada, was President, Kingston Board of Trade, in 1917 and 1918, and is President, Frontenac Club, Kingston, 1919-1920.

**Alphonse Arsene Larocque**, who has been elected Second Vice President, Dominion Marine Association, was born at Henryville, Que., April 30, 1865. From 1904 to 1918 he was Managing Director, Sincennes-McNaughton Line, Ltd., Montreal, and since 1918 has been President of that company. He has also been President, Sorel Mechanical Shops, Ltd., Sorel, Que., from 1916; President, Montreal Drydocks and Ship Repairing Co., Ltd., Montreal, since 1917; and a director of the Banque d'Hochelaga, Montreal, since 1912.

**Capt. G. LeMarquand**, formerly of Bay City, Wash., has been appointed Manager, Consolidated Whaling Co.'s plant, Victoria, B.C., vice S. C. Ruck, who has left the company's service.

**Frederick Orr Lewis**, President, Canadian Vickers Ltd., shipbuilders, etc., and of Lewis Bros., Ltd., wholesale hardware merchants, Montreal, who has

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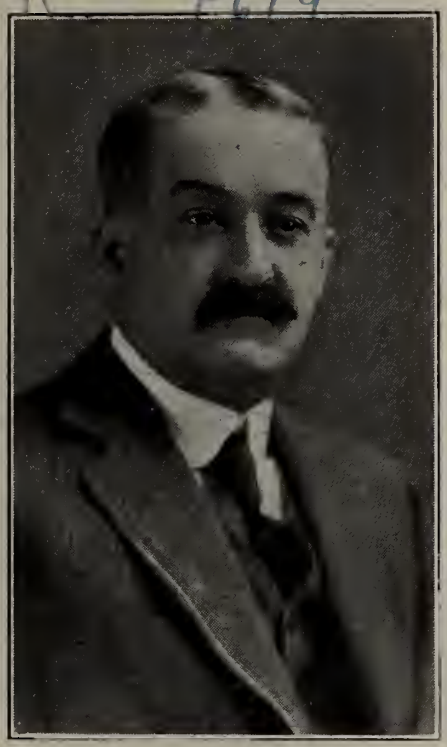

**A. A. Larocque,**
President, Sincennes-McNaughton Lines Ltd., and Second Vice President, Dominion Marine Association and Canadian Lake Protective Association.

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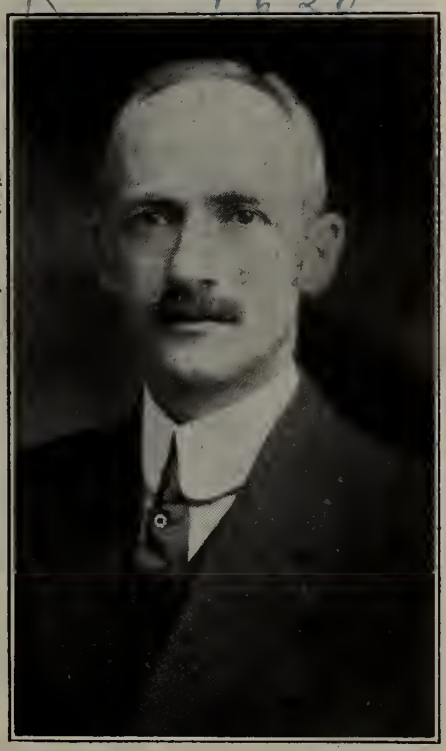

**Francis King, M.A.,**
General Counsel, Dominion Marine Association and Canadian Lake Protective Association.

spent a considerable portion of his time in England during the last few years, has been created a baronet. He was born at Hamilton, Ont., Feb. 11, 1862, his father being a shipowner on the Great Lakes, who retired from active business in 1890.

**A. E. Mathews**, Managing Director, Mathews Steamship Co., Toronto, and President, Dominion Marine Association, and Canadian Lake Protective Association, is spending a few weeks in Florida.

**J. C. Mitchell**, has been appointed Assistant Manager; **N. R. Nichol** has been appointed Inspector of Construction, and **F. Rockwell** has been appointed Superintendent of Construction, Toronto Harbor Commission.

**Thomas R. Percy**, who was appointed General Agent Canadian Pacific Ocean Services Ltd., Yokohama, Japan, recently, was born in Ireland, Apr. 21, 1888, and entered transportation service in March, 1902, since when, he has been to April, 1907, freight traffic clerk, Belfast and Northern Counties Ry. (Midland Ry.), Belfast, Ireland; May, 1907, to Jan., 1916, steamship audit clerk, C.P.R., Montreal; Jan., 1916 to Aug., 1919, chief clerk, Passenger Department, Canadian Pacific Ocean Services, Ltd., Montreal. He travelled all over the world until 1905, with his father, who was an ocean captain, and who died while on a voyage from Calcutta to England. A brother is in Furness Withy & Co.'s service at Montreal.

**C. P. Sargeant**, heretofore Assistant Passenger Agent, White Star Line, Toronto, has been appointed Passenger Agent, White Star Line, Seattle, Wash., vice A. E. Disney, promoted.

**D. A. Stewart**, Deputy Port Warden, Montreal, died there Jan. 1, of pneumonia, aged 39. Prior to his appointment in April, 1914, he was for some years in C.P.R. ocean steamship service.

**William George Swan**, who has been appointed Chief Engineer, Vancouver Harbor Commissioners, was, prior to the war, in Canadian Northern Pacific Ry. service in connection with railway construction in British Columbia, with headquarters at New Westminster. He also supervised the building of the terminals at Port Mann. He spent three years on active military service in France, with one of the railway construction battalions, with the rank of major, and latterly has been in charge of construction of the Canadian National Rys. Kamloops-Vernon-Kelowna-Lumby Branch.

**John Torrance**, Manager, White Star-Dominion Line, Montreal, who has retired from that position, was entertained at dinner recently by the Shipping Federation of Canada, of which he was chairman of executive committee for the past three years. He first entered transportation business in 1876 with David Torrance & Co., agents for the Dominion Line, and remained with the Dominion Line after its absorption by the International Mercantile Marine Co., and its incorporation with the White Star Line.

**R. Winter**, heretofore, chief officer, s.s. Canadian Trooper, has been appointed captain, s.s. Canadian Raider, Canadian Government Merchant Marine, Ltd.

**H. A. Young**, formerly Traffic Manager, Canadian Lake Line, has been appointed agent for the Walford Forwarding Corporation of New York, with office at 53 Yonge St., Toronto.

# Dominion Marine and Canadian Lake Protective Associations' Annual Meetings.

The Dominion Marine Association's annual meeting was held at Montreal, Jan. 9. In the absence of the President, W. J. McCormack, Superintendent, Algoma Central Steamship Line, Sault Ste. Marie, Ont., the First Vice President, A. E. Mathews, Managing Director, Mathews Steamship Co., occupied the chair.

The Executive Committee's report for 1919 prepared by the General Counsel, Francis King, M.A., and approved by the committee, was submitted in printed book form, dealing with the following subjects: Legislation, including bills introduced and those passed at the Dominion Parliament's last session; coasting laws; coastwise customs clearances in Canada; immigration laws; St. Lawrence River pilotage; double courses on the Great Lakes; Dominion Wreck Commissioner; International Joint Commission; Board of Grain Commissioners; Canadian Wheat Board; conference at Ottawa regarding movement of 1919 grain crop; St. Lawrence River development; Welland Ship Canal and facilities for trans-shipment at Kingston; additional canal lock at Sault Ste. Marie; licenses for bunker coal and supplies; hospital expenses of seamen; shipping register at Toronto; lake levels; dock, harbor, channel and canal improvements; aids to navigation; obituary; general business, membership and tonnage. Under the heading last mentioned, it was stated that the steam tonnage enrolled in 1919 was 158,313 net registered tons, and the barge, or sailing, tonnage, 19,549 net registered tons, against 21,710 in 1918, a total of 177,862 tons in 1919 against 160,168 tons in 1918. The steam tonnage was increased by the enrolment of ships belonging to a number of new member companies. Appended to the report were reports from the Public Works Department's district engineers between Fort William and Montreal and from the Dominion Canals superintending engineers, showing work undertaken and improvements made in 1919 and in some cases forecasting further work contemplated or suggesting improvements which should be made and may reasonably be expected when the present financial stringency is lessened. On account of the exigencies of war, but little expenditure of public money has been made on works not demanded by actual necessity. Illustrations of a few of the more important recent marine undertakings on the Canadian side of the lakes, and upper St. Lawrence, and photographs of officers and members of the committee, were inserted in the report for first time.

It was resolved to obtain from the Upper Canada Tract Society a report as to the use made of the shipping register at Toronto, towards which the association has contributed certain amounts.

The executive committee having approved of a proposal for the merger of the Canadian Lake Protective Association in the Dominion Marine Association, the following resolution was adopted: Whereas the Canadian Lake Protective Association sprang from, and its members are all members of, the Dominion Marine Association, and whereas all these members have expressed their willingness that the Canadian Lake Protective Association should be merged in the Dominion Marine Association and conduct its proceedings as a committee or section of the parent organization; and whereas it appears to be expedient the Dominion Marine Association hereby that this amalgamation or merger should take place; therefore, be it resolved, that

A. E. Mathews,
Managing Director, Mathews Steamships Co., President, Dominon Marine Association and Canadian Lake Protective Association.

H. W. Cowan,
Director of Operation, Canada Steamship Lines Ltd., and First Vice President, Dominion Marine Association and Canadian Lake Protective Association.

agrees to the proposal and to accept the assets and liabilities of the Canadian Lake Protective Association and to carry on its work, or otherwise act in the premises, in accordance with the terms of a resolution adopted by the Canadian Lake Protective Association in the annual general meeting this day.

J. F. M. Stewart, Point Anne Quarries, Ltd., introduced a suggestion for enlargement of the association's scope so as to include coasting or ocean trade, and after discussion and the reading of a letter from W. E. Burke on the same subject, the matter was referred to the executive committee.

It was resolved to amend the constitution in accordance with notice given and in accordance with the executive committee's recommendation so as to permit the election of an executive committee of 12 or more members.

Plans of improvements proposed at Kingston to provide facilities for transshipping cargoes arriving through the new Welland Ship Canal were submitted from the Kingston Board of Trade, as approved by the Public Works Department's District Engineer, the engineer engaged by the City of Kingston and the engineers for the three railway companies, and the plans were referred to the executive committee.

It was resolved that the executive committee be asked to present a protest against the arbitrary action of the Canadian Wheat Board, and also to make enquiry as to the method of ice breaking at the head of the lakes, with special reference to lack of assistance suffered by certain ships.

T. R. Enderby, Managing Director, Montreal Transportation Co., suggested that the Dominion Government's attention should be called to the absolute necessity of having the Port Colborne, Ont., elevator repaired and in service again for the opening of navigation this year. He said that the elevator was destroyed on Aug. 9, 1919, and ship owners have been very severely handicapped by loading and discharging grain there through the Maple Leaf Milling Co.'s house on account of the loading and discharging facilities not being as efficient as the government house. The last reports received on the repairs to the elevator did not show that the repairs were in a very advanced stage. It was resolved to ask the Dominion Government to have the elevator ready for operation by the opening of navigation in the spring.

The question of the half cent charge for trans-shipment at the Maple Leaf elevator at Port Colborne, Ont., protested against by the association, was referred to the executive committee.

The following were appointed a committee on aids to navigation: W. J. Bassett, J. D. Andrews, A. E. Mathews, W. J. McCormack, H. N. McMaster, W. H. Smith, J F. Sowards and John Waller.

The following were elected members of the executive committee for one year: Nomination for the executive committee were then called for and the following were received: W. J. McCormack, Algoma Central Steamship Line; H. W. Cowan, Canada Steamship Lines Ltd.; W. H. Smith, Ontario Car Ferry Co., retiring members, and G. J. Madden, Geo. Hall Coal Co., of Canada; T. R. Enderby, Montreal Transportation Co.; E. W. Oliver, Niagara, St. Catharines and Toronto Navigation Co.; J. Wilkie, Marine Superintendent, Imperial Oil Ltd.; E. H. Beazley, Union Steamship Co. of British Columbia.

At a subsequent meeting of the executive committee the following officers were elected: President, A. E. Mathews, Managaing Director, Mathews Steamship Co., Toronto; First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal; Second Vice President, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

**Canadian Lake Protective Asscciation.**

The Canadian Lake Protective Association's annual meeting was held immediately after the Dominion Marine Association's meeting. In the absence of the President, W. J. McCormack, A. E. Mathews occupied the chair.

The executive committee having approved of a proposal for the merger of the association in the Dominion Marine Association, it was resolved that whereas the Canadian Lake Protective Association sprang from, and its members are all members of the Dominion Marine Association, and whereas all these members have expressed their willingness that the Canadian Lake Protective Association should be merged in the Dominion Marine Association and conduct its proceedings as a committee or section of the parent organization; and whereas it appears to be expedient that this amalgamation or merger should take place; therefore be it resolved that the Canadian Lake Protective Association be merged in the Dominion Marine Association, and that all its future proceedings be conducted or determined in such manner as may be decided by the last named association, which shall hereafter have full power and authority to deal in the matter as fully and effectively as with its own affairs; and that the President of the Dominion Marine Association, who is ex-officio Chairman of the Canadian Lake Protective Association, and the Secretary-Treasurer of the Canadian Lake Protective Association are authorized to transfer to the Dominion Marine Association, Victory Bonds for $3,000, the funds in bank, and all other assets belonging to the Canadian Lake Protective Association and to sign all such documents as may be necessary.

The following were elected as the committee for 1920: A. E. Mathews, Chairman, Toronto; W. J. Bassett, Toronto; W. E. Burke, Montreal; H. W. Cowan, Montreal; J. D. Andrews, Montreal; T. R. Enderby, Montreal; W. J. McCormack, Sault Ste. Marie; J. Wilkie, Toronto; H. N. McMaster, Montreal; W. H. Smith, Montreal; John Waller, Montreal; A. A. Wright, Toronto.

**Dominion Marine Association's Annual Dinner.**

The Dominion Marine Association's annual dinner, the holding of which was suspended during the war, was held at the Windsor Hotel, Montreal, in the evening, was largely attended and was most enthusiastic and successful. A. E. Mathews, President, occupied the chair. The principal speaks were the Minister of Marine, Hon. C. C. Ballantyne, and the Minister of Railways and Canals, Hon. J. D. Reid, full reports of whose speeches appear further on in this issue. A. Johnston, Deputy Minister of Marine, and W. E. Becker, Cleveland, Ohio, the latter representing the Lake Carriers' Association, also spoke.

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J. W. Troup, Manager, British Columbia Coast Service, C.P.R., is in Great Britain regarding the possible building of a steamship or steamships for the coast service.

## Montreal Shipping Statistics for 1919.

During 1919 there arrived at Montreal 702 trans-Atlantic ships representing a tonnage of 2,041,638, compared with 644 ships in 1918, with a tonnage of 1,910,-621. In 1910 the number of such ships arriving was 410, and in 1914, when war had not greatly affected the situation, the number was 551.

The grand total of sea going ships which arrived in 1919 was 786, with a total tonnage of 2,179,280, and the number of seamen who operated them was 46,448. The great bulk of this shipping was British, there being 503 ships with a tonnage of 1,646,532, under that flag; while the next in importance was United States with 229 ships, representing a tonnage of 384,555. For the rest, there were French, Italian, Norwegian, Greek, Dutch, Danish, Brazilian and Rumanian craft. Of this total 756 were of iron or steel, with a tonnage of 2,174,133, and 30 were of wood, representing 5,147 tons.

Shipping between Montreal and the Lower St. Lawrence, also inland shipping, showed some recovery, but far from the standard of pre-war days. Inland transportation was represented by 7,499 ships, the tonnage of which was 4,357,734, an increase of 1,397 ships and of 1,043,826 tonnage over 1918. The war period was a poor one for inland transportation owing partly to the fact that it was more expeditious to move foodstuffs by rail, and also on account of the fact that many small craft were diverted elsewhere for special war purposes.

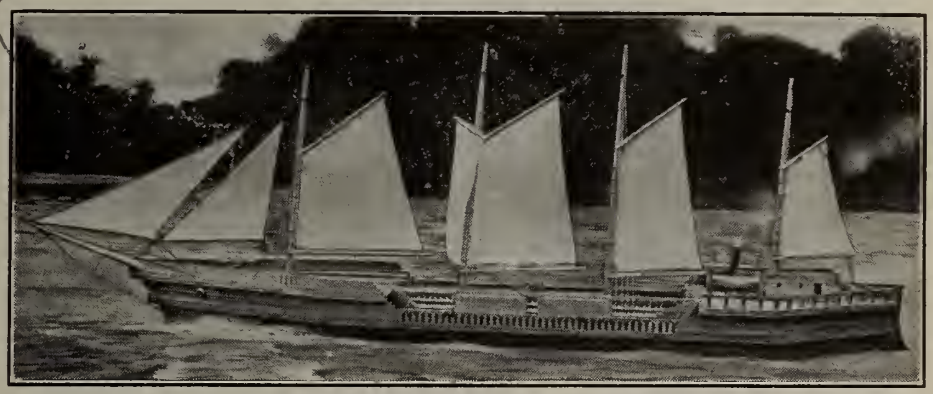
River and gulf traffic between Montreal and the Maritime Provinces also showed a decided improvement, the number of ships in this category being 84, with a tonnage of 137,642, compared with 30 ships and 22,861 tonnage in 1918. In this case again the war had caused great interruption of traffic.

Statistics for the past decade shows that while the trans-Atlantic traffic has been steadily growing, the traffic between Montreal and the Maritime Provinces and the Great Lakes, dropped with the outbreak of war and has by no means recovered.

In 1910 the number of trans-Atlantic vessels that arrived in port was 411, in 1913 it was 477, and in 1914, 551. Then came the war, and the figures in 1915 dropped to 484. In 1916 the total rose to 569, in 1917 to 579, and in 1918 to 644, and in 1919 to 702. It must be borne in mind that certain ships which belong to the St. Lawrence have been withheld by the British Ministry of Shipping, and there were also some delays and breaks in the port's activities owing to strikes on the other side of the Atlantic.

The Maritime Provinces' shipping shows a distinct falling off since the war. The year 1910 saw 336 vessels, with a tonnage of 574,808, and that standard was adhered to fairly well up to 1915; then in 1916 the figures fell to 129 ships, with 68 for 1917, 30 for 1918, rising to 84 for 1919.

In the figures for inland transportation there is a similar decline. In 1910 there were 13,636 ships, and in 1915, the number fell to 8,572 from 12,225 in 1914. The number in 1919 was 7,499; but, the total tonnage of 1914 was 4,-357,734, compared with 4,327,799 in 1910, which indicates that though fewer ships are plying up and down the river and lakes, they are of a larger type.



**Demountable Wooden Ship, with Auxiliary Power.**

The above shows a demountable wooden ship, designed by John Arbuthnot, Victoria, B.C., with the following approximate dimensions,—length, 250 ft.; beam, 60 ft.; depth, 25 ft.; built up of lumber, with sails spread from 4 masts stepped in the cargo. Ships of this type will, it is announced, be operating shortly between British Columbia ports and Great Britain. On arrival at a British port, the ships will be demounted, the lumber cut to marketable dimensions, and the auxiliary machinery sold, or returned to British Columbia for further similar service. Canadian Railway and Marine World published a considerable number of interesting facts concerning this type of ship in its issues of July, Aug., and Sept., 1919.

## Proposed Development of Hamilton Harbor.

J. M. Wilson, District Engineer, Public Works Department, Central Ontario District, has reported to the Hamilton Harbor Commission on a proposed development of the port of Hamilton, Ont. The city has a population of 110,000, but is growing very rapidly, particularly in its industries. The proposed harbor scheme is intended to take care of the growth of the city for a number of years to come, but has certain provisions for early construction. The proposition resembles very much the new harbor development at Toronto, and shows the influence of the Toronto harbor engineers who acted in an advisory capacity. It provides, in general, for ships drawing 30 ft. of water, to dock in slips on the present shore line and along wharves built out into the harbor; the reclamation of considerable of the inner harbor area by dredging, which will deepen the central harbor, service of the industrial lines with cheap electric transportation concentrated on a marginal way; and the creation of park lands, recreation centers and a boulevard drive around the entire water front. The completion of the work would leave Hamilton harbor with an area of 4,380 acres or 6.8 square miles, having a general depth for navigation of 30 ft., compared with the present 4,500 acres having a depth of 18

ft. There would be added 1,250 acres of park and residential property, 1,198 acres of land suitable for industrial purposes, and 6.26 miles of docking accommodations. The sum required for immediate consideration is about $4,500,000, which it is suggested should be apportioned among the Dominion Government, the City of Hamilton, and the Hamilton Harbor Commission, after the same general scheme which is being followed in Toronto.

## United States Shipping and Shipbuilding Notes.

Actual construction is reported to have been started, in 38 U.S. shipyards, on 152 steel ships, aggregating 805,147 gross tons, contracted for by private interests.

According to estimates completed by U.S. board officials, Jan. 15, the board's vessels earned about $100,000 each in 1919. Twelve hundred ships were operated during the year, but it is explained that net earnings would not be $120,000,000, as overhead and other charges must be deducted from this total.

The U.S. Bureau of Navigation reports that during 1919 private U.S. shipyards built 2,338 merchant ships of 4,213,891 gross tons, which have been officially numbered for U.S. shipowners, and are now in trade, or about to engage in trade. U.S. shipbuilders also built 25 ships of 44,250 gross tons, for foreign owners, making a total output of 2,363 ships of 4,258,141 gross tons for 12 months.

The U.S. Shipping Board announced an advance of 75c a ton in coal rates from Hampton Roads and Baltimore to Boston and other New England ports, effective Jan. 10. The Division of Operations explains that this advance is brought about by the fact that ships in this service have been operating at a loss and that 75c a ton will simply take care of increased costs of operation.

The Atlantic Coast Shipbuilders' Association (U.S.A.), reports that work for private accounts is replacing that which was being done for the U.S. Shipping Board and although a number of orders for U.S. industries have been completed or withdrawn during the past few weeks, the shipyards today are building over 250,000 gross tons more than they were a month ago and nearly half a million tons more than in Oct., 1919. The total under construction, exclusive of all government work, is 805,000 gross tons, the equivalent of more than 1,200,000 d.w. tons of sea going vessels.

## Harbor Improvements at Kingston, Ont.

A Kingston, Ont., deputation waited on the Dominion Government recently in connection with proposed improvements in Kingston harbor, being received by Hon. J. D. Reid, Minister of Railways and Canals; Hon. Sir Henry Drayton, Minister of Finance and M.P. for Kingston, and Hon. N. W. Rowell, President of the Council. The plans include the dredging of the approach through the outer harbor to a depth of 25 ft., and dredging in the inner harbor to a depth of 25 ft., and dredging in the inner harbor above the LaSalle highway to the same depth, so as to provide a first class landlocked basin, sufficient to accommodate a large number of great lakes freight steamships. Dock frontage will be provided, with a modern grain elevator with 400,000 bush. capacity in the operating house, and 2,400,000 bush. capacity in the adjoining storage, with provision for ample extension. The basin is to be dredged toward the elevator, to provide for the prompt loading of river craft, and the plans also show a complete layout of railway tracks and yards to afford the best possible facilities for forwarding cargoes by rail. The estimate of cost is about $2,500,000. The plans and estimates were prepared by S. J. Chapleau, District Engineer, Public Works Department, who had been charged specially with the work, for the government. The deputation asked that the work be commenced at once, so that the harbor will be in a position to provide the necessary trans-shipment facilities before the Welland Ship Canal is completed. The representations were favorably received, and the deputation was practically assured that the work would be undertaken and completed in time to receive the first ship through the new canal, and it is anticipated that the estimates to be dealt with at the forthcoming parliamentary session, will include an amount to permit commencement of the work.

Trawler Sales—The Anderson Co. of Canada, which bought the trawlers and drifters built in Canada for the British Government, has sold T.R. 41 to a European purchaser, and she is being fitted out at Halifax, N.S., after which she will cross the Atlantic and be exhibited at various European ports, prior to being turned over to her new owner. Capt. C. E. Barry, Beaumont, Tex., has bought T.R. 57, the second he has acquired, the first one being T.R. 50, which he renamed Colonel Rockwell. He reports that this steamship has far exceeded his expectations. She made a trip of about 3,000 miles, in 13 days, without any trouble. He is using her as a cargo ship and for towing lumber barges between Beaumont and Tampico, and on one voyage, while loaded with 300 tons of cargo, she towed 2 lumber barges to Mexico at an average speed of 7½ knots for the trip. He is negotiating for the purchase of another similar ship.

**The Toronto, Hamilton and Buffalo** Navigation Co.'s car ferry, Maitland No. 1, which was beached at Lowe's, or Patton's Point, in Lake Erie, about 4 miles west of Port Maitland, Dec. 23, was released by tugs, Dec. 29, and proceeded to Port Maitland, after which she took full cargo for Ashtabula, Ohio, and then proceeded to Buffalo, N.Y., where she was drydocked for examination. It was found that 26 plates had been damaged, and on completion of these repairs, she was berthed at Buffalo for the remainder of the winter.

**The Keystone Transportation** Co. of Canada, Ltd., has acquired the Penn Coal and Transportation Co. Ltd., and has obtained supplementary letters patented, changing the name of the latter company to that of the former company; and it has also been granted supplementary letters patented, changing the name of the Keystone Transportation Co. of Canada, Ltd., to Laurentian Transportation Co. Ltd. The company is controlled by interests associated with the Montreal Light, Heat and Power Co.

## Non-Registered Vessels Built in Canada for Other Countries in 1919.

Full data as to the extent to which Canadian shipyards contributed to the tonnage of other countries in 1929 are not yet available, but the Marine Department has furnished some figures showing the operations in this respect for the first 11 months of the year. There were altogether 65 vessels, representing a total net tonnage of 79,992, which were not registered in Canada and were exported to other countries. Only 7 of these, however, were steel ships, and about half of the total number were wooden ships built on the Pacific Coast for French interests. The 7 steel ships were divided up among Ontario, Quebec and Nova Scotia. Following are the official returns for the 11 months ended Nov. 30, 1919:

| | Wood—Sail. | | Wood—Steam. | | Steel and Steam. | |
|---|---|---|---|---|---|---|
| | No. | Tonnage | No. | Net tonnage. | No. | Net tonnage. |
| British Columbia | ... | ..... | 32 | 39,233 | .. | ..... |
| Ontario | .... | ..... | .... | ..... | 2 | 7,100 |
| Quebec | .... | ..... | 8 | 3,095 | 2 | 2,668 |
| New Brunswick | .... | ..... | 6 | 9,238 | .. | ..... |
| Nova Scotia | 5 | 1,567 | 7 | 12,436 | 3 | 4,658 |
| | 5 | 1,567 | 53 | 64,002 | 7 | 14,423 |
| Total number of vessels | | | | | | 65 |
| Total tonnage | | | | | | 79,992 |

## VESSEL FOR SALE.

TENDERS addressed to the undersigned at Ottawa, and endorsed on the envelope "Tender for steamer Champlain," will be received up to noon of the

**Ninth Day of February, 1920**

for the purchase of the steamer "Champlain," now at Murray Bay, P.Q., where it may be inspected by intending tenderers.

The leading dimensions of the vessel are as follows—

Length, 120' 0".
Breadth, 30' 3".
Depth, 17' 6".
Gross tonnage, 522.
Net tonnage, 235.
Boiler, built in 1904 by Fleming & Ferguson. Scotch Marine, 16' x 11'. Pressure, 120 lbs.
Engine, compound surface condensing, direct acting, 2 cylinders, 22½", 46", stroke 24".

The vessel will be sold as it now stands, without any warranty as to condition of hull, boiler, machinery, equipment or appurtenances, and the successful tenderer must agree to take immediate delivery of the vessel.

Each tender must be accompanied by an accepted cheque on a chartered Canadian bank, equal to five per cent. (5%) of the whole amount of the offer, which cheque will be forfeited if the successful tenderer declines to complete the purchase of the steamer at his tender price. Cheques accompanying unsuccessful tenders will be returned.

The highest or any offer not necessarily accepted.

Newspapers copying this advertisement without authority from the Department will not be paid for same.

ALEXANDER JOHNSTON,
Deputy Minister of Marine.

Department of Marine,
Ottawa, January 23, 1920.

# Shipbuilders Petition Dominion Government for Bonusses.

A delegation waited on Sir Geo. E. Foster, Minister of Trade and Commerce, and acting Premier, Hon. C.C. Ballantyne, Minister of Marine, and other members of the Dominion Government at Ottawa, Jan. 7, to present a petition asking for bonusses in aid of shipbuilding, the companies named being represented as follows: British American Shipbuilding Co. Ltd., Welland, Ont.; H. M. Belfour and .... Davison; Canadian Allis-Chalmers Ltd., Bridgeburg, Ont., E. Jenking; Canadian Vickers, Ltd., Montreal, A. R. Gillham and P. L. Miller; Collingwood Shipbuilding Co Ltd., Collingwood, Ont., H. B. Smith and J. S. Leitch; Davie Shipbuilding and Repairing Co. Ltd., Lauzon, Que., Sir David Watson; Halifax Shipyards Ltd., Halifax, N.S., M. J. Haney, J. F. M. Stewart and R. M. Wolvin; Midland Shipbuilding Co., Midland, Ont., J. Wilkinson; Port Arthur Shipbuilding Co., Port Arthur, Ont., P. E. Chace and J. Whalen; Three Rivers Shipyards, Ltd., Three Rivers, Que., H. L. Clifford; Tidewater Shipbuilders, Ltd., Three Rivers, Que., A. A. Wright.

The petition was addressed to the acting Premier, the Right Hon. Sir George E. Foster, as follows:—On behalf of the following shipbuilders viz.: Halifax Shipyards Ltd., Halifax and Dartmouth, N.S.; Nova Scotia Steel and Coal Co., New Glasgow, N.S.; Three Rivers Shipyards Ltd., Three Rivers, Que.; Davie Shipbuilding & Repairing Co., Lanson, Que.; Tidewater Shipbuilders Ltd., Three Rivers, Que.; Canadian Vickers Ltd., Montreal; Dominion Shipbuilding Co., Toronto; British-American Shipbuilding Co., Welland, Ont.; Canadian Allis-Chalmers Ltd., Bridgeburg, Ont.; Midland Shipbuilding Co., Midland, Ont.; Collingwood Shipbuilding Co., Collingwood and Kingston, Ont.; Port Arthur Shipbuilding Co., Port Arthur, Ont.; Yarrows Limited, Victoria, B.C.; Prince Rupert Dry Dock and Shipbuilding Co., Prince Rupert, B.C.; Victoria Machinery Depot Ltd., Victoria, B.C.; Wallace Shipyards Ltd., North Vancouver, B.C.; J. Coughlan & Sons, Vancouver, B.C., we respectfully submit the following petition:—

Prior to the outbreak of war steel vessels were built in Canada in only a few shipyards, which produced intermittently a small tonnage of lake cargo and passenger vessels, scows, dredges, buoy steamers, etc. Subsequent, however, to the outbreak of war, all the existing companies, and a number of new ones, have energetically gone in for steel shipbuilding, and many extensive shipyard organizations have been built up. The capital actually invested at present is approximately $47,000,000, exclusive of working capital, and the industry furnishes employment to approximately 23,500 men in the shipyards (not less than 25% of these men having served overseas) and almost another 23,500 men engaged in the construction of ship plates, shapes, machinery furnishings and equipment. Adopting the usual standard of dependents for each workman, over 200,000 persons are subsisting on this industry at present. An important feature to be noted is that the expenditure for labor and material in ship construction is almost entirely made within the country, whereas the product is chiefly for export, the result being additional wealth for the country.

Owing to the great demand for tonnage in 1916, the British Government, through the Imperial Munitions Board, induced the existing steel shipbuilding yards in Canada to construct steel ships were built, not only in the yards on the lakes, but also at Vancouver, Montreal and elsewhere. In the latter yards cargo vessels were constructed as large as 8,800 d.w. tons. When the present Dominion government came into power in 1917, it very wisely decided that Canada required a merchant marine of her own, and from that date up to now that work has kept the existing steel yards in Canada fully occupied. From the above some idea of the magnitude of the industry can be formed, and the importance to the country of continuing its operation is manifest.

The Minister of Marine has publicly referred from time to time with pride to the results accomplished, and the shipbuilders feel confident that the government will assist them in maintaining their operations. Following the suspension of hostilities, the Canadian Government shipbuilding programme provided the necessary work to keep the yards occupied to full capacity, and, what was more important, Canada has been able to greatly expand her export business, and to supply ships that will be needed to co-operate with the Canadian National Railways; thereby greatly improving the government's transportation system. It must be gratifying to the government to know how enthusiastically its shipbuilding programme has been received throughout the country, and that when its fleet of ships is completed it will have placed Canada in the position of trading successfully with other countries.

The Minister of Marine, made the statement in parliament in May, 1919, that the government was nearing the end of its shipbuilding programme and clearly indicated that if the shipyards in Canada hoped to continue they would have to look for business elsewhere. When introducing the government's ship building programme in Mar., 1918, the Minister of Marine made the statement that the government's policy was to encourage shipbuilding as a permanent industry, which policy was confirmed subsequently by the encouragement given to the erection of a large plate mill at Sydney, N.S.

The workmen employed in our Canadian shipyards have demonstrated their efficiency and ability to build ships in a sound and workmanlike manner, and equal in all respects to those constructed in any other country, and in fairness to the workmen and their dependents, and having regard to the large capital invested, we submit that the present time is most opportune for co-operation between the government and the shipyards to the end that this great industry be firmly established. A reasonable bounty would enable Canadian shipbuilders to compete in the markets of the world for business, and permit them to operate to their fullest capacity, resulting in the ultimate reduction of costs and the placing of the industry on a permanent basis. In addition to the world wide financial difficulties, the shipbuilders are also faced with the abnormal conditions of exchange, which at present militate so greatly in favor of Great Britain. Our shipbuilding industry commenced a few years ago, with wide difference in wages and efficiency as compared with the British shipbuilder, skilled in his trade from the days of his apprenticeship. The experience received on the vessels we have built has gradually increased the efficiency of Canadian workmen, and if this industry can go on continuously for a term of years, the excess labor cost in Canada will disappear, and Canada will have a national asset represented not so much by $50,000,000 of operating shipyards, as by an army of skilled shipbuilders. Skilled labor is a nation's greatest asset.

The applicants therefore ask as an essential to the life of their industry, that the Dominion Government grant for a term of 10 years a bonus of $10 per load displacement ton, and $10 per indicated horse power on steel ships built in Canada and completed after April, 1920. Without the assistance asked for, the existing plants cannot be continuously employed, and the breaking up of the organizations will necessarily follow, thereby throwing large numbers of men out of employment, and undoing much of the good which the government has achieved by the encouragement given to the shipbuilding industry, and in the employment of returned soldiers and men previously at work on munitions. We are convinced of the great merit of our request and respectfully ask your earnest and favorable consideration and prompt action in the matter.

Signed on behalf of the companies above named by J. F. M. Stewart, Toronto and W. L. Murray, Secretary.

Subsequently P. L. Miller, H. B. Smith, J. F. M. Stewart and R. M. Wolvin, were appointed a committee to go into details with the government.

A number of boards of trade and other bodies were advised that the shipbuilders intended asking the government for substantial co-operation, and resolutions urging the same from the following organizations were attached to the petition:—

Halifax, Kingston, Montreal, New Glasgow, Port Arthur, Stellarton, Three Rivers, Sydney, Toronto and Welland boards of trade; Collingwood Chamber of Commerce; Halifax, Kingston, Port Arthur, and Sydney City Councils; and Bertie Tsp. Council.

The Montreal Board of Trade at a recent meeting passed a resolution, as stated above, urging the government to seriously consider measures toward ensuring the continuance of the steel shipbuilding industry in Canada, Sir George Foster, and Hon. C. C. Ballantyne, acknowledged its resolution and gave assurance of their appreciation of its terms, which would receive the government's most careful consideration. Mr. Ballantyne referred to the matter at the Dominion Marine Association's dinner in Montreal, Jan. 9, and a full report of his remarks appears on another page.

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**Steamship Glencadam**—Canadian Railway and Marine World for Dec., 1919, contained an item announcing that the Great Lakes Transportation Co., Midland, Ont., had bought the s.s. F. P. Jones from U.S. owners, and had transferred her to the Canadian register under the name of Glencadam. We were later advised that the name was Glencaden, and made this announcement in the January issue. The correct name is, as first mentioned, Glencadam.

# The Minister of Marine, and the Minister of Railways and Canals, on the Dominion Government's Shipbuilding Programme, the Canals, Etc.

The Minister of Marine, Hon. C. C. Ballantyne, and the Minister of Railways and Canals, Hon. J. D. Reid, were the principal guests at a dinner given by the Dominion Marine Association at the Windsor Hotel, Montreal, on the evening after the association's annual meeting, on Jan. 9.

Mr. Ballantyne, in replying to the toast of his health, explained what had been done by the government in its shipbuilding programme, this being for the benefit of the visitors from the United States, though he admitted this programme had not been on anything like the scale of the United States Emergency Shipbuilding Corporation. He said:—"It may interest you to know that we have 60 steel ships under construction. When they are finished, not later, I hope than this time next year, we will have a net tonnage of 360,000 tons. Twenty-three of these vessels are in service. Their tonnage ranges from the lake size vessels of 3,750 d.w. tons to as much as 10,500 tons, the latter ships are being built by the Halifax Shipyards Ltd., so you will see we have a pretty good nucleus now, and by this time next year, with our 60 ships, we hope to greatly expand Canada's export business. The country at present, due to the war and the other expenditures that were necessary, is of course rather handicapped. With a young and growing country like this, and more particularly if Canada will expand her export trade, everything will come out all right, and I hope that Canadian manufacturers of Canada will take full advantage of the Government Merchant Marine and go actively after foreign business.

"While these ships are built by the Dominion Government, and own by the government, they are not operated or managed by the government. The Canadian Government Merchant Marine, which is a subsidiary company to the Canadian National Railways, while it is owned by the government, is the company that operates and manages the Canadian Government Merchant Marine. D. B. Hanna and his board of directors have an absolutely free hand in the management of the government ships. As Minister of Marine I never assume to dictate to them in any way at all, neither does any other member of the government. The responsibility for the success of the government's merchant marine rests entirely on the shoulders of D. B. Hanna and his board of directors. What routes they shall be used on, what freight they will carry, what the rates of freight will be, is not a matter for the Dominion Government to deal with.

"We have shipbuilding yards from Halifax to Prince Rupert. Canada's ship building programme is young. A great deal of credit is due to Canadian ship builders for having risen to the occasion when the government asked them to undertake steel ship building, for the first time, in that they have done as well as they have. I am not stating anything beyond absolute facts when I say that the steel ships that have been built in our yards throughout Canada are equal in design, workmanship and efficiency to similar ships built in England, Ireland or Scotland. It is astonishing to find that the capital invested at present in the ship yards amounts to the very large sum of $47,000,000. The number of men employed in ship yards only is 23,500. Not less than 25% of those men have served overseas. Then in addition to that there are 25,000 men engaged in the construction of ship plates, ship machinery, furnishing, and so forth. Adopting the usual standard, there are at least 200,000 men who are subsisting at this time on these industries. Another important feature is that the material that enters into the construction of these ships is very largely produced in our own country and by Canadian workmen.

"Another very gratifying fact to the government is that notwithstanding when the war was on, Canada was able to produce steel ships at as low cost as any other nation was doing, and in a great many cases even less. Our ships contracted for during the war have all cost considerably less than $200 a d.w. ton, and as soon as the armistice was signed the government was able to close contracts at $25.00 a ton less than during the war. I think this speaks very well indeed for the efficiency and energy of our Canadian shipyards and the men who are engaged in them. Then in addition to that, and what is a great deal more important to the government, one of Mr. Hanna's officials has been good enough to give me figures as to the ships that are in operation, showing that their net profit of these ships has been a very handsome one indeed, and that reflects a great deal of credit on the Canadian Government Merchant Marine management.

"Our Canadian shipbuilders have demonstrated that they can build freight ships. I am happy to tell you that on the representations that have been made to Dr. Reid by Mr. Hanna for passenger ships of a one-class type, that is, a passenger ship of 15,000 gross tons, with speed of 18 knots and carrying both passengers and freight, the government has under consideration the building of such a type of steel ship. The government has no intention of ordering one outside of Canada, but it is the government's intention to have these passenger ships built in this country by our Canadian workmen and to use Canadian materials.

"If ever the time comes—and I do not know what the government's naval policy will be, as this is a matter that has not yet been discussed by the government—that Canada finds it necessary to build ships of war in this country, I am satisfied that Canadian shipbuilders will be able to build any war craft that may be required by this country.

"The shipbuilders waited upon the government this week at Ottawa, asking in their modest way for a certain amount of protection of the shipbuilding industry. The matter will receive the consideration that it deserves at the hands of the government. I do not know what action the government may take, but I want to assure the shipbuilders here tonight that their representations will receive the most careful consideration of the government, and I hope before parliament meets that they will know whether or not they are going to get aid from the government. Their requests appear reasonable in view of the fact that there is no protection of any kind whatsoever on ships coming into Canada. Other industries in this country have received a certain amount of protection for a great many years, and in that way the country has been able to build up very large industries from one end of Canada to the other. If the government is able to see its way clear to assist shipbuilders in any way, I look forward to a very great expansion of the shipbuilding industry in Canada. I believe that a large number of the biggest shipbuilders in England will likely come to Canada to erect plants. I had

Steamship Canadian Rancher (left), and Canadian Settler (right), each approximately 5,100 d.w. tons, for Canadian Government Merchant Marine Ltd., built by Tidewater Shipbuilders Ltd., Three Rivers, Que. From photograph taken Nov. 25, 1919.

interviews with many of them when I was in England in 1918.

"You are aware that, as a result of our shipbuilding programme, the Dominion Steel Corporation was given a very large contract for ship plates. We want business, and as it is necessary to be as self-contained as possible, the government thought it well to enter into the large contract it did with the Dominion Steel Corporation. That corporation has erected a large mill at Sydney, N.S., at a cost of $5,000,000. It is a very modern mill, and it hopes to turn out ship plates at the end of February."

**The Minister of Railways and Canals' Speech.**

Hon. J. D. Reid said:—"I can remember well the ships that passed through Welland and St. Lawrence Canals in the earlier days. They were probably of about 1,000 or 1,200 tons. They ran between Port Arthur and Montreal, and between Chicago and Montreal. We used to think they were great vessels. However, a short time afterwards public opinion, and the marine men themselves, decided that ships of that type were useless, that they would have to build larger ones and on the advice of the marine men submitting the class of ship that was required—the large ships that were required to travel between Port Arthur and Montreal, and do work on the Great Lakes—plans were made by the government to provide a water-way between Port Arthur and Montreal, and it was decided to enlarge the Welland Canal.

"It is historical—it is in the records of the Honuse of Commons and in the department over which I preside—that the Chief Engineer of the department at that time, Mr. Page, who was a very able man, decided that in enlarging the Welland Canal, it would be 50 years before it would be found necessary to enlarge it again. Now, let me tell you this, because perhaps it is a secret that has been kept, but is not any longer necessary to keep. When the government decided to proceed with the enlargement of the Welland Canal, we never let it be known, at least, we could not emphasize the fact, we took the ground that it was intended to bring the ships from Port Arthur to Kingston, but we always had in mind that as soon as we got them to Kingston we could then start and enlarge the St. Lawrence so that we could take them through to Montreal. If it had not been for the five long years of war, you would be bringing your seven, or eight, or ten thousand ton ships to Kingston, but, not only that, the scheme between Prescott and Montreal would be under way with a view of canalizing the St. Lawrence River.

"When the government decided that it was going to enlarge your canals, it was realized that to make a good, perfect, complete highway for the vessels there must be terminal facilities of a good character. The government of the day looked around for a man to get the proper facilities for the port of Montreal, and I want to say here (and I am saying it as sincerely as any man can), that if you had not got a man with the backbone and public spirit of Mr. Ballantyne, you would not have the terminal facilities in Montreal that you have. The very fact of Montreal getting such splendid terminal facilities, which were necessary for the men that are operating vessels, Halifax and St. John demanded the same, and the government was compelled to do for them what they did for Montreal, and therefore we have, not only at Montreal, but at Halifax and St. John, practically as good terminal facilities as any ports on the Atlantic. Up at the head of the Great Lakes the same thing had to be done because it was necessary.

"We had in Canada, prior to the war, in 1913, 1,200,000 registered tonnage. I know that a good many Canadian registered vessels were lost during the war, many more probably than is generally realized, and, on this account, the latest figures might have been expected to show a decrease. But I was agreeably surprised to see by the Marine Department's report that instead of 1,200,000 tons, we have increased our tonnage to 1,475,000 or 250,000 tons more than we ever had. When we come to the end of the present year we will probably have made that nearly 2,000,000, and it is gratifying to know that today we stand eighth among the largest ship owning countries of the world, and at the end of this year it is believed that we will be fifth in that class.

"It is very gratifying to me to know that in our inland waters, years ago when I first entered parliament, about 1,200 tons was the largest vessel that we had in Canada, and today we have on the upper lakes vessels of 12,000 tonnage, and we are able to use them at a profit.

"Railways, of course, must work with the marine. The railways could not operate successfully unless they had with them the marine, that is, they must have vessels inland carrying traffic to and from the railways, and they must have vessels at Atlantic and Pacific ports carrying traffic to and from our country. You all know that the government is now a large owner of railway systems in Canada. When I first entered parliament there were 16,000 miles of railway in Canada. Today we have at least 40,000 miles, and of that 16,000 miles are controlled and operated by the Dominion Government, and within a very short time we expect to take over the Grand Trunk, when we will have 22,000 miles, so that we have a great railway system in Canada.

"With that then, there is of course, the Canadian Pacific, the two great systems that practically own all of the railways in Canada, and let me say that while we have two systems, it is the governments duty to see that no injustice or unfair advantage is taken of our great C.P.R. because we happen to own the other half of the railways. In other words, the management of the Canadian National Rys. under instructions from the government, communicated through me is operating the government lines as a private railway, and it must go out in the open market and compete with the C.P.R. on fair and just and equal privileges, and in that way it must be made a success. I want to be in a position, if I can, before I pass away from this life, to be able to say that I can get on the government railway system, to go to Vancouver and get on a Canadian owned, built and controlled steamship, built in Canada of Canadian products, by Canadian workmen, and travel right around the world on Canadian property.

"Mr. Ballantyne has also referred to our great industry down by the sea, the Dominion Iron and Steel. Iron and steel is the basic industry of this country. That is a great plant, but we have one nearly as large in Ontario, the Algoma Steel Corporation, and we have other similar industries—iron products, out in British Columbia, but we have more than that—we have in Canada natural resources of every kind and nature that will build up this country and with immigration, we will be in a position to develop this country and make it equal to any country on the face of the earth."

**Steel cargo steamship, Canadian Planter; approximately 8,100 d.w. tons; for Canadian Government Merchant Marine Ltd.; built by Canadian Vickers Ltd., Montreal.**

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**The Toronto Harbor Commissioners** sold recently, $2,000,000 of 4½% bonds, guaranteed by the city and due in 1953, to Wood, Gundy & Co., at 80.687.

# General Shipbuilding Matters Throughout Canada.

British Columbia Marine Railway Ltd., Vancouver, B.C., launched a steamship Dec. 30, 1919, for the Union Steamship Co. of British Columbia, which was christened Capilano, by Mrs. E. H. Beazley, wife of the owning company's General Manager. The Capilano is 145 ft. long with capacity for about 350 passengers, and it is intended to operate her in the summer excursion traffic. This is the first vessel built by British Columbia Marine Railway Ltd., and it is stated that arrangements are being made by the company for building large vessels.

British Columbia Shipyards—A Vancouver press dispatch of Dec. 31, stated that the total of steel and wooden ships launche dat British Columbia yards during 1919, was 10 steel and 46 wood, 170,000 d.w. tons. This is stated to be 14,900 d.w. tons more than in 1918. The yards are also stated to have orders for 65,600 d.w. tons, most of which is well on the way to completion.

Canada Steamship Lines Ltd. is reported to be contemplating building an excursion passenger steamship of somewhat novel design, for its Toronto-Lewiston-Queenston service. It is said that the ship will embody a number of new features, such as terraced decks, moving picture theatre, children's playground, dancing pavilion, etc. In addition to this, it is said that the lifeboats will be recessed into the sides of the ship, that the construction will be fireproof, and that the ship will have a speed of 18 knots an hour. No official information is yet available, but it appears probable that such a ship will be built if a satisfactory contract as to price can be secured.

Steel cargo steamship, Canadian Spinner; approximately 8,350 d.w. tons; for Canadian Government Merchant Marine Ltd.; built by Canadian Vickers Ltd., Montreal.

Canadian Concrete Shipbuilding Co., North Sydney, N.S., is reported to have been organized to undertake the building of concrete ships, and to take over the yard operated for this purpose at North Sydney, N.S., by W. N. MacDonald, who is President of the new company. The concrete ship Permanencia, under construction there, information concerning which was given in our January issue, also being taken over. It was expected that she would be launched at the end of December, but owing to a fire on board, which destroyed all the wood work which encased the interior of the vessel, this had to be abandoned, and it was not expected that she would be launched until the end of January or early in February. The damage caused by fire was estimated at $15,000.

The Collingwood Shipbuilding Co.'s stock advanced in the unlisted section in Toronto in January from 65 to 75 bid and none offering, and 95 was bid for its bonds. The Toronto Globe says: "Brokers are at a loss to explain the sudden activity, and two theories were advanced. One was new orders received by the company and the other alleged negotiations by which the company would join up with Dominion Steel and other corporations in a great merger. Collingwood Shipbuilding has issued stock of about $1,880,000, out of $2,500,000 authorized. It has plants at Collingwood and Kingston. There is very little of the stock available, and the bonds to be had are said to have been about all picked up in the last few days."

J. Coughlan & Sons, Ltd., has been incorporated under the British Columbia Companies Act, with $5,000,000 authorized capital, and office at Vancouver, B.C., to take over the stock in trade, plant, contracts, etc., of J. Coughlan & Sons, and to carry on the business of shipbuilding in all its branches, to build, own and operate drydocks, marine railways, etc., and conduct any other business incidental to shipbuilding.

Jos. Crane, New Westminster, B.C.—The New Westminster, B.C., City Council, on Jan. 12, received an application from Jos. Crane for the lease of a portion of the Indian reserve, bordering on the water front, for shipbuilding purposes. The applicant stated that he is building a large barge and scows on his present location, but there is shortage of room, and he is unable to build heavier vessels, owing to the presence of a bar in the vicinity which makes it impossible to launch anything but flat bottom boats. He is planning to build a 700 ton auxiliary schooner, about 200 ft. long. The council decided to lease him a 100 ft. water front lot at $150 a year, which will be reduced to $100 a year, when other property in the vicinity is taken up. It is the council's desire to foster boat building along the water front.

Davie Shipbuilding & Repairing Co., Lauzon, Que., resumed work Jan. 7, after a few days shut down, during which some financial reorganization was carried through.

Dominion Shipbuilding Co., Toronto, launched its tenth steel steamship, Jan. 17, which was named Torontonian, the christening being performed by Mrs. C. F. Easson. The ship is of the single deck type, with poop, bridge and forecastle, steel texas on bridge, wing deck houses, with chart room and pilot house above, and the hull is built on the transverse system. There are 3 decks, main, bridge and boat, arranged on the 3 island plan, and there are 4 cargo hatches, each 22 x 18 ft. She is schooner rigged, with 2 pole masts, and the hull is divided into compartments by 4 water tight bulkheads and 1 screen bulkhead. There are 2 holds, with grain capacity of 151,466 cu. ft. The dimensions are: length, overall, 261 ft.; breadth, moulded, 43½ ft.; depth, moulded, 28 ft. 2 in.; d.w. capacity 4,300 tons. She is to be classed 100 A1 at Lloyd's for ocean service. The propelling machinery which is placed amidships, consists of a triple expansion inverted engine, with cylinders 20, 33 and 54 in. diar. by 40 in. stroke, 1,300 i.h.p., at 87.5 r.p.m., supplied with steam by 2 Scotch boilers, each 14½ ft. diar. by 11 ft. long at 180 lb. under forced draft, built by John Inglis Co., Toronto. The heating surface is 2,730 sq. ft. in each boiler, and there will be an approximate consumption of 20 1-10 tons of coal per 24 hr., with a speed of 10.2 knots an hour. The bunkers are arranged to carry 526.75 tons of coal. The propeller is 13¼ ft. diar., of cast iron, with 4 blades 12 ft. 8 in. pitch. Accommodation for 35 officers and men is arranged on the bridge and in the poop. The ship is to be equipped with steam steering gear 7 x 7 in., 8 reversible single drum, 2 speed, 7 x 12 in. cargo winches, and anchor windlass 8 x 8 in.

The Foundation Co., Victoria, B.C., is, according to B.C. press reports, dismantling its shipbuilding plant at Victoria on instructions from the company's head office in New York. The company has issued statistics covering its operations from Sept., 1918 to Nov., 1919, during which its contract with the French Government for the building of 20 wooden steamships of 3,000 d.w. tons capacity each, was carried through. The number of employes engaged at the

height of the work was 4,390, of which 65% were returned soldiers. The number of employes and their dependents is given as 12,655, of which 93.1% were British, 2.7% U.S., 1.6% Italian, and 2.6% other nationalities. The total pay roll was $5,263,313.39; total material bought in British Columbia, $3,733,150.43; bought in other parts of Canada, $435,097.18. The investment in the plant at Victoria is given at $616,174.57, and the total amount paid for labor and material in Canada $10,048,735.57. The total amount of the contract was approximately $11,000,000.

**Grant & Horne**, St. John, N.B.—The schooner Cutty Sark, launched at this yard recently, was built for Foster & Elkin, St. John, N.B., and has loaded number for the Canary Islands. She is 608 registered tons, and her dimensions are: keel, length, 159 ft.; beam, 36 ft.; draft, 13 ft.

**National Shipbuilding Corporation**, Three Rivers Shipyards Ltd., Division, Three Rivers, Que., has secured an order from French interests for building 6 steel cargo steamships of approximately 7,200 d.w. tons each, to be classed 100 A1 at Lloyd's, and equipped for a speed of 11 knots an hour, and also for 4 steamships of approximately 3,200 d.w. tons, to be used as, what is termed, wine boats. We are officially advised that the 6 keels for the steamships first mentioned, will be laid about Feb. 15, and deliveries made during the autumn.

**Wooden Steamship Champlain, approximately 3,000 d.w. tons, one of 20 similar ships built for the French Government, by the Foundation Co. of British Columbia Ltd.**

**New Brunswick Shipbuilding Co. Ltd.**, has been incorporated under the New Brunswick Companies Act, with $320,000 authorized capital and office at St. John, N.B., to build, own and operate steam and other ships of every description, with plant, docks, wharves, etc., incidental thereto. The incorporators are: A. F. Coughlan, J. D. P. Lewin, J. J. Stothart, St. John, N.B.

**Prince Rupert Dry Dock and Engineering Co.**, Prince Rupert, B.C., is doing considerable repair work. The Grand Trunk Pacific Coast Steamship Co.'s steamships are being overhauled in turn, and work is proceeding on two 8,100 d. w. ton steel steamships for Canadian Government Merchant Marine Ltd., of an approximate value of $3,207,600.

Application was made to the British Columbia Supreme Court, Jan. 10, on behalf of the Prince Rupert Dry Dock and Engineering Co., the Empire Ship and Dry Dock Corporation, Newman Erb, W. M. Wadden, H. B. Blanchard and I. M. Oettenhoefer, for an injunction to restrain other directors, W. E. Williams, E. Thompson, S. P. McMordie, E. C. Gibbons, F. F. Schellenberg and J. L. Mullen, from taking any part in the conduct of the company's affairs. N. Erb claims that the company was organized on his instructions, and he was elected chairman, and subsequently managing director, and that he secured the lease of the property from the Grand Trunk Pacific Ry., and also two contracts from the Dominion Government for building 2 steel steamships of approximately 8,100 d.w. tons each, at an approximate cost of $3,207,600. He further alleges that the defendant directors usurped control of the plant, elected a new board of directors, increased the capital stock, and seriously disorganized the company's business, forfeited the Dominion Government's confidence owing to being behind with the contracts, and risked the cancellation of the lease of the property to the company. On the evidence submitted an interim injunction was granted for a few days pending further argument.

**St. Martins Shipbuilding Co., Ltd.**, has been incorporated under the New Brunswick Companies Act, with $240,000 authorized capital and office at St. John, N.B., to build, own, and operate ships of every description with the plant, docks, wharves, etc., incidental thereto. The incorporators are: A. F. Coughlan, J. D. P. Lewin, J. J. Stothart, St. John, N.B.

**Wallace Shipyards Ltd.**, North Vancouver, B.C.—The steamship which this company is building for the Union Steamship Co. of British Columbia will be of the following dimensions: length, 173 ft.; breadth, 30 ft.; depth, 14 ft., and she will have a deadweight carrying capacity of approximately 700 tons. She will be of the single deck, single screw, cargo type, equipped with triple expansion reciprocating engine of about 700 i.h.p., located aft, steam windlass, 4 winches, 4 derrick booms, 5 tons capacity each, one 20 ton derrick, and steam and hand steering gear. The accommodation for the master, engineers, and crew, will be arranged on the poop deck. The keel was laid in Dec., 1919, and we are advised that it is expected the ship will be launched about the first week in February and delivery will probably be made about Mar. 1.

## British Columbia Coast Pilots and the New Pilotage Regulations.

The order in council reorganizing the British Columbia pilotage authorities, and the new pilotage regulations providing revised pilotage dues, etc., which were published in Canadian Railway and Marine World for January, became effective Jan. 1. These regulations are applicable to the former pilotage districts of Vancouver, Nanaimo and Victoria-Esquimalt, which have been abolished, and have been established as the Pilotage District of British Columbia, in charge of Commander B. L. Johnston, D.S.O., as Superintendent. The pilotage district of New Westminster has not been changed, and is still under a pilotage commission.

The pilots concerned held meetings during December and submitted to the Minister of Marine a number of criticisms of the regulations, which it was claimed would reduce their earnings considerably, and not remove grievances as to certain working conditions. As a result of these meetings, they made proposals that they should continue working at the old rates, and under the old conditions, receiving all earnings, and maintaining and operating their pilotage plant and stations, out of these earnings, for six months, and also make provision for pilots over age; or, that they come under the new authority on the understanding that the minimum wage to be paid any pilot be $350 a month, that pilots over age be provided for, and that their pilotage plant be taken over at its present market value, together with the expense of operating the plant.

They claim that the new pilotage rates have been fixed below what were agreed upon many years ago, when the cost of living was considerably less than now, and that there is no definite assurance as to their remuneration. Though no threat was made by the pilots, local reports indicate that there was a strong probability they would cease operating under the government and offer their services as independent pilots.

The Vancouver Board of Trade, on Jan. 2, adopted a recommendation for submission to the Dominion Government, that the minimum paid to pilots be $250 a month, with a maximum of $350 a month. At a joint meeting of interested local boards, Jan. 7, a series of proposals was adopted for submission to the Dominion Government, with the view of terminating the dispute, and fixing the pay and working conditions of the pilots, and in the meantime it was announced, that an arrangement made is being continued for two months, whereby the pilots are working on a fixed salary of $325 a month, and that at the end of that period the situation will be reviewed.

**Pulpwood Terminal** at Clayton, N.Y.—The Taggarts Paper Co., Watertown, N.Y., has, according to a press report, bought 100 acres on the water front at Clayton, N.Y., opposite Gananoque, Ont., for a terminal for the reception of pulpwood from Canada.

**Clyde Shipbuilding**—It is stated that about 650,000 tons, were launched on the approximately 400 ships, with a total of Clyde River in Scotland in 1919, the output almost reaching the record for Clyde shipbuilding.

The Kennebecacis Steamship Co.'s s.s. Hampton, is having her sides rebuilt, and other repair work done at Hampton, N. B.

# Dominion Government Aid for British Columbia Wooden Shipbuilding.

During a visit of the Finance Minister, Sir Henry Drayton, to British Columbia in Nov., 1919, various plans were laid before him, with the view of obtaining assistance from the Dominion Government for wooden shipbuilding in the province, chiefly to meet the unemployment situation there, which since demobilization has become rather serious. One of the schemes submitted was by J. O. Cameron, President, Cameron Lumber Co., and who was at one time interested in Cameron-Genoa Mills Shipbuilders, Ltd., which built a number of auxiliary powered schooners for Canada West Coast Navigation Co. Ltd., the plant being sold subsequently to the Foundation Co. of British Columbia Ltd., Mr. Cameron proposed to build several auxiliary powered schooners under a series of loans to be made by the Dominion Government, and for which purpose the Foundation Co.'s plant would be leased if terms could be arranged. Another scheme proposed was by interests associated with the Cholberg Ship Co., Victoria, and it was proposed to form a company of local citizens to undertake the building of 4 wooden schooners, similar to those built recently at that yard for Norwegian interests, at an approximate cost of $250,000 each, the government to finance the project up to $175,000, the local company undertaking the balance. On his return to Ottawa, Sir Henry Drayton, laid the matter before other members of the government with the result that an order in council has been passed as follows:—

The Committee of the Privy Council have had before them a report, dated Dec. 20, 1919, from the Finance Minister, representing as follows: From reports of the Labor Department it appears that much unemployment exists at present in Victoria, B.C., owing to the fact that the extensive shipbuilding business heretofore carried on there has now practically ceased and that approximately 5,000 men are out of employment. It has been shown that a large number of returned soldiers have received their discharge on Vancouver Island, who were not enlisted there and that the number of returned soldiers now in British Columbia in excess of the enrolment from B.C. is estimated at about 12,000 and that a very large number of those unemployed in Victoria are returned soldiers, the estimate made by the returned soldiers' representative showing the number of unemployed returned soldiers to be about 4,000.

In order to relieve the unemployment situation Victoria citizens propose to form themselves into a joint stock company to build 4 wooden sailing ships (barkentine rig) each with a cargo capacity of 2,400 tons deadweight, or 1,500,000 ft. board measure fir lumber, the estimated cost of each being $250,000. It is proposed that these ships be built in the Cholberg shipyard in Victoria. The citizens' association, represented by Clarence Hoard, have put themselves in a position to be able to advance on account of construction cost of each vessel in cash or in the delivery of materials $75,000. If any portion of this cost be represented by the delivery of lumber, when required for the construction of such vessels, prices shall not exceed f.o.b. cars Victoria the following:

| | |
|---|---|
| Framing grade | $28 per M |
| Merchantable | $30 per M |
| Planking | $50 per M |
| Ships decking | $65 per M |

Additions as per standard fir timber list 2, B.C. average length 30 ft.

Payment in other materials necessary for boat construction shall only be allowed at prices which shall not exceed the lowest price as ascertained by competitive bids, and no credit shall be given until such material has been delivered in the yard and there received and accepted in good condition. It is proposed, in order to render work available for the unemployed returned soldiers, that the government shall advance the balance required to complete each ship to a sum not exceeding $175,000, and that this advance shall be secured by a first mortgage on each ship bearing interest at the rate of 6%. Interest on the government advance at the rate of 6% shall first be paid, and the owners shall then have the right to take out of the operating revenues enjoyed by each ship $4,500. The balance of the net earnings shall be paid on account of the government advance, and interest on the mortgage chargeable from thenceforth only on the sum then left due. Employment is to be given, to the fullest extent practicable, to returned soldiers with a minimum stipulation that at least 60% of the whole number of men employed shall be returned soldiers. Men are to be employed through the Dominion representative in the B.C. Government Employment Agency, and just so soon as it is possible for the work to be sufficiently advanced, men to the extent of 235 shall be employed in the construction of each ship.

The Minister recommends that to carry out the proposal above set forth he be authorized to advance $175,000 for each of the 4 ships, or $700,000 in all, and that such advances be defrayed from the funds provided by the Demobilization Appropriation Act, 1919, provided that no advances shall be made under this order in council until an agreement has been entered into by the company, when incorporated, with the government, in form and terms satisfactory to the government. The Privy Council Committee concurred in the report and it was approved.

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Canada Steamship Lines' s.s. Sir Trevor Dawson is moored at Buffalo, N.Y., for the winter, with a storage cargo of grain.

## Marine Railway Operator for Trent Canal.

The Civil Service Commission advertised, Dec. 24, 1919, a competition, open to all residents of Canada, for the following position: — A marine railway operator, Railways and Canals Department, at Swift Rapids on the Trent Canal, at an initial salary of $1,080 a year, which will be increased on recommendation for efficient service at the rate of $60 a year, until a miximum of $1,200 has been reached. This initial salary is supplemented during the present fiscal year by the following bonus: If head of a household (irrespective of age) $420 a year. If not the head of a household, $192 a year if over 21 years of age; $150 if between 18 and 21 years of age; no bonus if below 18. Candidates must have had primary school education; some knowledge of the operation of gasoline launches, and of the installation, maintenance, and operation of electric motors. Candidates must be of good physical condition, and should preferably be not more than 40 years of age. The successful candidate will be required to operate and maintain in good working condition all apparatus in connection with the marine railway at Swift Rapids and to read and record water gauges. Candidates will be examined in the following subjects, which have the relative weights indicated: Education, training and experience, 300; oral interview, if necessary in the commission's opinion, 100. Preference will be given to residents of Ontario.

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**Atlantic Passenger Rates**—The chief steamship companies operating across the Atlantic from New York, have announced reductions in passenger rates, dating approximately from Feb. 11. The 1st class minimum rate to Hamburg has been reduced from $225 to $175, the 3rd class rates charged by the White Star Line and Dominion Lines from Portland to European points via Liverpool, have been reduced by $10, and a similar reduction has been made by the White Star Line running out of New York.

**Havana Marine Terminals, Ltd.**, has been incorporated under the Dominion Companies Act, with $30,000,000 authorized capital, and office at Montreal, to own and deal in real estate, and to carry on business as wharfingers, warehousesmen, forwarders, etc., and in connection therewith to own and operate ships and other transportation facilities. The incorporators are: G. W. MacDougall, K.C., G. Barkley, A. Knatchbull-Hugessen, J. G. Cartwright and E. Tudor, all of Montreal.

## Vessels Added to and Deducted From the Canadian Register During November, 1919.

| | Steam. | | | Sailing. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| Added. | No. | Gross. | Registered. | No. | Gross. | Registered |
| Built in Canada | 8 | 8,993 | 5,267 | 21 | 4,956 | 4,583 |
| Purchased from foreigners | 2 | 1,937 | 1,164 | 1 | 42 | 42 |
| Transferred from United Kingdom | 7 | 11,395 | 7,220 | — | — | — |
| New registers | 1 | 75 | 12 | — | — | — |
| Tonnage alterations without reregistry | — | — | 15 | — | 22 | 86 |
| Totals | 18 | 22,400 | 13,678 | 22 | 5,020 | 4,711 |
| Deducted. | | | | | | |
| Wrecked or otherwise lost | 5 | 1,077 | 728 | 14 | 925 | 799 |
| Broken up or unfit for use | 54 | 1,612 | 1,027 | 35 | 1,381 | 1,365 |
| Sold to foreigners | — | — | — | 3 | 986 | 896 |
| Transferred to United Kingdom | 1 | 1,422 | 810 | — | — | — |
| Transferred to British possessions | — | — | — | 2 | 587 | 503 |
| New registers | 1 | 53 | 37 | 5 | 220 | 185 |
| Tonnage alterations, without reregistry | — | 12 | — | — | 43 | — |
| Totals | 61 | 4,176 | 2,602 | 59 | 4,142 | 3,748 |

# The 10,500-Ton Steel Cargo Steamships for Canadian Government Merchant Marine, Ltd.

As announced in Canadian Railway and Marine World at the time, the Marine Department gave contracts to Halifax Shipyards, Ltd., Halifax, N.S., on Dec. 10, 1918, for 2 steel cargo steamships of approximately 10,500 d.w. tons each to be operated by Canadian Government Merchant Marine Ltd. The keels for them were laid as follows:—S.s. Canadian Mariner; Marine Department contract 21; builder's yard no. 1; Feb. 24, 1919, and s.s. Canadian Explorer; Marine Department contract 22; builder's yard no. 2; Mar. 15, 1919. It is expected that the first ship will be delivered before the end of this year. Their principal dimensions, etc., are as follows:—

| | |
|---|---|
| Length between perpendiculars | 430 ft. |
| Breadth moulded | 56 ft. |
| Depth moulded | 30 ft., 38 ft. |
| Sheer forward | 7 ft. |
| Sheer aft | 3 ft. |
| Lowest point of sheer | Amidships |
| Draft mean | 28 ft. 11¾ in. |
| Deadweight, in long tons, about | 10,500 |
| Speed loaded on 6 hours trial | 11 knots |
| Complement, officers and men, about | 63 |

These ships are of the shelter 2 deck type, having shelter, main and lower decks of steel, the shelter deck being surmounted by a forecastle deck forward, 45 ft. long, and a poop deck aft, 45 ft. long. They are being built to Lloyd's 100 A1 class and will have 8 w.t. transverse bulkheads, and a double bottom extending from peak bulkhead forward to peak bulkhead aft, dividing the ship into 24 w.t. compartments. A deep tank is provided abaft of the engine room. The frames and beams are of heavy bulb angle section, and the various decks are strongly supported by tubular pillars.

The cargo working arrangements are very complete. There are 4 hatchways, each about 30 x 18 ft. and 2 hatchways, each about 15 x 18 ft. commanded in all by 20 five ton derricks. The derricks will be operated by twenty 7 x 12 in. winches, of the Clarke Chapman type. In addition no. 2 hold is provided with a 30 ton derrick for heavy weights, such as machinery. The usual steam windlass forward is provided.

The steering engine is of the Wilson Pirrie type, 10 in. diameter by 10 in. stroke, direct connected to the rudder head. The ship will be electrically lighted throughout, being provided with duplicate sets of generating machinery, running in parallel 110 voltage. Two masts are provided, one forward and one aft, carrying the wireless aerials, the wireless set being of 1½ k.w. capacity.

Each ship will be provided with the following life saving equipment: 2 lifeboats, 28 x 8½ x 3½ ft.; 2 lifeboats 22 ft. x 6¾ ft. x 2 ft. 10 in.; 2 working boats, 18 x 5½ x 2½ ft. All other parts of the livesaving equipment will be in accordance with the British Board of Trade and Canadian Steamship Inspection requirements. The anchor and cable equipment will be in accordance with Lloyds as follows: 2 bowers, stockless, 72½ cwt.; 1 spare, stockless, 72½ cwt.; 1 stream, ex-stock, 20½ cwt.; 1 kedge, ex-stock, 9 cwt., and 300 fathoms 2 6-16 stud link cable, with the usual steel wire and malleable hawsers, warps and towlines.

The accommodation for the officers and crew will be very complete. The engineers' cabins are placed in an island deckhouse on the shelter deck, about amidships, containing cabins, dining saloon, lavatories, pantry, etc. The navigating o....cers will be in a deckhouse over on the lower bridge, and the captain's quarters comprising day cabin, sleeping cabin, office and lavatories, will be placed on the upper bridge, which will be surmounted by the chart room and wheel house on the flying bridge. The crew will be located aft, under the poop and shelter deck. A total complement of 63 officers and men is provided for. Forward under the forecastle deck will be the hospital, carpenter shop, paint store, oil room and boatswain's store. Steam heating at 20 lb. pressure will be supplied to all living quarters.

Cold chambers for the preservation of the ships' provisions will be abreast of the engine casing, on the main deck, and will have a total capacity of about 1,000 cu. ft. The refrigerating engine will be on the Clothel principle, capable of maintaining a temperature of 28° in tropical climates.

The propelling machinery will consist of one set of inverted vertical direct acting surface condensing engines of the following leading particulars:—

29½ x 50 x 80 in.

54 in.

Steam will be generated in 4 single ended boilers working under Howden's system of forced draft and having a working pressure of 180 lb. per sq. in. The heating surface will be about 10,500 sq. ft. and the grate area 270 sq. ft.

The air and bilge pumps will be direct connected to the main engine. One pair of Weir's feed pumps will be provided, each capable of supporting the boilers at full power. The other auxiliaries will comprise general service pump, ballast pump, sanitary pump, evaporator, distiller, feed filter, feed heater, auxiliary condenser, ash hoist and turning engine.

There will be one funnel of double section, and the usual ventilation to the engine and boiler rooms.

These ships, which have been designed by the Naval Constructor of the Marine Department, for bulk, general and refrigerated cardgoes, will be capable of a speed of 12 knots under load conditions.

## Winter Moorings of Canadian Steamships.

Following are Canadian steamships and the ports at which they have been berthed for the winter, in addition to those given in Canadian Railway and Marine World for January:—

Canada Steamship Lines Ltd., Montreal—Steamships, Lucia, S. H. Dunn, Port Colborne, Ont.; Ionic, Kingston, Ont.; Sarnor, Sorel, Que.

Keystone Transportation Co., Montreal—Steamships Keybell, Keynor, Keyport, Keywest, Grand Trunk dock, Kingston, Ont.

St. John Steamship Co., St. John, N.B. —Steamship Glenholm, Annapolis, N.S.

A record for speed was achieved by the British torpedo boat destroyer Tyrian on her recent deep water trials, when she attained 45 miles an hour on a 4 hour trip.

## Sorel Government Shipyards Superintendency.

Canadian Railway & Marine World for Dec., 1919, gave particulars of notice issued by the Civil Service Commission inviting applications to be sent in by Nov. 24, 1919, by residents of the Province of Quebec only, for the position of Shipyard Superintendent, for the government shipyard at Sorel, Que., at an initial salary of $3,000 a year. Apparently no satisfactory applications were received, as on Dec. 24, another notice was issued inviting applications for the position and stating that the competition was open to all residents of Canada, as follows:—A shipyard superintendent for the Government shipyard at Sorel, Que., Marine Department, at an initial salary of $3,000 a year, which will be increased on recommendation for efficient service at the rate of $180 a year until a maximum of $3,540 has been reached. Candidates must have education equivalent to graduation in engineering from a school of applied science of recognized standing; at least five years of experience in ship design and construction, two years of which shall have been in responsible charge of such work; thorough knowledge of various types of ships and ship machinery and the construction and repair thereof; firmness, tact, good judgment, and ability to manage men; preferably a knowledge of both French and English. No special age limit is fixed for this position, but the appointee must be of such an age as to ensure a reasonable period of satisfactory service after appointment. The successful candidate will be required to perform the following duties: under direction to have charge of the Sorel shipyard; to be responsible for the design, estimate, construction and repair of ships; to supervise the buying and safekeeping of stores and stock and the work of all employes; and to perform other related work as required. An examination will be held in education and experience along the lines indicated above. An oral examination of the best qualified candidates will be held, if necessary in the commission's opinion. This position was advertised Nov. 6, 1919, and is now readvertised.

As stated in Canadian Railway & Marine World for Dec., 1919, the vacancy was caused by the resignation of W. S. Jackson, who was appointed Superintendent, May 12, 1919. F. A. Willsher, Assistant Naval Constructor, Marine Department, Ottawa, has been acting as Superintendent since Mr. Jackson's resignation.

**Shipbuilding and Naval Architecture** Instruction — Brigadier General C. H. Mitchell, C.B., C.M.G., D.S.O., Dean of Applied Science and Engineering Faculty, Toronto University, in his recent inaugural address, said, among other things:—"The subject of shipbuilding and naval architecture, which appear to be now in some demand, especially with the revival of Canadian shipping on the Great Lakes, and the development of the harbor works at Toronto and elsewhere, are being kept in view."

**The Canadian Brotherhood of Lighthouse Keepers' Association**, New Brunswick branch, was organized at St. John, N.B., Jan. 18. The officers are: J. E. Collins, Cape Spencer, President; K. McClellan, Port Esquimalt, Vice President; F. Fauley, Port Lepreaux, Secretary.

# The Marine Department's Annual Report.

The Marine Department's report for the year ended Mar. 31, 1919, was issued in Dec., 1919. Following are extracts from the report of the Deputy Minister, A. Johnston:

At the beginning of the last fiscal year the German submarine menace had reached its maximum, a toll of approximately 1,000,000 d.w. tons of allied and neutral shipping having been taken in April alone; after that, losses in ships due to war causes steadily declined.

It was surmised in last year's report that the United States output of ships during 1918 would in all probability be a powerful factor in the defeat of the submarine; this has now been clearly shown. The U.S. production of ships during 1918 has been remarkable, particularly when it is remembered that prior to her entry into the war the U.S. was not to any extent a shipbuilding nation, and had to establish yards before turning out ships.

The submarine peril, though much lessened, was far from removed despite all contributions to new shipping. Archibald Hurd, Naval Correspondent of the Daily Telegraph, gives the following figures illustrating this. During April, May and June, 1918, total shipping losses, allied and neutral, were 946,578 gross tons, compared with 2,236,934 gross tons for the same period in 1917. This average loss of approximately 1,000,000 tons to a quarter, and a trifle over 300,000 tons a month was grave enough, though the losses in the course of a year had been more than cut in half. British losses due to enemy action and marine risk from April 1 to the end of July, 1918, were 1,312,315 gross tons; British vessels built and put afloat in the same period 763,246 tons, a decrease in British shipping during the first four months of the fiscal year 1918-19 of 549,069 gross tons.

### Merchant Ship Losses and Building.

From Aug., 1914, to the signing of the armistice, Nov. 11, 1918, the total yearly losses suffered by the allied and neutral nations are given by the New York Journal of Commerce as follows:

| | | |
|---|---|---|
| 1914 (5 months) | 681,363 | gross tons |
| 1915 | 1,724,720 | " |
| 1916 | 2,797,866 | " |
| 1917 | 6,623,623 | " |
| 1918 | 3,096,418 | " |
| Total | 14,923,990 | " |

Following is a comparison of allied and neutral ship deliveries and losses for 1918 in gross tons:

| | |
|---|---|
| Deliveries | 3,790,730 |
| Losses | 3,096,418 |
| Gain | 694,312 |

For each of the first four months in 1918 ship losses exceeded ship building the margin of losses, however, decreasing, and especially in March, falling quite sharply. From May to November in each month the building topped the losses, and in the last completed month of the war, October, by nearly 500,000 tons, thus indicating clearly the progressive increase of building over losses during the year.

The proportional losses in 1918 were as follows in gross tons:

| | |
|---|---|
| Britain | 1,922,599 |
| United States | 110,239 |
| Other allies and neutrals | 1,064,139 |

This shows that the British losses nearly doubled those of the other allies and neutrals combined.

The proportionate yearly British and other allied and neutral losses during the war were as follows in gross tons:—

| | |
|---|---|
| Britain | 9,031,828 |
| Other allies and neutrals | 6,021,958 |
| Total | 15,053,786 |

The losses in 1918, although slightly less than half those in 1917, were still greater than the losses in any war year preceding 1917, showing that German submarine operations were a grave danger up to the end.

The British shipping loss of 9,000,000 tons comprised roughly (on the authority of Prof. W. S. Abell, Chief Surveyor of Lloyds) 2,000 vessels, 500 liners and 1,500 tramps; the toll of lives among British merchant seamen was 15,000.

The losses sustained by the different allied and neutral countries during the war, as given by Archibald Hurd in the Daily Telegraph were, in gross tons, as follows:

| | |
|---|---|
| United Kingdom and dominions | 9,055,668 |
| United States | 501,038 |
| Belgium | 105,081 |
| Brazil | 31,279 |
| Denmark | 245,302 |
| Holland | 229,041 |
| France | 807,077 |
| Greece | 414,675 |
| Italy | 861,435 |
| Japan | 270,033 |
| Norway | 1,171,760 |
| Spain | 237,862 |
| Sweden | 264,001 |
| Total | 14,194,252 |

This total is slightly less than that given by the New York Journal of Commerce already quoted. The losses of the allied and neutral nations, apart from Great Britain, are put by Mr. Hurd at 5,138,584, Great Britain's losses being nearly double those of all the other given nations combined, 17 times those of the United States, and 10 times those of either France or Italy.

In 1915, allied and neutral losses exceeded building by 522,720 gross tons, in 1916 by 1,109,858, in 1917 by 3,686,837, but in 1918, owing to the 1917 losses being cut in half and to increased building activity, especially by U.S., the building surpassed the losses by 810,421 gross tons; 1914 being the only other similar war year, when the margin of safety was 303,733 gross tons.

British merchant shipping decreased during the war by 4,689,530 gross tons, that of the other allies and neutrals remaining almost stationary, with a small balance of 485,273 gross tons in favor of building over losses.

The total decrease of allied and neutral shipping during the war was 4,204,259 gross tons; this is serious enough, but worse is behind; taking Lloyd's figures, the gross steam merchant tonnage of the allied and neutral powers in 1914 was roughly 39,000,000, at the normal yearly peace increment increase of 5% this tonnage ought, in four years time, to have reached an additional 8,000,000; the real shortage of shipping for these nations to meet their peace requirements is therefore 12,000,000 tons, and the demands on sea transport after the war are bound to be excessive; this situation is somewhat relieved by the confiscation of 2,392,675 gross tons of enemy vessels in neutral ports, provided, of course, that these remain confiscated.

Britain was particularly hard hit; taking 20,000,000 as her gross tonnage in 1914 and applying the 5% principle, it will be found that the shortage amounts to about 9,000,000 gross tons for her ordinary needs, and her needs for a considerable period after the war will be the reverse of ordinary.

### Shipbuilding.

For the quarter ended Dec. 31, 1918, there were being built in Great Britain 424 steam and sail merchant ships, gross tonnage 1,979,952. Between one-third and one-half of the total number of steamships under construction in Great Britain for the quarter ended Dec. 31, 1918, were in the 5,000 to 6,000 gross ton class, or, put in deadweight tons, 7,500 to 9,000. In last year's report it was stated that the class of vessel giving the best return on outlay is one ranging between 7,000 and 10,000 tons deadweight capacity; the British programme gives practical support to this theory.

What is of peculiar interest to the Empire and to Canada, is a comparison between the returns for Britain and the dominions, and those for the United States, and the position taken by Canada herself among the other nations. The number of ships under construction in Britain and the Dominions was 619, total gross tonnage 2,258,663, in the United States 997, total gross tonnage 3,645,919 It can be readily judged what sort of part the United States is likely to play in the world's sea-carrying trade, and four years ago she was almost an onlooker. Comparing small things with great, the Canadian return is scarcely less remarkable.

Lloyd's statement includes returns from all the chief shipbuilding countries of the world with the exception of the Central Powers. In this company Canada's 1918 programme ranks third in the number of ships, 148 to Japan's 116; and fourth in tonnage 225,264 to Japan's 278,140; only 52,876 tons less; a notable showing in a short time, which augurs well for the future.

The French war output is only one-fifth of that for the four previous years, Britain's about one-half, Denmark and Norway show a slight increase, Italy increased her output by one-third, Holland by one-quarter. The Swedish output for 1915-18 is about double that for 1911-14, the Dominions about treble, the Japanese fourfold, and the United States fivefold; the main building increase for these three last countries taking place in 1918. The world's total output of tonnage for 1915-18 very nearly equals that for 1911-14, the difference in favor of the latter being 462,596 tons.

### Ocean Freight Rates.

The sharp fall in ocean freight rates came somewhat as a surprise. The lead was taken by such British lines as the Cunard, Furness-Withy, International Mercantile Marine group, and Canadian Pacific, after notice had been given to the Director of Operation of the U.S. Shipping Board. This action was taken on their own initiative, as the rates on free space are fixed by the lines themselves, and are not subject to the approval of the British Ministry of Shipping, with the single exception of the rate on cotton. Upon the receipt of this notice the U.S. Shipping Board promptly followed suit by declaring a rate reduction of 66% on ocean freight from U.S. to European ports borne by its ships; these reduced rates only apply to U.S. Shipping Board vessels, and not to those privately owned, but as the Shipping

Board operates at least half of the U.S. Merchant Marine, the remainder is certain to be largely affected, and on routes where both are operating in common the Shipping Board's rates are certain to obtain. Whether or not the new revision will stand for any length of time is a moot question, but in U.S. shipowning circles the prevailing opinion seems to be that an approximate minimum has been reached and that the present scale of rates is not likely to go lower, although it may in some cases be increased; in the cases, however, of a number of shippers and exporters whose opinions were solicited by the New York Journal of Commerce, the majority favored a further and more general reduction. The tendency will be to restore and extend export business, and to lower the prices of commodities generally; the trades chiefly affected are cotton, steel, copper, hides, textiles, lumber, and groceries and foodstuffs; the profits of merchant ships, whether under private or government control, will of course, be curtailed. The comparison between the old and new rates per measurement ton was thus given by the New York Journal of Commerce, the new rates going into force on Feb. 1, 1919:—

| | |
|---|---|
| America to United Kingdom | $66.00 cut to $20 |
| America to French Atlantic ports | 66.00 cut to $26 |
| America to French Mediterranean ports | 71.50 cut to $34 |

From the same source are taken the following U.S. Shipping Board rates on Webb high density cotton, present cargo space not warranting the shipment of loosely baled cotton:—

| | Per 100 lb. New | Old |
|---|---|---|
| From U.S. Atlantic ports to— | | |
| United Kingdom main ports | $1.25 | $4.50 |
| France main Atlantic ports | 1.00 | 4.75 |
| Main Mediterranean ports | 2.00 | 5.25 |
| Holland, Rotterdam | 1.50 | 4.75 |
| Belgium, Antwerp | 1.50 | 4.75 |
| Portugal, main ports | 1.50 | 4.75 |
| Spain, Barcelona | 2.00 | 5.75 |
| Italy, main ports | 2.25 | 5.50 |

Shipments from U.S. Gulf ports, 25c extra.

### Merchant Marine.

In Aug., 1917, there were in the U.S., 61 shipyards, of which 37 were steel yards, with 162 ways. In Sept., 1918, there were 203 yards, with 1,020 ways; of these yards, 77 were steel, 117 wood, 2 composite, and 7 concrete. In 1916 the U.S. yards employed 50,000 men; they now employ 386,000. At the time of the entry of the U.S. into the war her merchant marine comprised 2,750,000 d.w. tons of seagoing ships over 1,500 tons burden; in Sept., 1918 (not including vessels of 1,500 tons), it consisted of:—

| | No. | D.w. tons. |
|---|---|---|
| Requisitioned U.S. ships | 449 | 2,900,525 |
| Ex-German and ex-Austrian ships taken over | 100 | 644,713 |
| New ships owned by Shipping Board | 256 | 1,465,963 |
| Old lake steamships transferred | 31 | 117,800 |
| U.S. ships not yet requisitioned (over 1,500 tons d.w.) | 377 | 980,459 |
| Dutch steamers requisitioned | 81 | 486,945 |
| Foreign ships chartered to Shipping Board | 291 | 1,208,411 |
| Foreign ships chartered to U.S. citizens | 600 | 1,707,099 |
| Total | 2,185 | 9,511,915 |

Of this fleet, 1,294 ships, total tonnage 6,596,405, fly the U.S. flag, 891 foreign vessels, total tonnage 2,915,510, are under charter, either to the Shipping Board or to private companies.

### Australian Shipbuilding.

Following are the numbers and tonnage of ships built and registered in Australia from 1914 to 1917:

| | No. | Gross tons |
|---|---|---|
| 1914 | 55 | 3,817 |
| 1915 | 14 | 1,278 |
| 1916 | 7 | 146 |
| 1917 | 6 | 333 |
| Total | 82 | 5,574 |

Australia's output for 1918-19 was expected to be about 40,000 tons. The importance attached by Australia to the building of ships may be judged by the fact that her programme for 1918-19 is seven times her total output for the four preceding years.

### Shipping in the Future.

Sea transport after the war will, in all likelihood, be chiefly controlled by Great Britain and the dominions, the United States, Japan, and possibly Germany and Austria-Hungary. In 1914 the merchant steam tonnage of these countries, according to Lloyd's Register, was in gross tons:—

| | | |
|---|---|---|
| Great Britains and dominions | 20,523,706 | |
| Germany | 5,134,720 | |
| Austria-Hungary | 1,052,280 | 6,187,000 |
| United States | | *1,813,775 |
| Japan | | 1,078,386 |

*This is sea going tonnage only. The U.S. had besides, 3,040,973 in lake tonnage.

The total steam tonnage of the world at that time was 45,403,877, Great Britain and the dominions owning 40% of it; post war conditions, however, may tend to somewhat modify this position.

The recent shipbuilding activities of the United States and Japan, coupled with their comparative immunity from submarine losses, will have a very considerable effect on the shipping situation of the future.

Britain, during the entire course of the war, despite her heavy losses, placed her merchant tonnage unreservedly at the service of the allies; in doing so she abandoned to a greater or lesser extent some of her former trade routes; this holds true in particular of the Pacific trade, of which she controlled 40% before the war, Japan's share being 30%. British tonnage on this route has now dropped by 10%, while the Japanese has doubled, but owing to the astonishing increase of U.S. shipbuilding during the war, Japan's most formidable rival there in the future will probably be the U.S.

In 1913 the value of Britain's imports was $3,736,050,381, of her exports $3,085,200,784; the adverse balance of trade of $650,849,597 was offset in part by interest on foreign investments, but chiefly by the earnings of her merchant marine. Britain's merchant marine is literally her life-line, and its standing after the war in relation to that of other maritime nations will be of the utmost importance.

Mercantile shipbuilding in Britain since 1914 has been heavily handicapped; there has been a shortage of steel due to the pressing demand for guns and munitions, the drain on her man power stripped her plants, and men were put into the ranks who might better have served the allied cause in the yards. It was not until the spring of 1918, when the tonnage situation became acute, that 20,000 shipwrights were released from the army. She had to consider the imperative needs of her navy, and to maintain constantly at sea an immense fleet of first line battleships and cruisers, besides destroyers, trawlers, drifters, and all manner of anti-submarine craft.

Addressing visiting U.S. journalists in London in Oct., 1918, Admiral Sims, commanding the U.S. fleet in European waters, said that there were then about 5,000 anti-submarine craft operating day and night in the North Sea and vicinity; of this flotilla, 160, or 3% were U.S. vessels, the remainder being British; he stated that about the same proportion obtained in the Mediterranean. This is a striking tribute to the pre-eminence of Britain's navy, and of her merchant marine as well, for no small share of the battle against German mine and submarine has been borne by the latter. During four years of war the displacement tonnage of the navy, including auxilaries, increased from 2,500,000 to 6,500,000, and the personnel from 146,000 to 406,000. British yards of late have carried on an extensive work in the repairing and refitting of merchant ships damaged by mine or torpedo, hampering greatly the output of new shipping. Between June, 1917, and Oct., 1918, 10,000 British ships, besides a number of allied and neutral vessels, were repaired and made serviceable. In any estimate of Britain's capacity to build merchant ships under post war conditions, all these factors must be taken into account.

### The Central Powers' Shipping.

In considering the merchant shipping output of the Central Powers during the war period, it must be borne in mind that they were largely free from the disabilities under which Britain has labored. Early in the war they gave up any attempt to keep the sea, confining themselves almost entirely to the use of submarines, thereby curtailing the building of the larger battleships. The repairing and refitting operations of their merchant shipyards were confined to their Baltic fleet, a mere trifle; they were thus able to devote the greater part of their building activity to the production of new merchant ships, and that they did this to a very considerable extent may be taken for granted from information that has leaked out from Germany. On the authority of the late Herr Ballin, there are at present building in German yards one ship of 56,000 gross tons, one of 35,000, two of 30,000, and a number ranging from 9,000 to 22,000 tons; Germany, as heretofore, evidently pinning her faith to the big freighters. The system of heavy subsidies started before the war is to be continued, especially to merchant ships completed within three years after the declaration of peace.

Of the merchant shipping of the Central Powers, 2,700,000 tons were interned in German or Austrian ports at the outbreak of war, the remaining 3,487,000 being in neutral ports; of the latter 2,392,675 tons were confiscated; irrespective of new output the Central Powers have at present 3,794,325 gross tons of merchant shipping. As their output of shipping in 1914 was roughly 600,000 gross tons, it may be assumed that they have at present at the least between four and five million tons for post war trade.

### Canadian Shipbuilding Policy.

Owing to the drain on merchant tonnage generally and on British tonnage in particular, due to the war, the possession of ships has become of capital importance to the dominions, first to carry their own products overseas, and second to partake in the sea-carrying trade, and obtain the advantage of the high freight rates which are likely to obtain for a considerable post war period; it has already been shown how Australia has increased her shipbuilding activities.

The Canadian Government, recognizing how much the possession of a merchant marine, solely under Canadian control, either governmental or private, will mean to the future trade prosperity of Canada, has launched an extensive plan for the building of a Canadian merchant marine in Canadian shipyards.

In this connection it may be noted that rolling mills for the output of steel plates and steel shapes for ships have been es-

tablished at Sydney, N.S. Hitherto the bulk of these plates and shapes came from U.S. sources, but Canada is now in a position to employ Canadian firms only in all that pertains to the building of ships.

Apart from the formation of a much needed Canadian merchant marine the government plan has another side, the placing of the Canadian shipbuilding industry on a firm footing. Nearly one-fourth of the government contracts for ships run into 1920; this ought to enable the Canadian yards affected to become securely established, and to compete successfully in the output of ships for foreign governments.

This portion of the Deputy Minister's report is followed by a table giving some particulars about the first 45 steel cargo steamships ordered by the Marine Department for operation as Canadian Government Merchant Marine Ltd. Fuller particulars of 60 ships, orders for which have been announced are given in the table which Canadian Railway and Marine World publishes monthly, and which appears on another page in this issue.

**Vessels built in Canada and registered during 1918.**

| Province | Wood. Sailing. Tonnage No. | Gross | Net | Wood. Steam. Tonnage No. | Gross | Net | Gas. Tonnage No. | Gross | Net | Metal. Steam. Tonnage No. | Gross | Net | Totals. Tonnage No. | Gross | Net |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nova Scotia | 80 | 28,852 | 24,923 | 5 | 1,487 | 1,048 | 24 | 920 | 793 | 1 | 1,735 | 1,067 | 110 | 32,994 | 27,831 |
| New Brunswick | 9 | 2,451 | 2,436 | .... | ..... | ..... | 7 | 261 | 154 | .... | ..... | ..... | 16 | 2,712 | 2,590 |
| P.E. Island | .... | ..... | ..... | 1 | 23 | 16 | 3 | 73 | 62 | .... | ..... | ..... | 4 | 96 | 78 |
| Quebec | 10 | 3,117 | 2,868 | 5 | 364 | 78 | 7 | 309 | 201 | 4 | 10,782 | 5,939 | 26 | 14,572 | 9,086 |
| Ontario | 21 | 3,955 | 3,955 | 13 | 483 | 315 | 3 | 107 | 85 | 11 | 10,031 | 5,743 | 48 | 14,576 | 10,098 |
| Manitoba | .... | ..... | ..... | 1 | 58 | 39 | ..... | ..... | ..... | .... | ..... | ..... | 1 | 58 | 39 |
| British Columbia | 99 | 13,894 | 13,894 | 29 | 56,696 | 34,942 | 63 | 2,692 | 1,908 | 1 | 5,703 | 4,145 | 192 | 78,985 | 54,889 |
| Totals | 219 | 52,269 | 48,076 | 54 | 59,111 | 36,438 | 107 | 4,362 | 3,203 | 17 | 28,251 | 16,894 | 397 | 143,993 | 104,611 |

**Vessels on Canadian registry books, Dec. 31, 1918.**

| Province. | Sailing vessels. No. | Gross tons | Net tons | Steam vessels. No. | Gross tons | Net tons |
|---|---|---|---|---|---|---|
| New Brunswick | 782 | 34,853 | 33,804 | 261 | 24,795 | 15,679 |
| Nova Scotia | 1,397 | 109,948 | 99,366 | 551 | 42,272 | 25,151 |
| Quebec | 781 | 138,052 | 132,727 | 537 | 236,303 | 142,508 |
| Ontario | 590 | 108,333 | 101,629 | 1,474 | 335,362 | 211,236 |
| Prince Edward Island | 128 | 7,776 | 7,353 | 30 | 7,511 | 3,452 |
| British Columbia | 505 | 83,550 | 81,821 | 1,423 | 245,076 | 149,692 |
| Manitoba | 17 | 3,394 | 3,394 | 79 | 9,717 | 6,397 |
| Yukon Territory | 1 | 556 | 556 | 7 | 2,312 | 1,484 |
| Saskatchewan | 1 | 145 | 145 | 4 | 660 | 384 |
| Totals | 4,202 | 486,607 | 469,795 | 4,366 | 904,008 | 555,983 |

**Comparative Statement of Vessels on Canadian Registry Books in 1909 and 1918.**

| Province. | 1909. Vessels. | Net tons. | 1919. Vessels. | Net tons. |
|---|---|---|---|---|
| New Brunswick | 937 | 62,984 | 1,043 | 49,483 |
| Nova Scotia | 2,058 | 160,286 | 1,948 | 124,517 |
| Quebec | 1,432 | 175,370 | 1,318 | 175,235 |
| Ontario | 2,061 | 208,652 | 2,064 | 312,865 |
| P.E. Island | 150 | 10,154 | 158 | 10,805 |
| British Columbia | 1,020 | 92,746 | 1,928 | 231,513 |
| Manitoba | 90 | 5,087 | 96 | 9,791 |
| Yukon Territory | 16 | 2,984 | 8 | 2,040 |
| Saskatchewan | 4 | 290 | 5 | 529 |
| | 7,768 | 718,553 | 8,568 | 1,016,778 |

**New Vessels Built and Registered in Canada in 1918.**

| Province. | Vessels | Net tons |
|---|---|---|
| New Brunswick | 16 | 2,590 |
| Nova Scotia | 110 | 27,831 |
| Quebec | 26 | 9,086 |
| Ontario | 48 | 10,098 |
| P.E. Island | 4 | 78 |
| British Columbia | 192 | 54,889 |
| Manitoba | 1 | 39 |
| Total | 397 | 104,611 |

**Vessels Removed From Canadian Registry Books During 1918.**

| | |
|---|---|
| Sold to foreigners | 44 |
| Wrecked | 20 |
| Stranded | 11 |
| Lost | 11 |
| Broken up, etc | 166 |
| Abandoned at sea | 5 |
| Collisions | 1 |
| Foundered | 24 |
| Burnt | 12 |
| Transferred to St. John's, Nfld | 90 |
| Transferred to Australia | 1 |
| Transferred to Great Britain | 6 |
| Transferred to South Africa | 2 |
| Missing | 20 |
| Registry no longer required | 6 |
| Sunk by enemy | 23 |
| Total | 442 |

It is estimated that 44,103 men and boys, etc., inclusive of masters, were employed on ships registered in Canada during 1918.

## Canada Steamship Lines' Winter Overhaul of Steamships.

Following are particulars of a number of Canada Steamship Lines' steamships which are being overhauled while laid up for the winter, with the names of the ports at which they are moored, and some details of the work being done on them:

S.s. T. P. Phelan, Kingston, Ont., reconstruction to make it suitable for grain carrying;

S.s. Ionic, Kingston, Ont., general rebuilding;

S.s. City of Hamilton and City of Ottawa, Toronto, new wale strakes, no. 1 hold bulk-head renewed, new deck houses and general repair;

S.s. Seguin, Kingston, Ont., new ceiling in hold, houses recanvassed, new life boats;

S.s. Belleville, Toronto, general repairs;

S.s. Bickerdike, Hamilton, Ont., new ceiling in holds, renew spar deck and deck houses;

S.s. Maplegrove, Port Dalhousie, Ont., new bilge planks, repairs to port rail and quick work, new stanchions;

S.s. J. H. G. Hagarty, Goderich, Ont., alteration of bulkhead doors in cargo holds;

S.s. E. B. Osler, Goderich, Ont., remodelling passenger dining room and officers' quarters, bulkhead to be built in no. 1 hold to facilitate quicker unloading;

S.s. W. D. Matthews, Goderich, Ont., new starboard hawse pipe, alteration of pilot houses and renewal of wale strakes;

S.s. Midland King, Goderich, Ont., bilge and wale strake repairs;

S.s. Martian, Goderich, Ont., new starboard hawse pipe, renewal of wale strakes, deck beams and stanchions in holds cut away and Herreman system installed, new refrigerator plant and new coal bunker;

S.s. W. Grant Morden, Port McNicoll, Ont., general outfit and new wireless telegraph room;

S.s. Midland Prince, Port McNicoll, Ont., general fitout and three new deck winches;

S.s. Collingwood, Port McNicoll, Ont., after bulkhead repairs, rebuilding wireless telegraph room, and four new deck winches;

S.s. Emperor, Fort William, Ont., new hatch pulling winches;

S.s. Haddington, Fort William, Ont., all cabins to be remodelled and wale strakes renewed;

S.s. Cadillac, Fort William, Ont., renewal of hatch coamings; deck winches removed and overhauled, wale strake and bilge repairs;

S.s. Sarnian, Buffalo, N.Y., new boilers, new steel deck house, and new hatch coamings.

## Winter Navigation of the St. Lawrence River.

Canadian Railway and Marine World for January contained an article on the possibilities of winter navigation on the St. Lawrence River by Hon. D. O. L'Esperance, President, Quebec Harbor Commission, in which he dealt exhaustively with the general average conditions existing in the St. Lawrence River and Gulf during winter. This matter has been discussed by various people interested in shipping in general, and those associated with Quebec in particular. The Quebec Board of Trade took the matter up recently with the Minister of Marine, and J. T. Ross, Chairman of the Board, received a reply from the Minister early in January, to the effect that it is his intention to take such steps as may be necessary to provide equipment that will be reasonably adequate to assist any vessel that may find it necessary to navigate the St. Lawrence after ice conditions have become severe. He said in part:—

"The casualty that befell the Canadian Recruit is very much to be regretted, indeed. The very severe ice conditions that resulted in the loss of the ship came about at a much earlier period than was anticipated here with regard to the experience of previous years. In so far as the Canadian Spinner is concerned, while the situation is extremely serious, it is hoped it may be possible to rescue this vessel from the other end. I have quite realized for some time that the facilities available for the purpose of assisting ships to navigate the River St. Lawrence after severe weather sets in are quite inadequate. For reasons that I am sure will commend themselves generally, the department consented to the transfer to the Russian Government of the ships that would be really effective in combatting the ice conditions in the River St. Lawrence. My present intention is to take such steps as may be necessary to provide equipment that will be reasonably adequate to assist any ships that may find it necessary to navigate the St. Lawrence after the ice conditions become severe. The representations submitted by you on behalf of the board of trade as to the extent to which facilities should be provided will be borne in mind by me in the course of the further consideration that the question will receive."

The Webster Steamship Co.'s Steamships, which are operating generally in the coal and package freight business on the St. Lawrence and Great Lakes, are all named after the President's (Senator L. C. Webster) sons and daughters, the names being as follows: Colin W.; Eric W.; Howard W.; Marion W.; Muriel W., and Stewart W.

# Dominion Wreck Commissioner's Enquiries, Judgments, Etc.

Enquiries have been held, and judgments delivered in connection with the following casualties,—

### Lakeport-Howard W. Collision.

Held at Montreal, Dec. 16, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and C. A. Ouellette, as nautical assessors, into the collision between the s.s. Lakeport, owned by Peterson and Collins, Cleveland, Ohio, and the Webster Steamship Co.'s s.s. Howard W., of Montreal, Oct. 29, 1919, near Hamilton Island in the River St. Lawrence. The court found that the responsibility for the accident rested solely on the s.s. Howard W. The master was absent from the bridge at a time and place when his presence was most needed, especially so in view of the fact, that the mate, his son, is very young, with only very limited experience as a mate. While accepting the master's statement that his absence was obligatory, yet his evidence and that of the wheelman differ somewhat as to where he was at the time of the collision, and the court has heard similar excuses so many times that, while it cannot reject that part of the master's evidence, it finds it very peculiar that these absences coincide so frequently with shipping casualties. The two ships were meeting at a point where a slight alteration of course was necessary, the s.s. Lakeport, bound east, was descending with the tide, and the green light of the Howard W. on her starboard side was broad enough to permit the mate to assume that though they were about to pass on the wrong side of the channel, according to the International Rules of the Road, since at that time the adoption of the Rules of Road for the Great Lakes had not been specified by whistle, and in view of the fact that the Howard W. was well to starboard, from the situation of both vessels it was considered safe for the Lakeport to continue on her course. The green light on the Howard W. alone was seen with her masthead light. It was said by the Lakeport that the range light of the Howard W. was not visible, but this was disproved by independent witnesses, but it may, at the time, have been obscured by smoke. The exact direction of the Howard W. could not be ascertained, but when at a ship's length from each other, it was perceived that she was coming obliquely on to the Lakeport, a turn of the wheel to starboard was given and the collision occurred. The court expressed the opinion that the Lakeport was in such water as to permit her to go full speed, that continuing full speed was good seamanship, as a diminuation or reversal would undoubtedly have caused more damage, by bringing about a collision of greater violence. There was no lookout, but the absence of this did not contribute to the casualty. The collision happening 200 ft. from the Hamilton light does not clearly indicate that the Howard W., after having been sighted well south of the channel had attempted to steer over to the north side whilst having the green light, or even the three lights of the Lakeport on her starboard side. There was ample proof that the Howard W.'s red light was not burning, or, if not, that it was so low as not to be seen by the Lakeport. Had this been in order when the Howard W. chose to cut across, its appearance would have caused, or compelled, the Lakeport to signal sooner. Hence the court did not find any reason for criticism of the action of the Lakeport's crew. The Howard W. was being navigated, if not carelessly, at least with a lack of ordinary prudence. The master had left his post at a place where extreme caution had to be exercised on account of change of courses which descending and ascending vessels have to adopt, leaving the mate, his son, who had had but one season's experience. The Lakeport did not comply with the letter of rule 25 of the Rules of the Road of the Great Lakes, but the court expressed the opinion that the spirit of the rule had been observed. The court, therefore, found that the Lakeport, having the right of way, and it being clear weather, exercised the necessary precautions which the unforeseen situation demanded, and its officers were therefore exonerated from blame. With regard to the Howard W., there was lack of judgment and prudence on the part of mate L. J. Daigneault, and he was therefore held to blame for the collision, and for his failure to comply with rule 25, his certificate as mate was suspended for 7 months, from Dec. 20, 1919, to July 20, 1920. The master, L. Daigneault, was given the benefit of the doubt, as to his absence from his post, and he was warned that the same excuse could not always be accepted. The court also took occasion to advise owners and agents of ships, to impress upon their officers the importance of maintaining a look out.

### Grounding of s.s. Canadian Volunteer.

Held at Montreal, Dec. 22, 1919, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and C. J. Stuart, as nautical assessors, into the Canadian Government Merchant Marine's s.s. Canadian Volunteer striking a buoy and bottom near buoy 90 Q, River St. Lawrence, Dec. 6, 1919.

Capt. E. C. Sears stated that the ship is built of steel, 1,910 tons net, 3,188 tons gross, 320 ft. long, 44 ft. 2 in. broad, and draws 17 ft. 2 in. forward and 19 ft. 4 in. aft, equipped with single screw and triple expansion engines for a speed of 10 knots, supplied with all necessary instruments for navigation, and has 36 of a crew, including 2 officers on this occasion and 3 engineers with certificates. He left Montreal Dec. 6 and experienced snow when he anchored, gradually proceeding later. On Dec. 8 he had been on deck practically all the time; but absented himself for two minutes to look at the chart, and reached the deck when the ship struck. The engines were stopped and helm put hard to port, then full speed astern, the ship striking a second time. It was found the ship was making water. At the time of grounding the steering pilot was acting on pilot Hamelin's advice and orders. The wind was light northeast. It was one minute after the buoy was seen that the ship came in contact with it.

Capt. J. D. Weir, Superintendent of Lights, stated that the buoy was reported as having disappeared.

J. O. Michaud, clerk of the Pilotage Office, stated that he had received orders from the agent for one pilot; but sent the two which were in turn on the list. He had been shown a letter purporting to be an agreement between the pilots and the Shipping Federation of Canada, with respect to placing the pilots on board; but had not read it. He had also received telephone orders from the Superintendent at Quebec to that effect. He acknowledged having sent the second pilot on the request of pilot Hamelin.

F. Hamelin, pilot, stated that he had been a pilot for 13 years, 11 of which he worked steadily for the C.P.R. This was his first enquiry. He was on deck, the second pilot steering under his orders. He saw the buoy 90 Q a quarter point on the starboard bow, Grondines ranges were opened slightly to the south. He tried to detect St. Emilie range, the aids for the turning point; but could not do so in time. The current was setting to the south and the tide was half ebbing He ported the helm, and saw it was done, but owing to the quantities of ice floating in the channel the ship did not obey as promptly as expected, and struck a buoy in the vicinity of the bridge on the starboard side. The ship's engines were stopped, the helm hard aported, then full speed ahead. The ship struck a second time, and then proceeded. The weather was clear, though sky cloudy, wind light and the ground was covered with snow, which prevented him from sighting St. Emilie range. He saw the buoy, which was about 3 ft. above water, when about 700 ft. distant, adopting the same method as in former navigation; but the current, which was about 2½ knots, carried him on swiftly towards the buoy and the masses of ice prevented the ship from responding to the helm with the promptness required at this turn. The buoy, when first sighted, must be on the starboard side as it is necessary to make the turn to the north in order to counteract the current setting south, which would tend to throw the ship on the south bank. He stated that he was the responsible pilot, pilot Rivard acting only on his orders. The only time he left the latter to his own devices being when he had to absent himself from the bridge, selecting parts of the river where there was ample room.

F. X. Rivard, pilot, said his duties consisted of steering. He did not remember how the Grondines lights were opened. He watched the steering only and obeyed the orders given him by the pilot. He did not remember if the buoy was a quarter point or more on the starboard bow.

R. Proteroe, third officer, stated that he was on deck, on the port side of the bridge, the buoy when seen being half a point on the port bow. He noticed by the movements of the arms of the wheelsman that the wheel was starboarded, bringing the buoy three points on the starboard bow, when the ship drifted towards the buoy, striking in line with the funnel. The helm was then put port; and hard to port, the ship striking a second time The engines were stopped. He then left the bridge.

Having heard arguments by Hon. A. W. Atwater, K.C., for the Shipping Federation of Canada, and G. H. Bernier, for pilot Hamelin, the court adjourned to Dec. 27, when its judgment was announced, of which the following is a summary: The evidence shows a striking contradiction between the statements of pilot Hamelin and the ship's third officer. The pilot's evidence, which was corroborated by his assistant, was that the buoy was first sighted on the starboard side, while the third officer stated that it was first sighted on the port side, and

that a starboard helm was given, the vessel drifting on to the buoy, starboard on. The preponderance of evidence was in favor of the pilot, the difference being so great that the court held the opinion that the third officer, being a stranger in these waters, unacquainted with local intricacies, and standing on one side of the bridge, must have erred, as it would have been incredible that two pilots, absolutely sober, the one in control having had a very successful career as a pilot, and having been a trusted C.P.R. employ for 11 years, could possibly have made the blunder of starboarding upon sighting the buoy. As the St. Emilie ranges could not be discerned, the turning of the ship was not begun until she had passed this determining point, and the joint action, of the current making toward the south, and the mass of ice, which appears to have been running, prevented proper and timely evolutions being performed. The pilot's evidence was straightforward, and there appeared to be no attempt at prevarication. The court therefore found that he did not, either through negligence or error, cause the ship's grounding, but that it was due to uncontrollable circumstances, and a situation which prevented the ship from obeying the helm as promptly as expected. The pilot, master and third officer were therefore exonerated.

The court endorsed the recommendation made in 1915, to erect some aid to navigation at Ste. Anne de la Parade, as a guide for the turning point, as it considers that in such a narrow pass and sharp curve, where prompt action has to be taken, in view of the various elements which make this channel difficult of navigation, the Ste. Emilie range is too distant for effectiveness. With regard to the carrying of an additional pilot, the court recommended that a definite understanding be arrived at between the Marine Department and the parties, so as to eliminate any cause of apprehension or friction which the presence or action of a second pilot may bring about. The court also expressed its appreciation of the efforts of the counsel engaged, and of Thos. Robb, Manager, Shipping Federation of Canada, in helping to bring to a successful termination, a case, which at first presented a serious and acrimonious situation.

## Contracts Let for Marine Public Works.

The Dominion Public Works Department has let the following contracts:—

Scotch Cove, White Point, N.S.; extension to breakwater; A. W. Girroir and W. F. MacKinnion, Antigonish, N.S.; Dec. 22, 1919; schedule of prices.

Pas, Man.; construction of wharf; N. J. Wylie and L. Berry, Winnipeg; Nov. 1, 1919; schedule of prices.

Naramata, B.C.; construction of wharf; S. Mills, New Westminster, B.C.; Nov. 3, 1919; schedule of prices.

Port Essington, B.C.; landing float and approach; M. Hyatt, Prince Rupert, B.C.; Nov. 5, 1919; schedule of prices.

Meteghan, N.S.; repairs and renewals to public wharf; M. C. Denton and M. A. Condon, Digby, N.S.; Nov. 10, 1919; $4.59 per cub. yd.

Beisdale, N.S.; wharf; E. Dickson, Louisburg, N.S.; Nov. 10, 1919; $2,350.

Little Brook, N.S.; repairs to breakwater; H. F. Deveau, Meteghan, N.S.; Nov. 11, 1919; schedule of prices.

St. Jean d'Orleans, Que.; repairs to wharf; E. Nethot and J. E. Thibault, Montmagny, Que.; Nov. 26, 1919; schedule of prices.

Petit Rocher, N.B.; repairs to breakwater; T. P. Charleson, Ottawa; Dec. 2, 1919; schedule of prices.

Sorel, Que.; reconstruction of corner in concrete and other repairs to wharf; O. Poliquin, Portneuf, Que.; Dec. 9, 1919, schedule of prices.

The Southern Salvage So., Liverpool, N.S., has been given judgment for $300 against the schooner Frances P. Moquito.

## Vessels Registered in Canada During November, 1919.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing vessels of less than 100 tons register.

STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines. Etc. N.h.p. | | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 114449 | A. E. Ames | Montreal | Howden-on-Tyne, Eng. 1903 | 246.2 | 37.0 | 21.6 | 1637 | 1020 | 217 | Sc. | Canada Steamship Lines, Ltd., Montreal. |
| 103236 | Alice | Ottawa | Sorel, Que. 1894 | 70.7 | 17.5 | 7.6 | 67 | 46 | 15 | Sc. | Minister of Railways and Canals, Ottawa, Ont. |
| 125440 | Beaverton | Montreal | Hebburn-on-Tyne, Eng. 1908 | 249.3 | 42.7 | 21.0 | 2012 | 1357 | 106 | Sc. | Canada Steamship Lines, Ltd., Montreal. |
| 141478 | Canadian Gunner* | Montreal | Collingwood, Ont. 1919 | 251.0 | 43.6 | 23.6 | 2415 | 1455 | 124 | Sc. | Minister of Marine and Fisheries, Ottawa, Ont. |
| 141483 | Canadian Navig'r* | " | Montreal 1919 | 319.3 | 44.2 | 22.6 | 3161 | 1929 | 226 | Sc. | " " |
| 141487 | Canadian Sower* | " | Port Arthur, Ont. 1919 | 251.3 | 43.9 | 20.3 | 2069 | 1201 | 146 | Sc. | " " |
| 141544 | E. D. Kingsley* | Vancouver, B.C. | Fort William, Ont. 1919 | 200.0 | 32.0 | 14.5 | 1029 | 541 | 92 | Sc. | Kingsley Navigation Co. Ltd., Vancouver, B.C. |
| 122856 | Edmonton | Montreal | Hebburn-on-Tyne, Eng. 1906 | 249.2 | 42.7 | 20.6 | 1983 | 1341 | 106 | Sc. | Canada Steamship Lines, Ltd., Montreal. |
| 107247 | Fearless | New Westminster, B.C. | New Westminster, B.C. 1898 | 71.0 | 15.6 | 7.7 | 75 | 12 | 13 | Sc. | J. Mayers, New Westminster, B.C. |
| 138219 | Glencadam (a) | Midland, Ont. | Wyandotte, Mich. 1913 | 244.0 | 43.0 | 18.2 | 1870 | 1118 | 115 | Sc. | Great Lakes Transportation Co., Midland, Ont. |
| 114446 | H. M. Pellatt* | Montreal | Port Glasgow, Scotland 1903 | 239.7 | 37.0 | 21.8 | 1608 | 1027 | 164 | Sc. | Canada Steamship Lines Ltd., Montreal. |
| 114447 | J. H. Plummer | " | Walker-on-Tyne, Eng. 1903 | 246.0 | 37.0 | 21.8 | 1582 | 992 | 210 | Sc. | Canadian Maritime Co., Montreal. |
| 123961 | Mapleton | " | Sunderland, Eng. 1909 | 250.0 | 42.7 | 16.4 | 1782 | 1140 | 106 | Sc. | Canada Steamship Lines Ltd., Montreal. |
| 138848 | Murray Stewart | Port Arthur, Ont. | Port Arthur, Ont. 1918 | 119.0 | 26.0 | 15.7 | 243 | 92 | 109 | Sc. | Port Arthur Shipbuilding Co., Port Arthur, Ont. |
| 138465 | St. Joe Island Ferry | Sault Ste. Marie, Ont. | Richards Landing, Ont. 1919 | 60.0 | 18.0 | 2.1 | 32 | 22 | 24 | Sc. | G. W. Langstaff, Richards Landing, Ont. |
| 128187 | Victoria (b) | Victoria, B.C. | Paisley, Scotland 1908 | 193.1 | 32.1 | 13.1 | 791 | 393 | 154 | Sc. | James Dunsmuir, Victoria, B.C. |
| 141502 | Willie H | Quebec, Que. | Quebec, Que. 1913 | 43.0 | 15.2 | 5.5 | 32 | 13 | 16 | Sc. | M.J. and W.J. Hacket, Quebec, Que. |

*Equipped with wireless. (a) formerly F. P. Jones. (b) formerly Dolaura.

SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141572 | Celeste D | Weymouth, N.S. | Schr. | Meteghan River, N.S. 1919 | 164.0 | 37.4 | 13.0 | 649 | 595 | Doucet Shipbuilding Co., Meteghan River, N.S. |
| 141461 | Donald II | Shelburne, N.S. | " | Shelburne, N.S. 1919 | 109.6 | 27.0 | 11.2 | 215 | 199 | Shelburne Shipbuilders, Ltd., Shelburne, N.S. |
| 138439 | Fundy King | Annapolis Royal, N.S. | " | Margaretville, N.S. 1919 | 141.0 | 32.7 | 12.0 | 412 | 376 | J. A. Balcom, Margaretville, N.S. |
| 140935 | G.S. McD. Co. No. 7 | Vancouver, B.C. | Barge | Victoria, B.C. 1915 | 84.6 | 40.0 | 6.9 | 192 | 192 | Whalen Pulp & Paper Mills, Ltd., Vancouver, B.C. |
| 141075 | Gertrude Parsons | Windsor, N.S. | Schr. | Cheverie, N.S. 1919 | 132.5 | 31.1 | 12.3 | 357 | 341 | G. M. Parsons, Cheverie, N.S. |
| 141519 | J. L. Ralston | Parrsboro, N.S. | " | Eatonville, N.S. 1919 | 156.5 | 35.6 | 13.0 | 499 | 462 | Wm. Kirkpatrick, Parrsboro, N.S. |
| 141384 | M. J. Parks | LaHave, N.S. | " | Shelburne, N.S. 1919 | 123.3 | 26.5 | 10.9 | 176 | 173 | M. J. Parks, M.O., LaHave, N.S. |
| 141386 | Maid of LaHave | " | " | Dayspring, N.S. 1919 | 111.3 | 29.6 | 12.7 | 266 | 222 | J. L. Publicover, M.O., LaHave, N.S. |
| 141518 | Nova Queen | Parrsboro, N.S. | " | Advocate, N.S. 1919 | 150.0 | 35.0 | 13.0 | 476 | 432 | T. K. Bentley, Parrsboro, N.S. |
| 141546 | P.S.B. 4 | Vancouver, B.C, | Scow | Vancouver, B.C. 1910 | 91.0 | 29.8 | 7.0 | 161 | 161 | Progressive Steamboat Co., Vancouver, B.C. |
| 141412 | Richard B. Silver | Lunenburg, N.S. | Schr. | Mahone Bay, N.S. 1919 | 123.3 | 27.7 | 11.2 | 267 | 224 | H. W. Adams, Lunenburg, N.S. |
| 141385 | St. Clair Ritcey | LaHave, N.S. | " | Salmon River, N.S. 1919 | 134.0 | 30.5 | 11.6 | 364 | 332 | J. N. Rafuse & Sons, Conquerall Bank, N.S. |
| 141258 | W. S. MacDonald | Yarmouth, N.S. | " | Meteghan, N.S. 1919 | 146.5 | 32.7 | 12.3 | 430 | 382 | T. H. Macdonald, Meteghan, N.S. |

# Canadian Notices to Mariners.

The Marine Department has issued the following:—

**Ontario—Lake Ontario, Toronto Harbor** During the past season, the Dominion Public Works Department has dredged the channel between the piers at the eastern entrance to Toronto harbor 200 ft. wide to a depth of 17 ft. below elevation 245.0 or zero of the Toronto Harbor Commissioner's gauge at Queens wharf.

**Ontario—Lake Erie, Rondeau Harbor** —The hand fog horn maintained on the outer end of the east breakwater pier was discontinued Dec. 31, 1919.

**Ontario — Lake Huron, Kincardine**— During the past season the entrance between the piers and a part of the basin in Kincardine harbor were dredged by the Dominion Public Works Department, to a depth of 14 ft. below the zero of the harbor gauge, which is 578.50 ft. above mean sea level, New York. The channel between the piers is 50 ft. wide from deep water to the inside end of the entrance piers, where the deepened area turns southward for 205 ft. The south end of the dredged area is 50 ft. wide, gradually widening to 90 ft., 108 ft. north. For the next 85 ft. the dredged area is 250 ft. wide, then narrowing gradually to 50 ft. at the inside end of the entrance piers.

**British Columbia—Strait of Georgia,** Sandheads at entrance to Fraser River— The two red steel conical buoys 10F. and 12F. established in 1919 on the south side of the channel at the entrance to the Fraser River will be discontinued; black buoy 9F. will be re-established on its former position 0.30 mile 66° 30′ (N. 41° 30′ E. mag.) from buoy 7; black can buoy 11F. will be re-established on its former position 0.27 mile 66° 30′ (N. 41° 30′ E. mag.) from buoy 9.

**British Columbia — Chatham Sound,** Prince Rupert Harbor, Barret Rock—On or about Mar. 1, 1920, when the gas and bell buoy will be withdrawn, and light and fog alarm established on the rock, lat. N. 54° 14′ 32″, long W. 130° 20′ 38″; character, occulting red acetylene light, automatically occulted at short intervals; elevation, 22 ft. Structure, white rectangular reinforced concrete tower, with pointed ends, surmounted by square concrete house with lantern on top; height, 44 ft. Fog alarm, diaphone, operated by air, compressed by electricity, controlled from dwelling on shore, gives 2 blasts of 2 secs. duration every 30 secs.; the horn elevated 13 ft. above high water, and will be put in operation immediately; dwelling, rectangular wooden dwelling on shore directly east of beacon by submarine cable.

**British Columbia—Strait of Georgia,** Fraser River — Frasermouth Outer Range Lights; the fixed oil lights will be replaced by occulting acetylene gas lights, automatically occulted at short intervals; the front light will be changed from red to white, the back light to remain white as formerly; Garry Point Range Lights; front light, on Steveston jetty; fixed red light shown from a cluster of 3 incandescent electric lamps, at elevation of 15 ft; visibility, 6 miles; structure, wooden pole; back light on same pole as Wingdam back range light; fixed white light shown from a cluster of 3 incandescent electric lamps at elevation of 30 ft.; visibility, 10 miles in line of range; the lights in one astern bearing 305° (n. 80 w. mag.) lead up from the intersection of their alignment with that of the northside range lights to black buoy 25F.

**British Columbia—Cousins Inlet, David** Point—Lighted beacon established on northeast extremity of point; fixed red oil light at elevation of 16 ft.; wooden slatwork pyramid, surmounted by a slatwork ball having the lantern suspended from a bracket on the north face of the beacon; color, white; height, 26 ft.; the light will be maintained by Pacific Mills, Ltd., Ocean Falls.

**Prince Edward Island—South Coast,** Summerside Harbor—During the past season the Dominion Public Works Department has dredged the approach to, and a berth on the east side of Queens wharf, Summerside; from deep water 550 ft. south from the end of the wharf the approach was cleaned up to a depth of 18 ft.; the berth on the east side of the wharf is 250 ft. long by 80 ft. wide with 18 ft. water at the outer end of the wharf gradually decreasing in depth to 10 ft. at the inner end of the dredged area.

**Quebec—Gulf of St. Lawrence, Moisie** River—Owing to the back light of the Moisie River range lights having been moved northward, the bearing of the range has been changed to 272° (n. 62° w. mag.); distance between front and back lights 436 ft.

**Quebec—River St. Lawrence below** Montreal, vicinity of Longue Pointe— The two red gas buoys that were placed to mark a reserved harbor area in the vicinity of Longue Pointe have been discontinued.

**British Columbia, Fraser River, North** Army, change in character of lighted beacons—Westerly light, on south side of channel at outer entrance to North Arm, occulting white acetylene light, automatically occulted at short intervals, shown from a lens lantern, elevation, 18 ft.; easterly light, on south side of channel at turn in jetty, occulting white acetylene light, automatically occulted at short intervals, shown from a lens lantern, elevation, 18 ft.; both lights are unwatched.

## Gulf of St. Lawrence Shipping and Trading Co.'s Services.

Canadian Railway and Marine World for December, 1919, contained some details of this company's projected winter services in the Gulf of St. Lawrence. It is further reported that a winter service down the Gulf as far as Blanc Sablon and Natashquan, on the north shore, and a summer service between Montreal and Gulf and Newfoundland ports will be undertaken. The winter service comprises a regular operation between Murray Bay, at the mouth of the Saguenay River, as far as Natashquan and Blanc Sablon, to which ports navigation has not yet been attempted in winter. The company's s.s. Labrador is, it is said, to be used in the service, which will consist of two trips a month. The company expects to obtain certain privileges from the Dominion Government to enable it to carry on the service to some advantage. Arrangements are reported to have been made for the chartering of a number of steamships for an extended summer service on the same line as carried out in 1919.

The Canadian Deep Waterways Association held a joint meeting with the Great Lakes and St. Lawrence Tidewater Association at Windsor, Ont., Jan. 21, and discussed plans for deepening the St. Lawrence system to allow ocean going vessels to pass to the head of the Great Lakes.

## Grain Shipped from Port Arthur and Fort William, Ont.

The followingt table, prepared by the Board of Grain Commissioners, shows the quantity of each kind of grain shipped by vessels from Port Arthur and Fort William, Ont., during the 1919 navigation season, according to the ports at which the cargoes were discharged:—

| To Canadian ports— | Wheat Bush. | Oats Bush. | Barley Bush. | Flax Bush. | Rye Bush. | Mixed lbs. | Screenings tons. |
|---|---|---|---|---|---|---|---|
| Depot Harbour | 2,600,347—00 | ..... | ..... | ..... | ..... | ..... | ..... |
| Goderich | 10,472,521—40 | 3,192,728—13 | 147,352—25 | 375,188—44 | 33,474—46 | 6,376,140 | ..... |
| Midland | 8,498,470—10 | 2,952,263—04 | 2,144,640—46 | ..... | 571,074—31 | 4,590,691 | ..... |
| Montreal | 427,777—30 | 2,084,812—32 | 1,806,603—10 | 66,000—00 | 55,548—28 | ..... | ..... |
| Port Colborne | 21,657,569—10 | 721,246—31 | 3,761,276—46 | ..... | 58,907—14 | 3,307,710 | ..... |
| Port McNicoll | 28,181,602—40 | 2,918,282—11 | 1,848,365—39 | 53,378—42 | 66,545—03 | 5,908,408 | 161—1740 |
| Tiffin | 14,647,886—00 | 239,489—04 | 1,350,995—09 | ..... | ..... | ..... | ..... |
| | 86,486,174—10 | 12,108,823—27 | 11,059,234—31 | 494,567—30 | 785,550—10 | 20,182,949 | 161—1740 |
| **To U. S. ports—** | | | | | | | |
| Buffalo | 2,797,037—30 | 2,468,948—06 | 1,085,367—24 | 180,572—42 | 29,684—14 | ..... | 1,612—0750 |
| Chicago | ..... | ..... | ..... | ..... | ..... | ..... | 5,986—1810 |
| Cleveland | ..... | ..... | ..... | 34,150—00 | ..... | ..... | ..... |
| Duluth - Superior | 988,285—50 | ..... | ..... | 397,518—49 | 273,737—38 | ..... | 34,168—0420 |
| Total | 3,785,323—20 | 2,468,948—06 | 1,085,367—24 | 612,241—35 | 303,421—52 | ..... | 41,767—0980 |
| Winter storage cargoes | 2,497,823—20 | 1,150,310—12 | 261,260—16 | 100,397—48 | ..... | ..... | ..... |
| Grand total | 92,769,320—50 | 15,728,082—11 | 12,405,862—23 | 1,207,207—01 | 1,088,972—06 | 20,182,949 | 41,929—0720 |

## Atlantic and Pacific Ocean Marine.

The Canadian Pacific Ocean Services' s.s. Monteagle was damaged by fire, in her engine room, while at Hong Kong, China, Dec. 31, 1919.

The Greek s.s. Platea, which went ashore on Sable Island, towards the end of 1919, will be salved shortly, a contract having been awarded to the Atlantic Salvage Co. The work commenced Jan. 14.

The German s.s. Kronprinz Freiderich Wilhelm, one of the ships seized by the allies at the outbreak of war, has been allocated to Canadian Pacific Ocean Services Ltd., for the north Atlantic route. It is said that she is to be docked and thoroughly overhauled and refitted, to make her equivalent to the company's ships of the Empress class.

The White Star s.s. Olympic, which has been engaged almost solely for some time in troop transportation, has been restored to her old condition and equipped with oil burning furnaces. She is said to be the first of the large passenger steamships to be so equipped. She will resume her service between Great Britain and New York during March.

The former German steamship Germanicus, which stranded on Northwest Reef, Bic Island, near Father Point, in Nov., 1919, is being offered for sale by the Salvage Association of London, Eng., as she lies stranded. She was built in England in 1901, passed to German owners, and during the war, was taken over by the British Ministry of Shipping. At the time of the casualty she was on her way to Montreal light to load grain for Europe.

The British s.s. Yarmouth, which left New York for Havana, Jan. 17, was reported by wireless to be in a sinking condition in lat. 49, north longitude 74 west, about 240 miles northeast of light vessel 3. She was formerly in the Dominion Atlantic Ry.'s service between Yarmouth, N.S., and Boston, Mass., and was sold recently to British purchasers. She was built at Dumbarton, Scotland, in 1887 and is screw driven by engine of 260 n.h.p. Her dimensions are: length, 220.3 ft.; breadth, 35.2 ft.; depth, 21 ft.; tonnage 1,452 gross, 725 registered She eventually reached New York, where repairs were made, after which she proceeded on her voyage, Jan. 22.

The Canadian Robert Dollar Co. has announced that its first direct sailing from the Orient to New York, calling at Vancouver, will be made by the s.s. Melville Dollar, scheduled to arrive at Vancouver, April 25, and sailing thence for New York, May 4. She is booked to arrive at Vancouver, from New York, on the return trip, July 12. The first direct sailing from New York to the Orient, calling at Vancouver, will be made by the s.s. Grace Dollar, leaving New York, April 12, arriving at Vancouver May 11. Other steamships to be used in this service are: M. S. Dollar; Bessie Dollar; and Harold Dollar.

## Maritime Provinces and Newfoundland.

The Majestic Steamship Co.'s s.s. Champlain is being thoroughly overhauled and having a new boiler installed at Gregory's yard, St. John, N.B.

The schooner Madonna, owned in Newfoundland, while en route from a Newfoundland port to Sydney, N.S., was driven ashore at Petit Point, outside Sydney Harbor, Jan. 3.

The Reid Newfoundland Co.'s s.s. Dundee, which ran ashore during a hurricane, Dec. 26, 1919, is expected to be a total loss. The passengers and crew were taken off by the company's s.s. Clyde.

The Reid Newfoundland Co.'s s.s. Sagona struck on the rocks at the entrance of Rocky Harbor, Nfld., early in January, but was able to proceed to Port aux Basques, Nfld., under her own steam.

The St. John River Steamship Co.'s s.s. Elaine, is reported to have been chartered by Cuban interests, and to have left St. John for New York, where some repairs are being made, before she proceeds to Cuba.

The sailing ship Lucille, which left Perth Amboy, N.J., Nov. 30, 1919, for Halifax, N.S., with a cargo of coal, was reported at the end of December to be missing, nothing having been heard of her or her crew since she left port.

The 3 masted schooner Pelleen was sold by auction at St. John's, Nfld., recently. She was built at Port Blandford, Nfld., in 1919 and is 430 tons gross, 388 tons net, and was offered as she lay in St. John's harbor, fitted and practically ready for sea.

The s.s. Merle C., en route to Port Greville, N.S., sprang a leak in deep water near that point, and sank with her cargo of coal, Jan. 11, the crew having abandoned her. She was built at Port Greville, in 1919 and was owned by Capt. Robert Kerr and others of Parrsboro, N.S.

The schooner Frances Gardiner, owned by W. C. Smith & Co., Lunenberg, N.S., was abandoned at sea early in January, the crew having been rescued and taken to St. John's, Nfld., by a Norwegian steamship. She sailed from Newfoundland about Dec. 16, 1919, with fish for Oporto, Portugal.

The schooner G. H. Murray, 350 tons, owned by the Bissett Co., Halifax, N.S., and which was built by the Comeau Shipbuilding Co., Comeauville, N.S., in Sept., 1919, has been wrecked on the Coloradoes reef, Cuba, and become a total loss. She took cargo at Walton, N.S., in Oct., 1919, for New York, where she reloaded for Havana, leaving New York, Nov. 10.

The Naval Service Department received tenders to Jan. 22, for the purchase of the Dominion Government s.s. Thirty-three, as she lies at Halifax, N.S. She was built of steel, at North Shields, Eng., in 1902. Her dimensions are: length, 80 ft.; breadth, 18.1 ft.; depth, 8.3 ft.; tonnage 79 gross, 33 registered. She is screw driven by engine of 21 n. h.p. at about 9 knots an hour.

The Kingsley Navigation Co.'s s.s. E. D. Kingsley, which grounded recently at Whitehead Harbor, N.S., on the second portion of her journey from the Great Lakes to Vancouver, B.C., was involved in an action at Halifax, N.S., Jan. 8, on a claim by Munro and Phalen for $5,000, for salvage work. Mr. Justice Drysdale, of the Admiralty Court, awarded the plaintiff $400 for salvage services, and costs, subject to a reduction of $400 because of the excessive claim which had been made and which compelled the ships owners to put up bonds at an expense of $500.

The s.s. E. Ross, which has been operated on the Indiantown, N.B., ferry service for some time, is reported to have been sold to the St. John Drydock and Shipbuilding Co. She was owned by Capt. James Leonard, St. John, N.B., and was operated on a monthly agreement with the Lancaster and Indiantown Ferry Commission. Some opposition to the sale has developed, and it is reported that an arrangement will probably be made with the new owners, either to allow the vessel to remain in the service, or for the commission to purchase it by a bond issue. The E. Ross was built at St. John, N.B., in 1894, and is screw driven by engine of 7 n.h.p. Her dimensions are: length, 41.9 ft.; breadth, 15.3 ft.; depth 5.1 ft.; tonnage 30 gross, 20 registered.

## Ontario and the Great Lakes

The Hamilton Board of Control considered plans for harbor improvement, involving an expenditure of about $15,000, recently.

The Canadian Towing & Wrecking Co.'s steam tug A. B. Conmee was considerably damaged by fire at Port Arthur, towards the end of December, the loss being estimated at $25,000.

The Toronto Harbor Commissioners have deposited with the Dominion Public Works Department, description of site and plans of the harbor head walls to be built in Toronto Bay between the western limit of York St. produced southerly, and the western limit of Yonge St. produced southerly, and have applied for permission to build them.

Canada Steamship Lines Ltd., has transferred the following of its steamships from the British register to the Canadian, A. E. Ames, Beaverton, Edmonton, H. M. Pellatt, and Mapleton. All of these were built in Great Britain, and were either owned by companies which have been absorbed by Canada Steamship Lines Ltd., or bought by that company.

The schooner Oliver Mowat, owned by W. H. Peacock, Port Hope, and W. Savage, Picton, Ont., is reported sold to T. L. Vandusen, and R. G. K. Hepburn, Picton, Ont, for use as a coal carrier between Oswego, N.Y., and Picton. She was built at Mill Haven, Ont., in 1873, her dimensions being: length, 116 ft.; breadth, 23.8 ft.; depth, 9.8 ft.; tonnage, 170 registered.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above mean sea level for Dec., 1919, as follows: Superior, 602.33 ft.; Michigan and Huron, 580.18 ft.; St. Clair, 74.62 ft.; Erie, 571.81 ft.; Ontario, 245.54. Compared with the average December stages for the past 10 years, Superior was 0.03 ft. above; Michigan and Huron 0.08 ft. above; Erie, 0.12 ft. above; Ontario, 0.33 ft. above.

The Keystone Transportation Co.'s s.s. Keyvive, operated formerly in the Great Lakes trade, is now being operated under 12 months charter between New York and West Indies and Gulf of Mexico ports. Her first sailing under this charter was from Montreal, Nov. 26, 1919, when she left for Clark City for a cargo of baled pulp for New York, after discharging which she loaded coal at Hampton Roads for Cuba.

Canada Steamship Lines' s.s. Chicora, which sank at her moorings at Toronto in the latter part of 1919, and was refloated, is being offered for sale by tender. She was built at Liverpool, Eng., in 1864 for use as a blockade runner in the United States civil war. She

is paddle wheel driven by engine of 180 n.h.p. Her dimensions are: length, 221 ft.; breadth, 26 ft.; depth, 10.9 ft.; tonnage, 931 gross, 540 registered. She is equipped for wireless telegraphy.

The Toronto Harbor Commissioners' issue of $2,000,000 of 4½% bonds, due in 1953, is to cover the estimated expenditure for this year's work, which comprises the acquisition of lands, ship channel bridge, piers and docks, sewers, general development, maintenance and general administration. Of the estimated expenditure during the year, 17% will take place on the eastern section (Ashbridge's Bay), 64% on the central section (bay front from Bathurst to Cherry Sts), and 19% on the western section (Bathurst St. to Humber River).

## Manitoba, Saskatchewan and Alberta.

The Lamson-Hubbard Canadian Co. has under construction at Fort Smith, Alta., a stern wheel steamboat with accommodation for both passengers and freight, for operation on the Mackenzie River from Fort Smith northerly. The frame work is reported completed and the boiler installed.

The assets of the Peace River Trading Co., which is a subsidiary of the Peace River Development Co. are reported sold to Lamson Hubbard Canadian Co., Boston, Mass. The Peace River Trading Co. forms a portion of the estate of the late Lord Rhondda (D. A. Thomas), and during the past four years has given a regular transportation service on the Peace River between Hudson's Hope and Fort Vermilion, with its steamships D. A. Thomas and Lady Mackworth, named after the late Lord Rhondda and his daughter, the present Baroness Rhondda, respectively. The Lamson-Hubbard Canadian Co. is principally a fur trading organization, with a number of trading posts along the Athabasca, Slave and Mackenzie Rivers to the Arctic Ocean, and also some stations on Hudson Bay. Under the new ownership, it is stated, the transportation service will be continued as heretofore, and on or about May 1, the regular weekly service on Peace River, will be resumed. Connection for all points along the Slave, and Mackenzie Rivers to the Arctic being made at Vermilion Chutes.

Steamboat Nipawin, operated during navigation season, between Pas, Man., and Sturgeon Landing, by Ross Navigation Co. Ltd., Pas.

## British Columbia and Pacific Coast.

The C.P.R. s.s. Princess Mary ran aground, on a sand bar in the first narrows of Burrard Inlet, Dec. 28, 1919, but floated off with the tide, without sustaining any damage.

The C.P.R. s.s. Princess Charlotte collided with Frank Waterhouse and Co.'s s.s. Morning Star, in the first narrows of Burrard Inlet, recently, during a heavy fog, neither ship being much damaged.

The Union Steamship Co. of British Columbia's s.s. Capilano, was launched by B.C. Marine Railway Ltd., Vancouver, Dec. 30. The company has another vessel under construction by Wallace Shipyards, Ltd., North Vancouver.

The C.P.R. s.s. Princess Patricia arrived at Victoria recently in tow of the tug Nitinat, with a defective boiler. The repairs were undertaken by the Victoria Machinery Depot Co., and were expected to be completed by the end of January

Passenger fares on all steamships running out of Vancouver to northern ports, have been increased, as from Jan. 1, owing to increased cost of operation. For the present, the rates between Vancouver, B.C., and Seattle, Wash., remain as they were.

The Union Steamship Co. of British Columbia's s.s. Chilliwack, which ran ashore in Millbank Sound while returning from a northern trip recently, was docked by B.C. Marine Railway Ltd., and repaired. She was only out of service a few days.

The Vancouver Harbor Commissioners, on their return from Ottawa recently, are reported to have said that a start would be made on the harbor development scheme at once and that A. D. Swan, Consulting Engineer, Montreal, will be in charge of the work.

A C.P.R. official is reported to have stated recently, that the company will probably build a steamship similar to the s.s. Princess Sophia, for the northern route, and that J. W. Troup, Manager British Columbia Coast Service, is in Great Britain in this connection.

The Union Steamship Co. of British Columbia's new steamship, which is being built by Wallace Shipyards, Ltd., North Vancouver, B.C., is expected to be launched early in February and to be delivered early in March. She will be used in the coastwise freight service.

The Union Steamship Co. of New Zealand's s.s. Waihamo was hauled out on the marine railway at Esquimalt for general overhaul and rivet tightening during January. She is a new steamship and recently completed her maiden voyage. She will be operated between Canada and the Antipodes in the mail service.

The auxiliary powered schooner Oregon, which was seized in 1916, by the British, in the Gulf of California, and brought as a prize to Victoria, has been released to her owners, with sufficient compensation to put her in seaworthy condition. The money realized by the sale of the cargo, with accrued interest, was also handed over.

It is reported that the Dominion Marine Department's new administration building on the Songhees Reserve, Victoria, is to be proceeded with immediately. The work was said to have been held up until an agreement had been reached regarding the Johnson St. bridge, and as this has been settled, it is expected that the work will be pushed.

The C.P.R. s.s. Princess Victoria was withdrawn from the Vancouver-Victoria-Seattle route, Jan. 7, and laid up at Victoria, for overhaul and refit. The service is being maintained by the company's steamships, Princess Alice and Princess Charlotte. The steamships Princess Adelaide and Princess Royal are running between Vancouver and Victoria, and the s.s. Princess Mary is on the Alaska service and running to Gulf ports as occasion requires.

At a meeting of the Victoria Inner Harbor Association, Jan. 8, Capt. C. D. Neroutses, Marine Superintendent, British Columbia Coast Service, C.P.R., and acting Manager, during the absence of J. W. Troup in Great Britain, urged immediate further dredging in the harbor, as owing to silting it is becoming unsafe to manoeuver steamships. It was suggested that a dam and lock at the Gorge bridge might be a solution of the silting problem. The association's officers for this year are: President, G. A. Kirk; Secretary-Treasurer, T. C. Sorby; Board of Management, J. O. Cameron, C. J. V. Spratt, J. W. Troup, A. Bechtel, C. H. French and L. Gonnason.

The new pilotage regulations, as published in Canadian Railway and Marine World for January, applying to various classes of vessel engaged in British Columbia coastal service, became effective Jan. 1. Under these regulations, ships registered elsewhere than in Canada, engaged exclusively in the coastal trade between any port in British Columbia and any U.S. Pacific port, including Alaska, are compelled to pay pilotage dues on a different basis than Canadian registered vessels. This will effect the C.P.R. s.s. Princess Victoria, and the Grand Trunk Pacific Coast Steamship Co.'s steamships Prince George and Prince Rupert, and it is stated that these vessels will be transferred to the Canadian register.

## Canadian Merchant Shipping Losses During the War.

Canadian Railway and Marine World for January contained a list of Canadian registered vessels lost through enemy action during the war. The information was extracted from a return by the Admiralty presented to the British House of Commons, recently, for which we are indebted to the Deputy Minister of Marine. We have been advised that three sailing ships which were sunk by German submarines, were omitted, as follows,—

Aug. 19, 1915—St. Olaf (s) 323 gross tons, sunk off southeast coast of Ireland.

Aug. 14, 1917—First Prize (s), 227 gross tons, sunk off the English coast.

July 20, 1918—Charles Theriault (s), 339 gross tons, sunk off the Azores.

No lives were lost in either of these disasters.

The sailing ships, Clayton W. Walters and Marion Adams, part of the fishing fleet which was attacked by a German submarine on the Canadian Atlantic coast in Aug., 1918, and which were mentioned in our last issue as having been captured but not sunk, were, at the time we were advised, at Lunenberg, N.S.

## Cunard, Anchor, and Anchor-Donaldson Lines' Atlantic Services.

The Cunard Line is operating a freight service between Canada, London and Avonmouth, Eng., and the Anchor-Donaldson Line is running between Canada and Glasgow, Scotland. All of the Cunard Lines' passenger steamships sailing between Canada and the United Kingdom, prior to 1914, were lost during the war, and new steamships are being built for the service. It is expected that the first of these will be ready shortly after the reopening of St. Lawrence navigation. The steamships operated formerly on the route were: Andania, Auronia, Ascania and Ausonia, and it is said that the steamships now being built will have the same names. The Anchor-Donaldson line is operating two steamships on the Glasgow route and two others are under construction.

In addition to the Canadian service the Cunard Line is operating from New York to London, Plymouth, Southampton, Liverpool, Avonmouth, Eng.; Havre, Cherbourg, France; Antwerp, Belgium; Rotterdam, Holland; Danzig, and Mediterranean ports; from Boston, Mass., to Liverpool, London, and Mediterranean ports; from Philadelphia, Pa., and Baltimore, Md., to Liverpool, and Avonmouth, Eng., and Glasgow, Scotland, and Mediterranean ports; and from Boston, Mass., to Glasgow, Scotland.

The Cunard Steamship Co. is announced to have increased its capital stock from £1,000,000 to £4,500,000, the new shares being offered to present shareholders at the rate of one new share for every two held.

**The Grand Manan Steamboat Co. Ltd.,** has been granted supplementary letters patent, under the New Brunswick Companies Act, increasing its authorized capital from $20,000 to $60,000, and extending its powers, to cover the building, owning and operating of ships of every description, and the necessary structures for navigation and repair of ships.

## Among the Express Companies.

Canadian National Ex. Co. has opened offices at Edson, Dandurand, Jasper, Rosevale and Peers, Alta.

The Canadian Ex. Co., which was fined $200 and costs recently for a breach of the Ontario Temperance Act by carrying intoxicating liquors from one point to another in Quebec (Montreal to Hull), through a portion of Ontario, and appealed, has had the conviction quashed.

The Canadian Ex. Co. was sued at Riverfield, Que., recently, by a local farmer, who claimed $235.85 damages on the sale of 9 pigs, alleged to have become unsaleable, while in possession of the express company for transit between Howick and Montreal. The evidence showed that the plaintiff did not conform to the rules for shipping goods, and that the pigs were shipped without proper wrappings, the judge therefore, disallowed the claim, but as the company had accepted the pigs in an improperly wrapped condition, it was ordered to pay its own costs.

## Telegraph, Telephone and Cable Matters.

The British Secretary of State for the Colonies is reported as being preparing a scheme for Imperial wireless communication to link up all Britain's overseas possessions for commercial purposes.

Telephone communication was established between Ottawa, Ont., and Halifax, Jan. 22, the distance covered being approximately 1,300 miles, the connections being made by 4 telephone companies, one of which is a United States one.

The U.S. Government has completed, what is said to be the largest radio-telegraph station in the world, at Bordeaux, France, and it is stated that it will be in full operation in the spring. The aerials are swung upon 8 steel towers, each 900 ft. high.

The Great North Western Telegraph Co. has opened offices at Black Cape, Montmagny and Prouxville, Que., Burwash, Ont., and Birch River, Man., and has closed its offices at Little Metis lighthouse and Perthuis, Que., Beamsville, Beaumaris, Cardinal Canal, Carpenter (Winona), Mille Roches, Wilgar and Wyebridge, Ont.

The Montreal Telegraph Co.'s report for 1919 shows cash, accounts receivable, bonds and other securities as $163,483, and liabilities $132,586. The total assets are given as $2,315,307 against $2,314,422 in 1918. The usual dividends amounting to $160.000, were paid during the year and the directors were re-elected for this year.

The Commercial Cable Co. announced early in January that the direct trans-Pacific cable to Manila has been broken, owing to coral formation. The break, it is stated is between Guam and Manila, where it broke early in 1919, when traffic was suspended for about 10 weeks. It is expected to have the cable in operation again early in February.

**Restrictions on Immigrants**—An order in council was passed recently, providing that immigrants into Canada from overseas who are mechanics, artizans, or laborers, skilled or unskilled, must on landing in Canada be in possession of $250, as well as transportation to destination. This restriction is in force until March 31, unless otherwise ordered.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Taylor & Arnold Ltd.**—Railway and Marine Supplies, Montreal, has changed its name to Taylor & Arnold Engineering Co. Ltd.

**Caldendars**—Wall calendars for 1920 have been received from American Steel Foundries, Chicago; John Bertram and Sons, Dundas, Ont.; Cunard Steamship Co., Montreal; Dearborn Chemical Co., Chicago and Toronto; Lyman Tube & Supply Co., Montreal; Pratt and Whitney Co., Dundas, Ont., Taylor & Arnold Engineering Co., Montreal.

**Davis-Bournonville Co.**, Jersey City, N.J., and Niagara Falls, Ont., has issued an illustrated bulletin of 4 pages on its lead burners, outfits for welding lead sheets, storage battery connectors, lead pipes, chemical apparatus, and all lead work. The company has also issued the January number of its quarterly publication, "Autogenous Welding," which is devoted to oxy acetylene welding and cutting, and the education of operators.

**Wilt Twist Drill Co. of Canada**, Walkerville, Ont.—F. R. Humpage, Vice President and General Manager, has resigned to take effect Mar. 31. He has been in ill health for some time, and felt it necessary to divorce himself for the time being from all business activities and he left towards the end of January for Miami, Florida, where he expects to remain a sufficient length of time to secure entire restoration of health. He has been connected with the company for about 3½ years, during which, it is said, he has been successful in more than trebling the output and sales of the factory and has also added new lines to the company's products, among them being that of the manufacture of reamers and milling cutters on a large scale and more recently the manufacture of a full line of special Ford reamers.

## Transportation Conventions in 1920

Feb. 10-12—American Wood Preservers' Association, Chicago, Ill.

Mar. 16-18—American Railway Engineering Association, Chicago, Ill.

May—Association of Railway Claim Agents. Atlantic City, N.J.

May—International Railway Fuel Association. Chicago, Ill.

May 5-7—Air Brake Association, Chicago, Ill.

May 12—Railway Accounting Officers' Association, Washington, D.C.

May 25-28—Master Boiler Makers' Association, Minneapolis, Minn.

June—American Association of Freight Agents.

June 9-16—American Railroad Association's Mechanical Section, Atlantic City, N.J.

Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.

Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.

Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom 909 Shaughnessy Bldg., Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.
Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.
Niagara Frontier Summer Rate Committee, James Morrison, Montreal.
Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.
Railway Association of Canada—W. M. Neal, Montreal.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.
Transportation Club of Vancouver — H. W. Schofield, 556 Church St., Vancouver, B.C.

# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.
Allow five words where replies are to be sent to a box number. Minimum order—$1.
Rates under other headings and for display advertisements on application.

## Manager Wanted, for Canadian National Newspapers & Periodicals Association

To act also as Secretary-Treasurer, and carry on the Association's general work, under the direction of the President and the Board of Directors, study the interests of the various classes of publications in the Association, and plan and carry on promotion work in their interests. Applicants should understand advertising and merchandising.

Apply in writing only, stating age, full details of experience, and salary expected. Applications will be treated as confidential.

Address Acton Burrows, President, Canadian National Newspapers & Periodicals Association, 70 Bond Street, Toronto.

## SALE BY THE NAVY

## Of Submarine Chasers—

## Nos. 135, 136, 210, 211, 107, 216, 37, 44, 45, 47, 95, 178, 181, 182, 207, 272, 356, 436, 11, and 291.

There will be sold by sealed proposals, receivable at the bureau of Supplies and Accounts, Navy Department, Washington, D.C., until 12.00 o'clock noon, 28 February, 1920:—

SUB-CHASERS Nos. 135, 136, 210 and 211, now at the Navy Yard, Washington, D.C.

SUB-CHASERS Nos. 107 and 216, now in the First Naval District, Navy Yard, Boston, Mass.

SUB-CHASERS Nos. 37, 44, 45, 47, 95, 178, 181, 182, 207, 272, 356 and 436, now in the Third Naval District, Fleet Supply Base, 29th St. and 3rd Ave., Brooklyn, N.Y.

SUB-CHASERS No. 116, now in the Fifth Naval District, Naval Operating Base, Hampton Roads, Va.

SUB-CHASER No. 291, now in the Thirteenth Naval District, Navy Yard, Puget Sound, Wash.

Exact location may be ascertained from the Commandant of the district concerned, and should be obtained before making trip for inspection. Sales will be for cash to the highest bidders. $25.00 deposit required with bid. Right to reject all bids reserved. Catalogs of Sale and full information concerning the vessels, and the terms of sale, obtainable from the bureau of Supplies and Accounts, or Commandants of the above districts, JOSEPHUS DANIELS, Secretary of the Navy. 1-16-20.

## "SOLID AS THE CONTINENT"

**The business for 1919 further established the strength and security of the North American Life. To-day the financial position of the Company is unexcelled.**

Note these record figures:—

| | |
|---|---|
| Policies Issued and Revived | $22,199,547.00 |
| Total Policies in Force | 84,597,490.00 |
| Assets | 18,869,550.26 |
| Payments to Policyholders in 1919 | 2,299,854.97 |
| Net Surplus | 2,694,338.13 |

The North American Life is a "Policyholders' Company," over 99% of the profits earned being paid to holders of our policies. Your interests are paramount. If you are contemplating new insurance, see our representative. Get a copy of our 1919 report from him.

## NORTH AMERICAN LIFE
### ASSURANCE COMPANY

*"SOLID AS THE CONTINENT"*

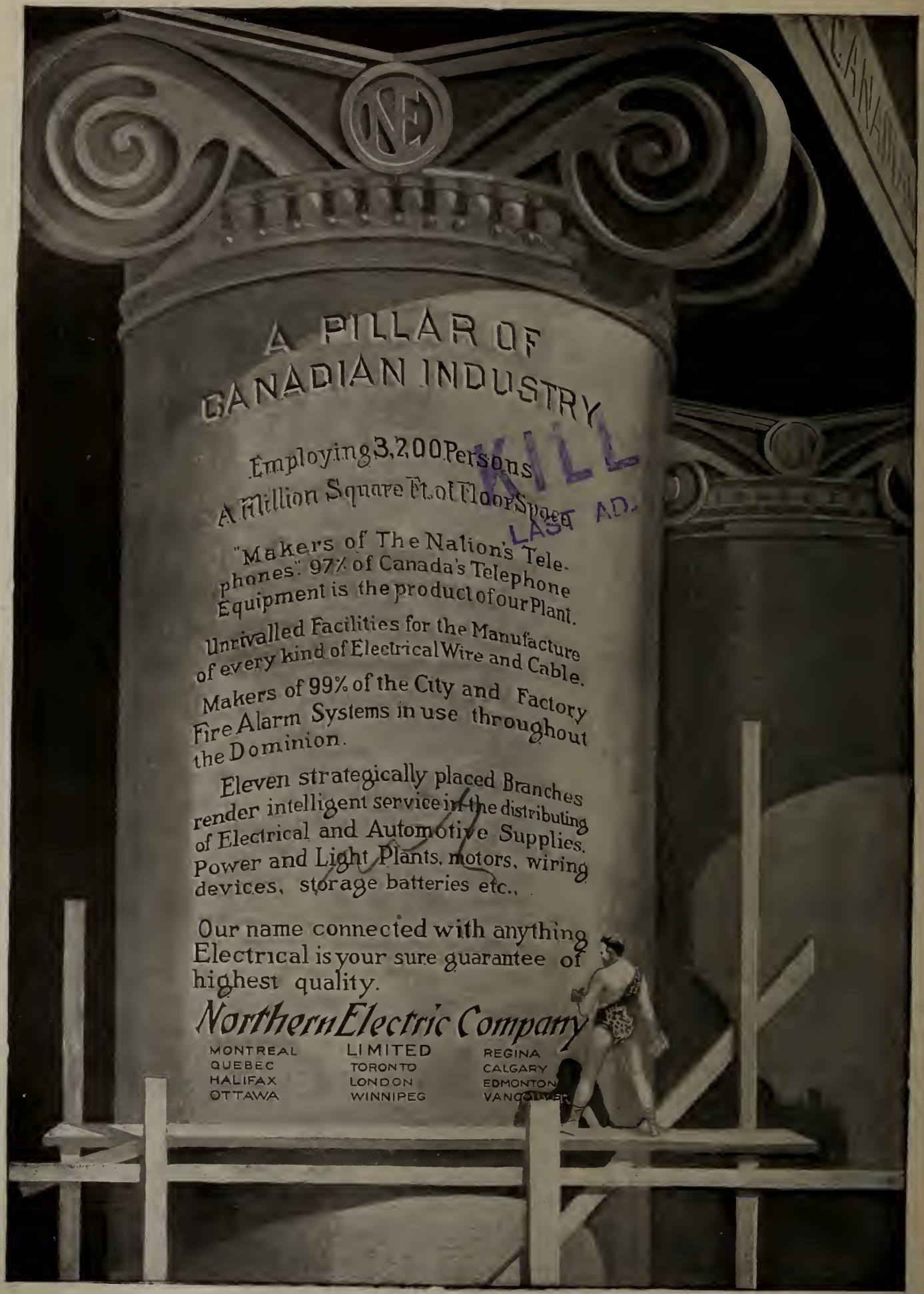
**Home Office: Toronto, Canada**

L. Goldman, President and Managing Director
W. K. George, First Vice-President
Lt.-Col. D. McCrae, Second Vice-President

—Directors—

Hamilton Cassels, K.C., John N. Lake
J. A. Paterson, K.C., M. J. Haney
C. W. I. Woodland, E. Holt Gurney.

W. B. Taylor, B.A., LL.B., Secretary, C. W. Strathy, Treasurer.
D. E. Kilgour, M.A., A.I.A., F.A.S., Actuary, T. D. Archibald, M.D., Medical Director.
E. J. Harvey, Supervisor of Agencies.


A PILLAR OF
CANADIAN INDUSTRY
Employing 3,200 Persons
A Million Square Ft. of Floor Space
"Makers of The Nation's Telephones". 97% of Canada's Telephone Equipment is the product of our Plant.
Unrivalled Facilities for the Manufacture of every kind of Electrical Wire and Cable.
Makers of 99% of the City and Factory Fire Alarm Systems in use throughout the Dominion.
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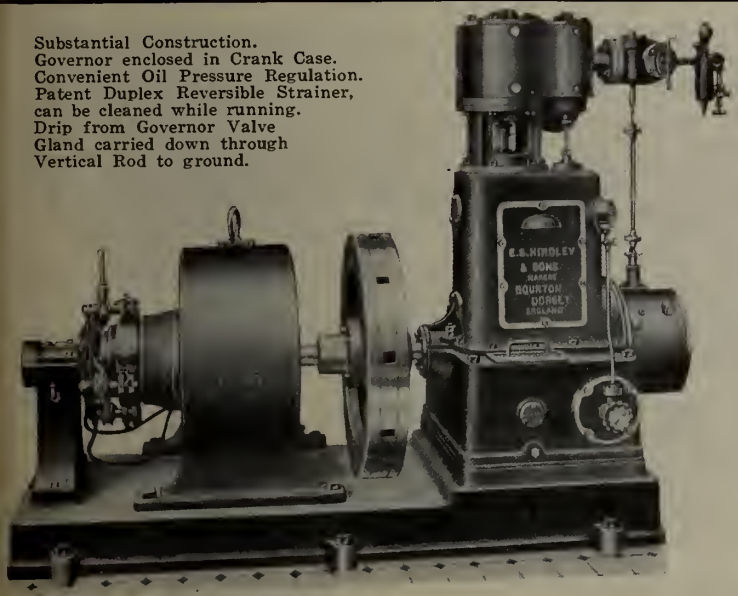
Drip from Governor Valve Gland carried down through Vertical Rod to ground.



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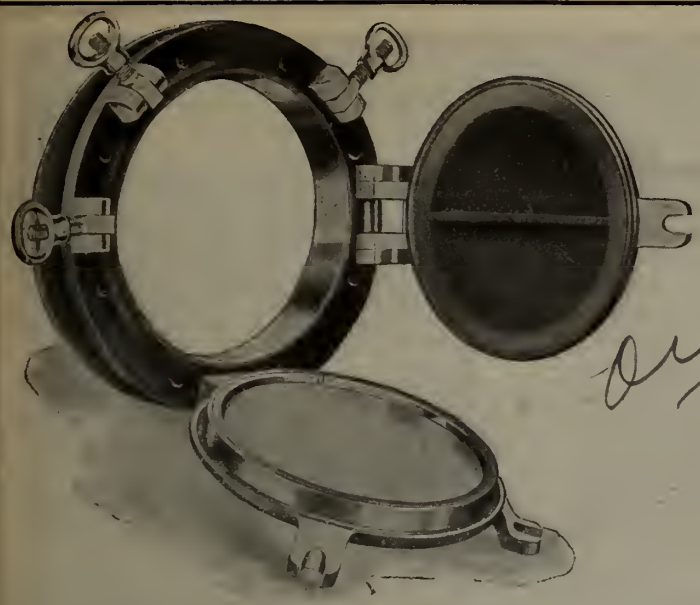

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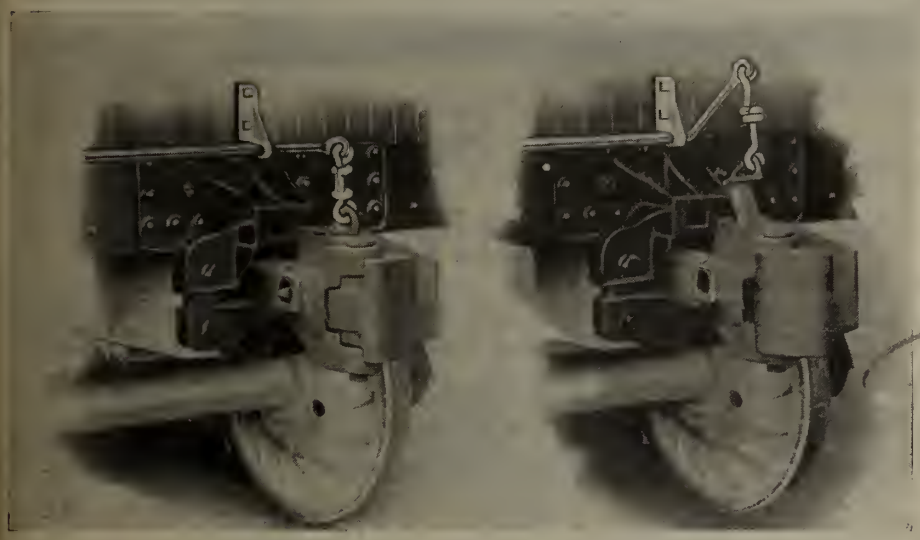

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This hoist should be at every Division Point.

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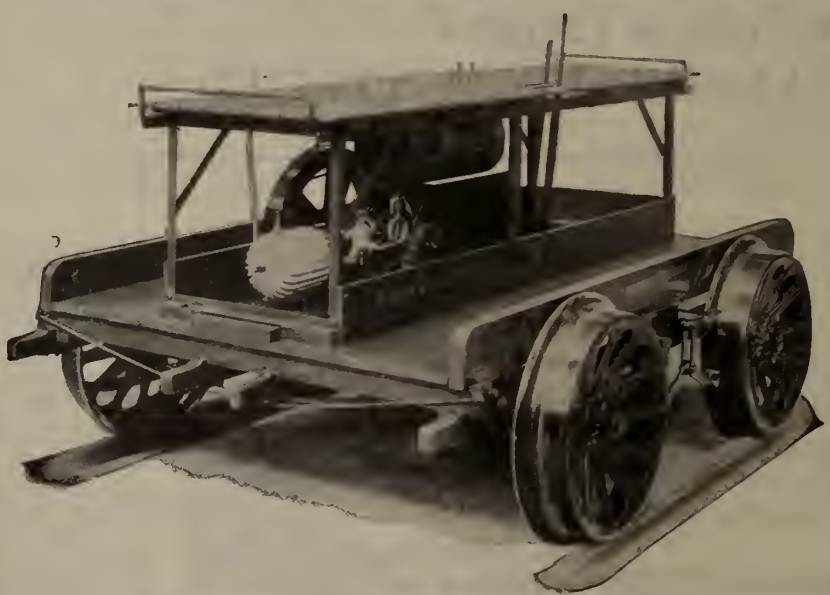

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If you want to know about Franklin Wedge Engines ask the man who runs one

"Franklin Automatic Wedges are keeping my engine from pounding herself to pieces these zero days. The round house has no chance to set up wedges. Because of power shortage my engine is running first in first out. With my eyes closed I could tell the difference between my engine and the engines that have been pounded to pieces by hand set slack wedges. The sound of the rods tell the story."

An old runner who temporarily lost his assigned engine said this of Franklin Automatic Wedges.

It's the best argument we know of for Franklin Wedges.

**Franklin Railway Supply Co. of Canada Limited**

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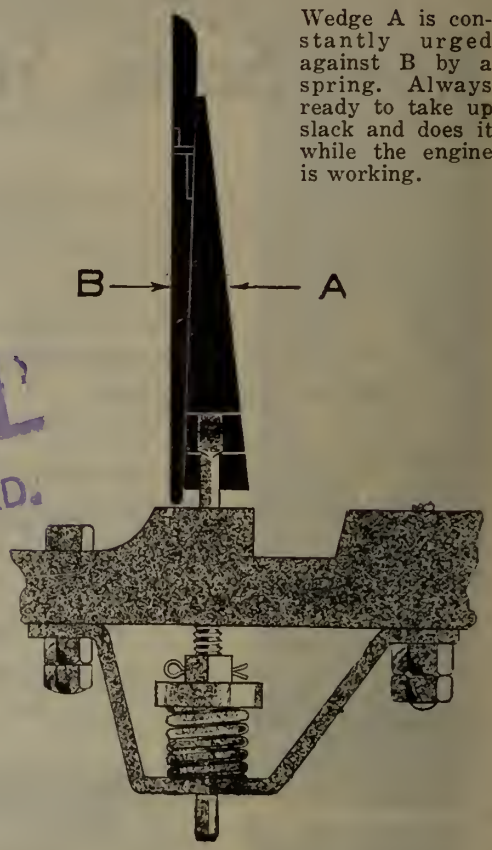


Wedge A is constantly urged against B by a spring. Always ready to take up slack and does it while the engine is working.

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The Bolinder-engined M.S. "Teco" operates at a cost of only

## 8½ cents a mile

The "Teco" is a vessel of 300 tons carrying capacity, owned by The Taylor Engineering Co. Ltd., Vancouver, B.C.

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The "Teco" is a typical example of

Bolinder Service, Economy and Dependability.

The M.S. "Teco," equipped with one 160 B.H.P. Bolinder Engine.

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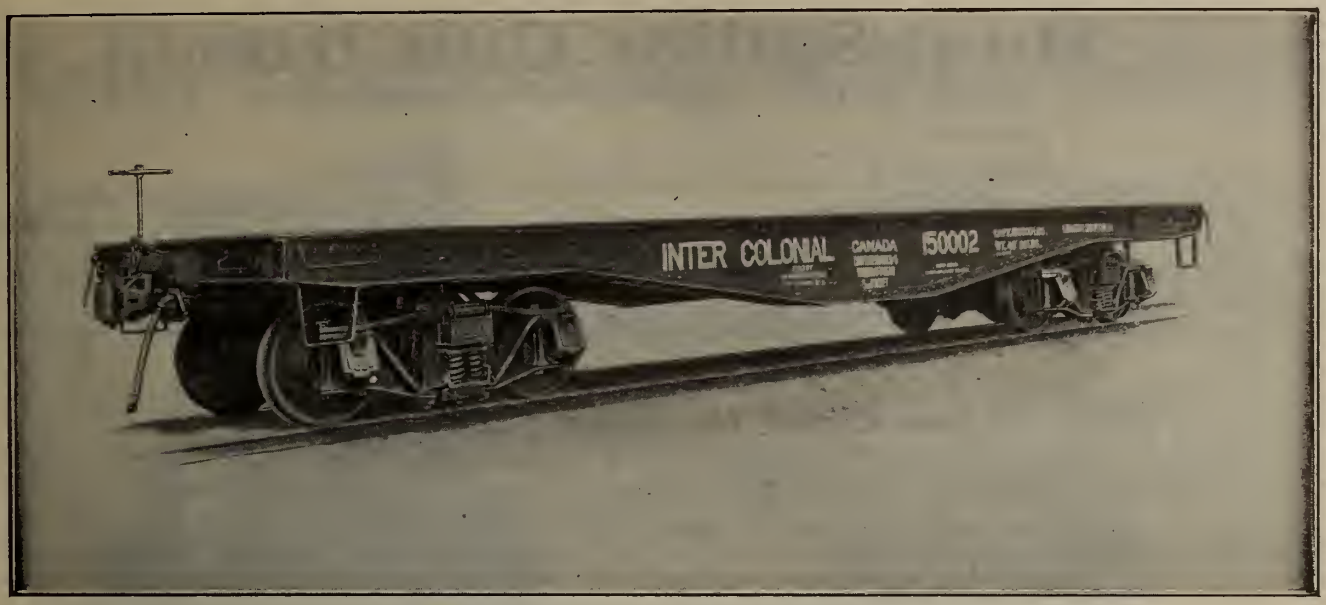


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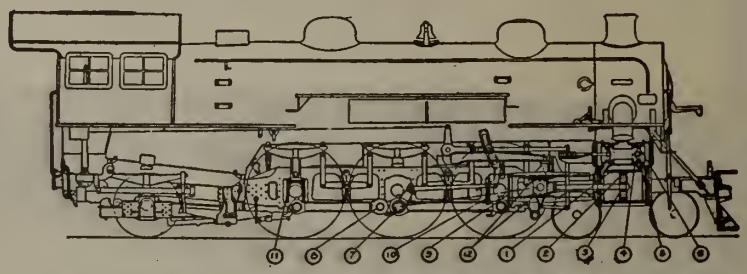

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You would realize why Hunt-Spiller Gun Iron insures dependable service.

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Office and Works:
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GRAND TRUNK RAILWAY SYSTEM

## WINTER TOURS
TO
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**Or to some other Pacific Coast Point or to**

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| Alabama | Florida | New Jersey | South Carolina |
| Arizona | Georgia | New Mexico | Texas |
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**Tickets on Sale Now** **Stop-over Privileges Allowed**

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**Passenger Traffic Manager**
**Montreal**

**W. S. Cookson**
**General Passenger Agent**
**Montreal**

# Robb Engineering Works, Limited

40" Stroke Engine Built for Imperial Munitions Board.

BUILDERS OF

Marine Engines
Scotch Boilers
Water Tube Boilers
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**Works - Amherst, N.S.**

**Head Office - Box 780, Montreal**

# It's Almost Incredibly Easy to Instal

# PEDLAR'S "PERFECT" TONCAN METAL CULVERTS

You simply order a sufficient number of sections to equal the length of your fill, have them delivered right to the job, assemble them with our special coupling bands—and then roll the whole thing as a unit into your trench. That's all!

And here's another thing, your trench can be dug as close to the actual dimensions of the culvert as you find practicable, for there is no work to be done in the trench after the culvert is rolled into position. All that is needed is to tamp the earth well around it, fill in the hole and the job is completed.

Once done, the job is done practically forever. Pedlar's "Perfect" Toncan Metal Culverts will not rot or corrode. Nor will they be affected by frost or ice. The deep corrugations added to the cylindrical strength makes them capable of standing up under the heaviest loads whether continuous or intermittent.

*Write for Culvert Booklet, "R.M."*

## THE PEDLAR PEOPLE LIMITED

(ESTABLISHED 1861)

**Executive Offices and Factories: Oshawa, Ont.**

Branches: Montreal Quebec Ottawa Toronto Winnipeg Vancouver

# Marine Auxiliaries

**Reliable, Efficient and High-Grade**

Reilly Submerged Type Evaporator

We make and supply—
Reilly Feed Heaters, Reilly Evaporators,
Reilly Feed Filters, Reilly Distillers,
Mason Reducing Valves, Mason Pump
Regulators.

"MADE IN CANADA" and guaranteed
as to construction and service.

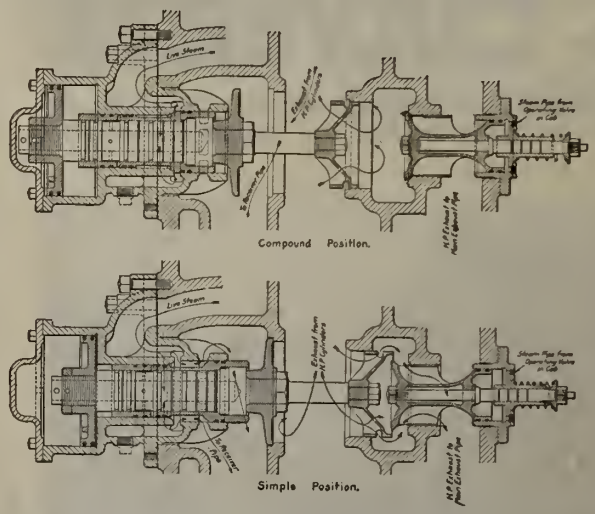
*We sell a general line of high-class and reliable Power Plant Equipment.*

Mason No. 126 Style Marine Reducing Valve.

## The Mason Regulator & Engineering Co. Limited

Office and Works:
135 to 153 Dagenais St. - - - - MONTREAL

# Alco Intercepting Valve




In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

In the ALCO system of compounding these conditions are covered by two of the functions of the intercepting valve.

As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

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DOMINION EXPRESS BUILDING, MONTREAL, CANADA

# Chausse Vulcan Kerosene Torch

**Satisfactory**
**Inexpensive**
**Efficient**
**Reliable**

**Weight 30 lbs. filled with 3 gals. Fuel**

## For Pre-heating, Tempering, Thawing Drying, and General Utility Shop Work

These torches are widely used in railroad, industrial, ship building and municipal service. Their dependability and superiority have been proven.

They will burn in any position and will not be extinguished by wind or rain. One man can operate them. Excellent for thawing ground, etc.

KILL
LAST AD.

*For full particulars and prices write*

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**133 Eastern Ave. Toronto, Ontario**

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STERLING

The "STERLING" Blade is a Brand of highest quality, and is known the world over for its efficiency and economy. The best steel that can be procured is used in their production, together with skilled workmanship of many years experience, enabling us to give the trade a strictly first class blade. They are made in all lengths and widths from 8 by ½ inches to 36 by 2 inches inclusive, and in gauges to give best results, varying pitch of teeth to suit the job.

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Money invested in "STERLING" Blades will give you full returns.

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**PAXTON-MITCHELL LTD.**
Piston Rod and Valve Stem Packing for Super Heat and Saturated Steam.
"Packing that Packs." Manufactured in Canada.

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Pneumatic Tools. Tools that are guaranteed.
Ask for trials or tests and satisfy yourself.

**THE "IMP" DROP-FORGED RIVET SET**
Made in Canada from steel made in Canada.
Conduct Break-down test; satisfy yourself.

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Once tried always used. Convince yourself—ask for trial. Apply and operate wherever Jacks can be used. Note results.

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All that its name implies. Good materials are only determined by results obtained in service. Ask about it. This is a Packing that overcomes the necessity for carrying many styles and sizes. "INTERNATIONAL" PLASTIC METALLIC conforms to all sizes and shapes of stuffing boxes.

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Something simpler and better.
We carry in stock full line of Round House, Back Shop and Machine Shop Supplies.

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**Money Saving and Efficient**
**The HOLD TITE NUT LOCK**

**STATEMENT**

Showing comparative cost using a Standard Nutlock now on the market and the HOLD TITE NUT LOCK as applied to the car body of a standard 40 top box car.
STATEMENT was prepared from the specifications of the body of a standard box car which include the truck.

Summary

| | |
|---|---|
| Total Cost using a Standard Nutlock on one Box Car Body | $3.36 |
| Total Cost using the HOLD TITE NUT LOCK on one Box Car Body | 1.51 |
| Difference in Cost (per car) in favor using the HOLD TITE NUT LOCK | $1.85 |

WHAT MORE? NOTE THE SIMPLICITY—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.
If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

Why not save this Cost by always using the HOLD TITE NUT LOCK?
The cheapest device used; absolutely effective. Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

**Edward A. Robinson Co., Ltd.** 228 Craig St. West Montreal

THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF

The Triple - Voltage Dry Battery made especially for railway motor car ignition

Portable, high power, moisture proof, and long lived — built to resist abuse

**Columbia Hot Shot Battery**

*"higher service—lower cost per day"*

Canadian National Carbon Company, *Limited*, Toronto, Ontario

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Chilled Tread Cast Iron Car Wheels for All Services
Cast Iron Water, Gas and Culvert Pipe,
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TAPS—DIES—REAMERS—DRILLS

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Makers of Base-Supported and 100% Rail Joints for Standard, Girder and Special Rail Sections. Also Joints for Frogs and Switches, Insulated Rail Joints and Step or Compromise Joints.

***PROTECTED BY PATENTS*** ***Grand Prize, San Francisco, 1915***

# Thomas Rail Anchor Tie Plate

**Chicago Malleable Castings Co., West Pullman, Chicago, Ill.**

Rail Seat inclined and pedestaled
Hook on inside flange of Rail

THE RIGHT WAY—
THE TWO WAY—
THE TIGHT WAY

**MADE IN CANADA**

*Canadian Representative*

**The General Supply Co of Canada, Limited**
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Winnipeg, Vancouver

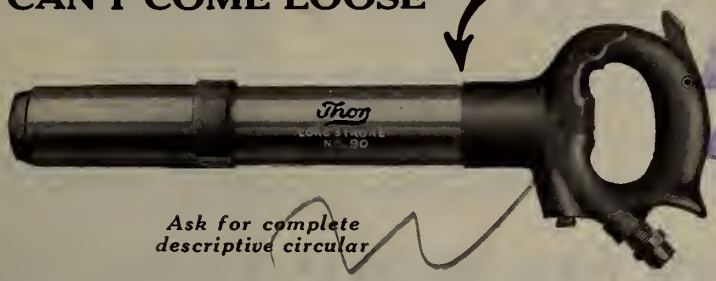
Thor

# One-Piece Pneumatic Long Stroke Hammers

"FOR SPEED, POWER AND DURABILITY THEY HAVE NO EQUAL,"
Says a Foreman in One of the Largest Shops in the South

**CAN'T COME LOOSE**

No Coupling between barrel and handle




The leading shops all over are making Thor Hammers their standard for the reason that they "deliver the goods" on any job.

More rivets per day if you drive the THOR way.

*Ask for complete descriptive circular*

**Independent Pneumatic Tool Company**

*Canadian Office:*—334 St. James St., Montreal, Que.

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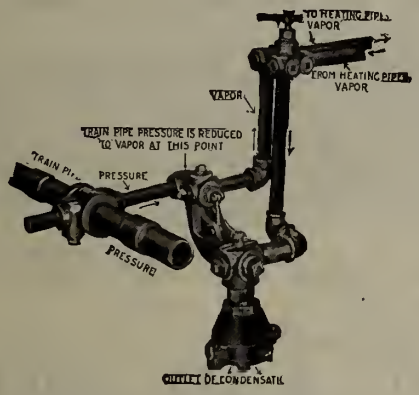
# VAPOR CAR HEATING CO. of Canada, Limited

**MADE IN CANADA AT**




THE
# VAPOR SYSTEM
OF
# CAR HEATING

**61 DALHOUSIE STREET - MONTREAL, QUEBEC**

F. A. PURDY, SALES REPRESENTATIVE. S. P. HARRIMAN, ASS'T. TREASURER.

## FIRE TUBE SUPERHEATERS SAVE 18% IN FUEL OR $47.91 PER HUNDRED MILES

Compare the cost of operating these three ships:

| | Ship A 200° S.H. | Ship B 100° S.H. | Ship C Saturated |
|---|---|---|---|
| Distance run (Miles) | 22,191 | 22,080 | 22,240 |
| **Coal per day (tons)** | **37.8** | **45.3** | **46.1** |
| Coal per 100 miles (tons) | 16.0 | 17.9 | 18.7 |
| Coal per 100 miles (relative) | 85.5 | 95.7 | 100.0 |
| **Cost in dollars of coal per 100 miles** | **186.38** | **190.40** | **234.29** |
| Cost of coal per 100 miles (relative) | 79.5 | 81.3 | 100.0 |
| Mean working displacement | 13,500 | 13,000 | 13,100 |
| Coal per 100 displacement ton miles, lbs. | 2.62 | 3.03 | 3.19 |
| Coal per 100 displacement ton miles (relative) | 80 | 95 | 100 |

These ships are identical in hull sizes, and run over the same route at approximately the same season of the year.

All three ships are fitted with identical triple expansion engines and they have been free of any operating difficulties in the three or four years they have been in this service.

The highest economical performance of your ships is possible only when they are equipped with fire tube superheaters.

They can be easily applied when the ship is in port.

**Locomotive Superheater Co.**

***Designers and Builders of Marine Superheaters***

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COMPLETE EQUIPMENT FOR ELECTRIC OR GAS LIGHTING OF RAILWAY PASSENGER CARS.

COMPLETE APPARATUS FOR HARBORS & RIVERS—BUOYS, BEACON TOWERS & LANTERNS.

**THE SAFETY CAR HEATING AND LIGHTING CO.**

**621 Transportation Bldg., Montreal**

Established 1866.

## BRIGGS' Bituminous Enamels and Solutions

**made by Wm. Briggs & Sons, Ltd., Dundee, Scotland,**

***The Most Efficient Anti-Corrosive in the World***

Briggs' Solutions have been applied to some of the largest liners and warships afloat. A ship can be coated more economically and effectively with Briggs' Solutions than with any other so-called rust-resisting paint manufactured. It will penetrate the pores of the metal, and gives a glossy, flexible, adhesive, imperishable coating.

Used with remarkable success on the Forth Bridge, after the most expensive lead, oxide and zinc compositions had failed to protect this structure from corrosion.

Specify Briggs' Solutions for painting any iron and steel work.

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Write our nearest office for literature and prices.

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**Micrometers B. & S.**

**"Vulcan" Pipe Vises and Pipe Wrenches**

In addition to the tools shown, our line includes Set Screws, Cap Screws, Machine Screws, High Speed and Carbon Drills, Files (extra large stock) and a complete line of machinists' tools (Starrett, Brown & Sharpe, etc.)

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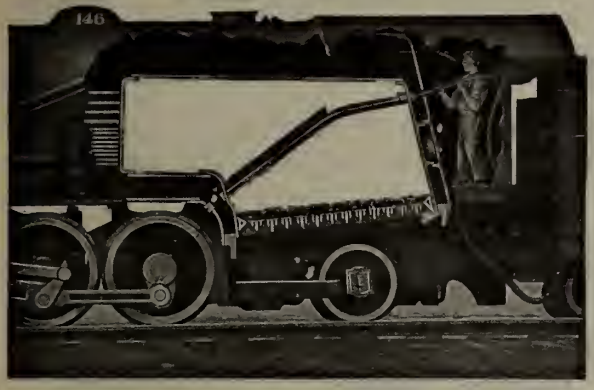
**"Red Hot" Torches.**

Lagonda Arch Tube Cleaner



Lagonda Cleaner Removing Scale from Arch Tubes.

# Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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We are not egotistical but we believe you'll like to see the kind of Plant you'll likely send your next order for Boilers to.

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**ASBESTOS AND MAGNESIA MATERIALS**

Locomotive Lagging
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Locomotive Packings, including Air Pump, Throttle, Valve Stem, Cab Cock, Gaskets, etc.
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**POWER PLANT SPECIALTIES**

Pipe Coverings for all classes of service.
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**FOR AIR BRAKES ON LOCOMOTIVES AND CARS**

Automatic Slack Take-up.
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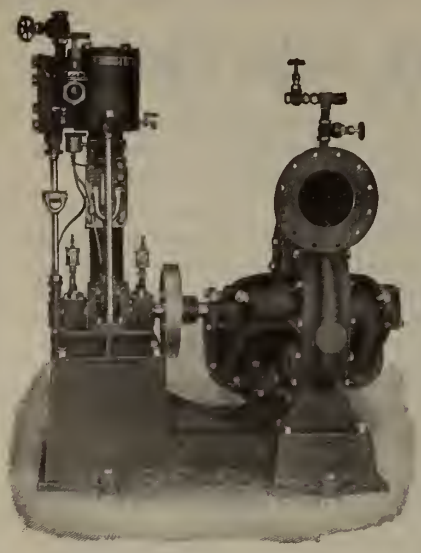

We are making a complete line of PUMPS

**Vertical and Horizontal Steam and Power**

Our lines are the result of years of careful perfecting of design, and we are using only the best labor and material available.

**Every Pump Carefully Tested Before Being Shipped.**

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**THE PYLE-NATIONAL COMPANY**

Type "K-2" 500 watt 32 volt Turbo-Generator

*Manufacturers of*

Locomotive Headlights
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of all descriptions

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**BUFFALO BEAMS ARE BEST BEAMS**

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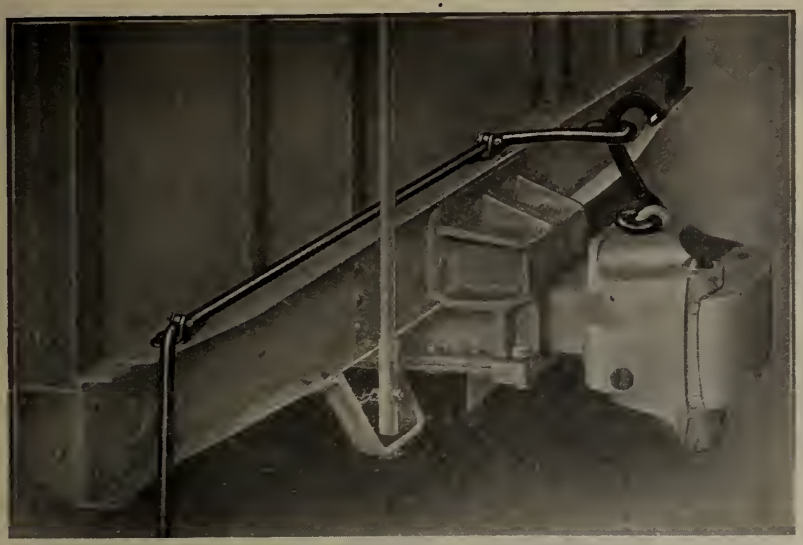
**Canadian Works: HAMILTON, ONT.**

Brake Beams for all Classes of Cars, Locomotives and Electric Equipment



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TYPE B
RELEASE RIGGING
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LINK TO SAFETY

Not a penalty defect in 100,000.

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25 Tons 1⅛" Cruciform Section Solid Drill Steel
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Will receive bids on lot or any portion above Steel for immediate delivery. Guaranteed quality.

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EQUITABLE CONTRACT RELIEVING SHIPOWNERS OF RESPONSIBILITY

Concerning maintenance of the Apparatus—Compliance with Government Regulations—Handling of Traffic, Accounting, Etc.

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MADE AND INSTALLED
FOR SHIP LIGHTING AND POWER DISTRIBUTION

*Communicate Your Requirements to :*

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Triple Elliptic Tender Spring, Cast Ends

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LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.
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STREET RAILWAY SPRINGS, from the largest to the smallest.
TRACK TOOLS, RAIL BRACES, TIE PLATES, GUY ANCHORS AND RODS, LOCOMOTIVE SANDERS, CHAIN, Etc.

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AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps*
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SWITCHES
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**Clam Shell and Orange Peel Bucket**

This illustration shows four O.S. 25-ton Steam Locomotive Cranes installed at the Pensacola Yards, Pensacola, Fla. These Cranes are used for material handling.

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Let us help place your finishing department on a one hundred per cent efficiency basis.

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Manufacturers of PIG IRONS—SAND and MACHINE CAST—FOUNDRY and BASIC

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(Both Ways)

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Standard Sleeping, Dining, Tourist and Colonist Cars. First-class Day Coaches. Parlor Car through the Rockies.

Sunday, Monday, Wednesday, Friday
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Via G.T.R., North Bay, Cochrane and Canadian National.

Further information from Canadian National Ticket Agents, or
GENERAL PASSENGER DEPARTMENT, TORONTO

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**Canadian National Railways**

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The ideal signs for

Steam and Electric Railways,
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Express Companies.

We supply them in any sizes and colors, for station names, door signs, route numbers, etc.

Guaranteed not to fade or be affected by the weather in any way.

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FOUNDRIES & FORGINGS, LIMITED
WELLAND, ONT

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**TUBES**
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Copper, Brass, Bronze and Copper Clad Steel. Bare and Insulated.

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Lead Covered and Armored.
All Insulations. All kinds of service.

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## Let the First Coat Be of Carter's Genuine Red Lead

Whether it's a steel or wooden hull, steel piping or metal work, a good first coat of Carter's Genuine Red Lead will protect the surface from rust or corrosion.

Even where there are defects in the surface to be painted the preservative properties of Carter's Genuine Red Lead will assure permanent protection at little cost.

Write for prices and ask about the other Carter products—Genuine Orange Mineral, Genuine Dry White Lead and Litharge.

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Imperial Protection. Accident and Sickness Insurance
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Locomotive
Turntables
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Structural
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Marine Engines—Boilers—Tank and Plate Work
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The *Fairmont* 2-cycle motor car engine is *different.* It starts easily, and runs without missing or wasting gas at *low* as well as *high* speed.

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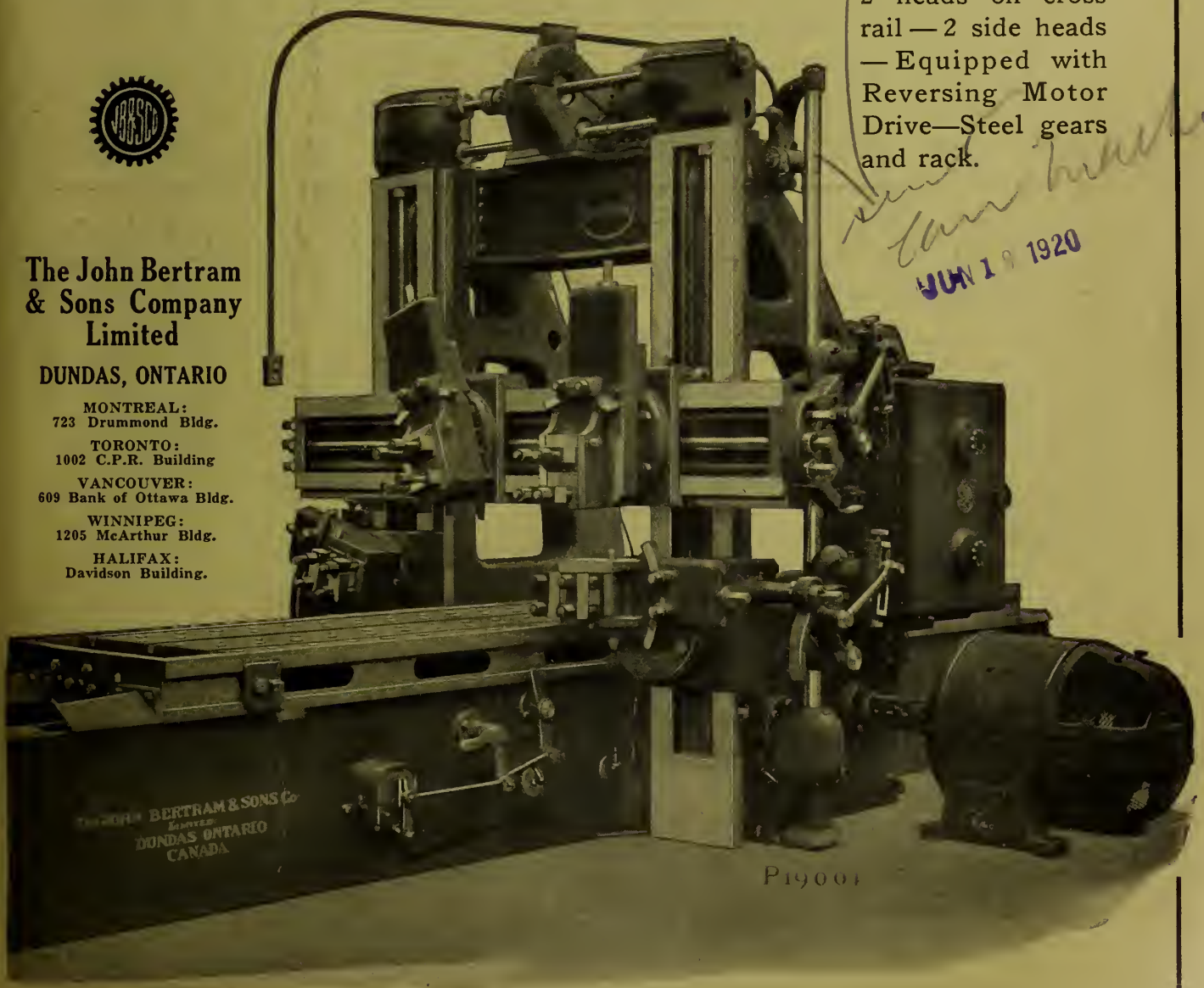


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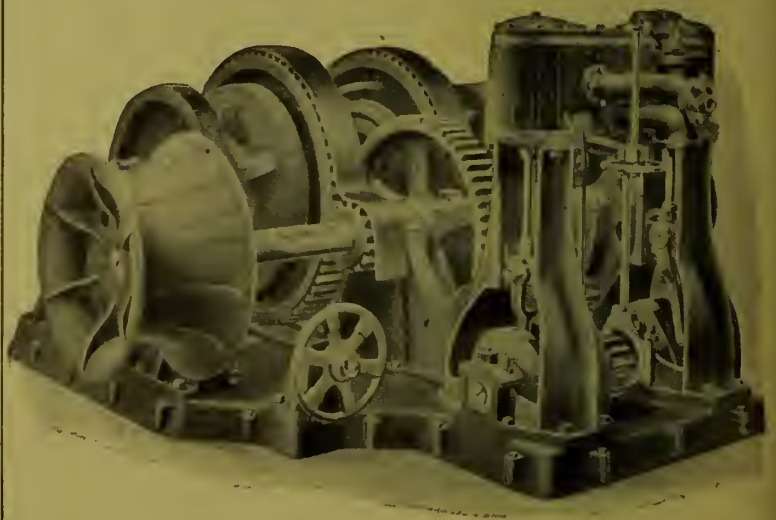

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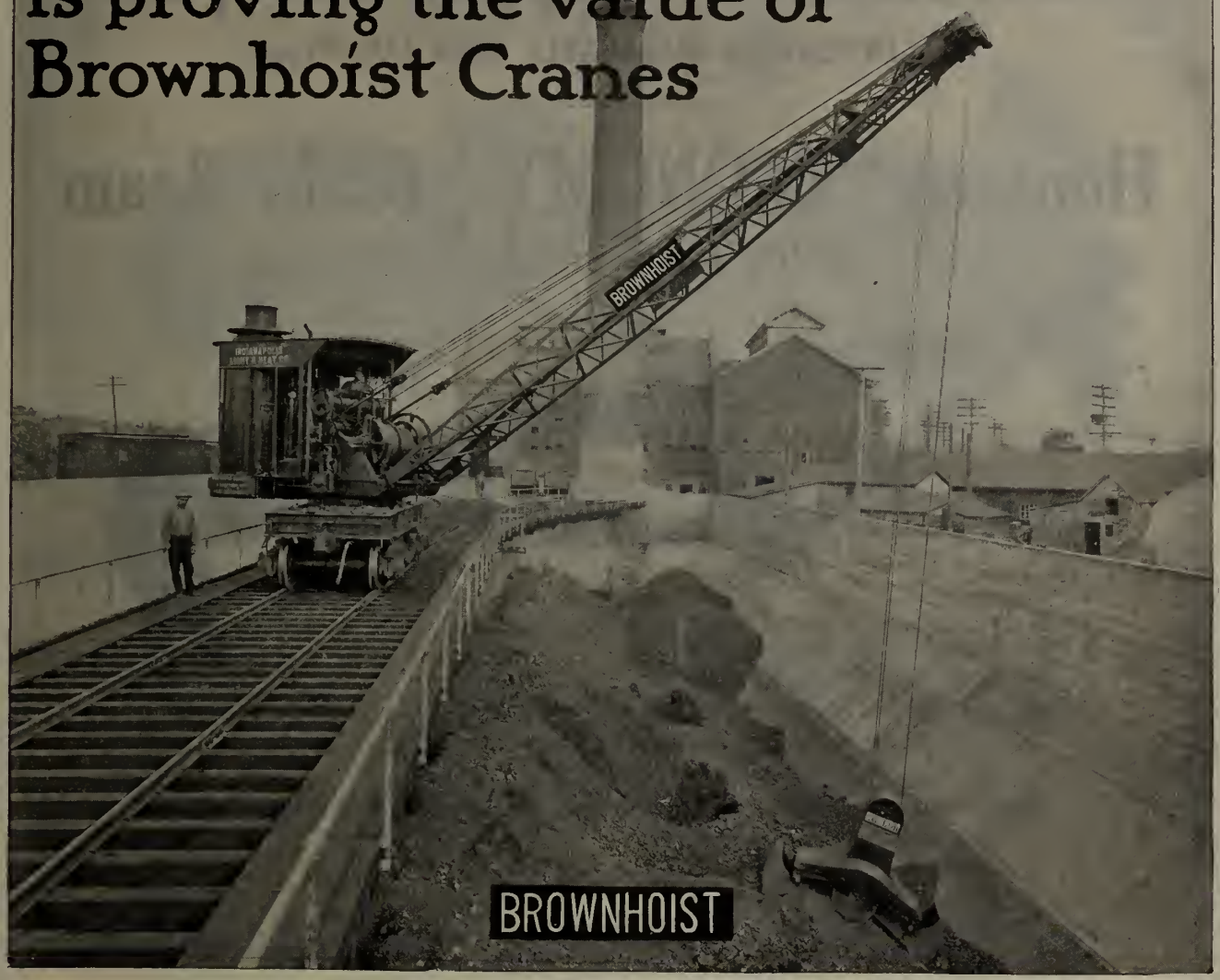
# Day and Night Service
## is proving the value of Brownhoist Cranes




KILL
LAST AD.

## Brownhoist

**Locomotive Cranes and Buckets**

are used in all parts of the world. They make an excellent combination for handling bulk materials, such as coal, coke, stone, etc. Each is strongly built, as the users will tell you. And they will give continuous service, day and night, if necessary.

*Write for Catalog K.*

## For Hard Steady Work

The Brownhoist shown above is used at one of the country's big power houses. Its job is to keep a constant supply of coal on hand in the power house for the stokers. And as the fires are kept up every hour of the 24 the crane is kept busy most of the time. There is a lot of coal to be handled and if the Brownhoist should fail, the entire plant would be crippled. The owners had to have a crane they could rely on.

It is on this hard, steady work that Brownhoist quality proves its value. Brownhoist cranes are speedy and elastic but, above all, dependable. If you have any handling job, might it not be to your interest to take advantage of our long crane experience? We will gladly consult with you on any handling problem.

## The Brown Hoisting Machinery Company

**40 Years in Crane Business** — **Cleveland, Ohio, U.S.A**

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists

Branch Offices in New York, Pittsburgh, Chicago and San Francisco
European Rep., H. E. Hayes, 12 Rue de Phalsbourg, Paris

# Joliet Railway Supply Company

**NORTHWESTERN MALLEABLE IRON CO., Props.**

## Huntoon "ECONOMY" Brake Beam

*With Reversible Strut*

No nuts to get loose and fall off.
No threads to strip or rust off.
No danger of tension member becoming cut by wheel flange.
No pockets in heads or beam to collect or hold moisture.
No key slot in strut to cause breakages.
Heads are one pattern for each beam, which with the **Reversible** Strut means—

Only **one Beam** to carry in stock.
Only **one Strut** to carry in stock.
Only **one Head** to carry in stock.

The great popularity and wide success of the Huntoon **"Economy"** Beam has been due to its durability, and the above features, which make it a **Universal** beam.

Also manufacturers of—

Truss Rod Brake Beams.
The "Huntoon" Truck Bolster.
"Pilcher" Trussed Steel Side Frame.
"Joliet" Journal Boxes.
"Peerless," "Perry" and "Burry" Side Bearings.

**GENERAL OFFICES:**
**Railway Exchange Bldg., Chicago**

**WORKS:**
**40th St. and Princeton Ave., Chicago**

**CANADIAN REPRESENTATIVES:**
**Moore, Cameron & Hill, Limited**
**284 Beaver Hall Hill, Montreal**
**431 McIntyre Block, Winnipeg**

# EYES THAT COMMAND

THE eyes that read Canadian Railway and Marine World are the eyes that command; and the hands that turn its pages are the hands that direct.

For our readers are Canada's MASTERS of land and water transportation, and their skilled subordinates. They are the men who build and equip and operate our steam and electric railways, and the men who design, build, equip and operate Canadian ships, on both salt and fresh water.

One group of shipbuilding subscibers, representing only 15 shipbuilding corporations is now executing government contracts for 60 steel cargo steamships, aggregating 359,945 deadweight tons, at a contract price of $69,522,260.00, and this is only a beginning.

Three systems of Canadian railways are understood to purchase current equipment and supplies averaging $245,000,000.00 a year—not counting extension of lines—and, the men who do the specifying, the deciding and the buying are all readers of Canadian Railway and Marine World.

Rail and Water Transportation, and the many industries related to them, are more closely interwoven in Canada than in the United States, Great Britain and other industrial countries; for the Canadian Railways pioneered in the industrial and agricultural development of Canada, and in the creation of Canada's Merchant Marine.

So the readers of Canadian Railway and Marine World are more than railway men or steamship men; they are the moving spirits in all that makes this young nation great.

Our editors sense the responsibility of addressing this masterful audience of trained thinkers and doers; and, as a result, Canadian Railway and Marine World is a serious minded publication for serious minded men.

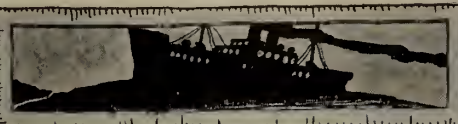
Puff-stuff is foreign to our columns. Inspired "write-ups," to flatter advertisers, run up against a "no admittance" sign. Even technical papers of deep interest are pared down to their vital essence.

And our off-repeated advice to our advertisers is to remember that they are talking to busy men—and to make their business messages conform to that simplest definition of good advertising "Easy reading, *worth* reading."

## CANADIAN RAILWAY AND MARINE WORLD

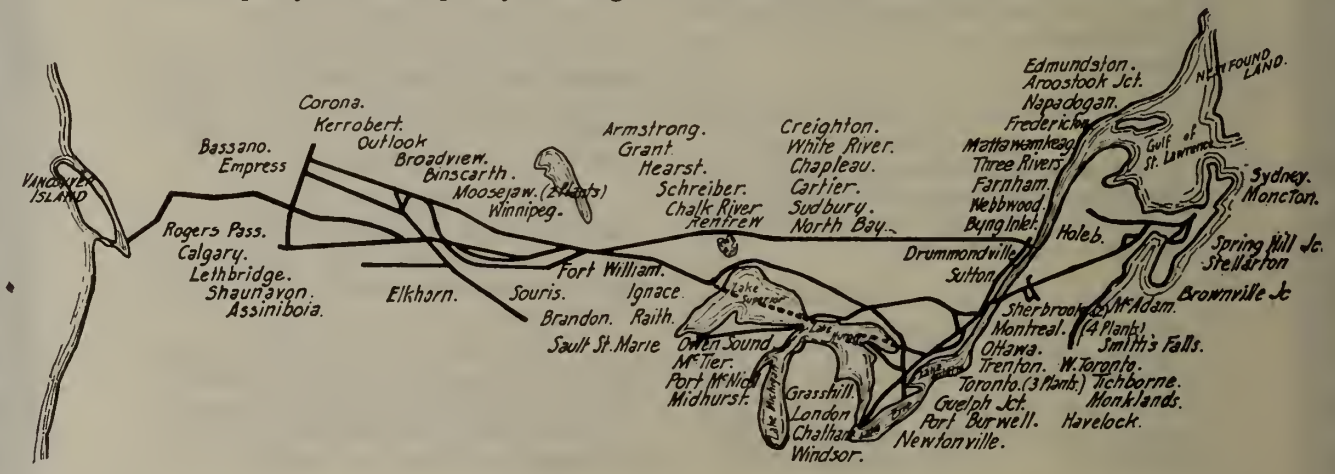
**Toronto** **Canada**

*Member of*
*Audit Bureau of Circulations,*
*Associated Business Papers,*
*Canadian National Newspapers and Periodicals Association,*
*Canadian Press Association*



# Nothing Succeeds Like Success

We have now built over eighty Locomotive Coaling Stations and the Map below shows how they are spread all over Canada. There are few Locomotive Coaling Stations in Canada that have not a "W & W" nameplate on them, and when you understand that we have twenty years experience in the construction of Coaling Stations it will be obvious why we obtain so many repeat orders. With our experience we understand just what kind of machinery is required for this severe class of work, and can practically fit up any size or capacity Coaling Station from our stock.




Complete erection from foundations up and machinery manufactured and installed. We have an Engineering Department which is at all times ready to co-operate with you. Do you wish Designs, Details and Estimates, we will be only too glad to furnish these on request.

# Williams & Wilson, Limited

## 84 Inspector Street, MONTREAL

# Fairbanks Dial Indicator

Direct Reading
Gross or Net

Full Capacity

No Loose Weights
No Calculation

May be applied to any existing platform scale.

The Fairbanks Dial Indicator reduces the weighing error and the cost of weighing.

Under present conditions, both of these are more important than ever before.

## The Canadian Fairbanks-Morse Co., Limited

*"Canada's Departmental House for Mechanical Goods"*

St. John, Quebec, Montreal, Ottawa, Toronto, Windsor, Hamilton, Winnipeg, Saskatoon, Calgary, Vancouver. Victoria.

*As electric power and light have become integral parts of industrial and domestic life, so will electric heat become an immediate member of that same family.*

# For Example

WE now offer for your approval a highly efficient—simple—portable

**Electric Rivet Heater**

which practically eliminates all of the objections found in present methods.

Briefly the advantages of this new device are as follows:

1. No time wasted in starting production.
2. Heats very rapidly—heated five hundred ½ in. x 1¼ in. rivets in one hour.
3. Better regulation of heat—energy only used when heating rivets.
4. Clean—***no smoke*** or ***gas formed.***
5. Quality of heat better and minimum of scale formed. Rivet heats from inside out, giving more uniformity of heat and better upsetting conditions in shank.
6. Wastage of rivets reduced to a minimum.
7. Portable, self-contained, economical and easy to operate.

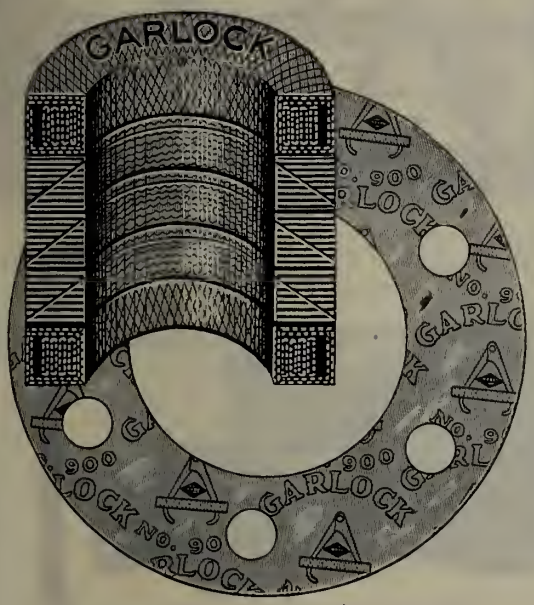
Any additional information on this subject will be gladly forwarded you upon request.

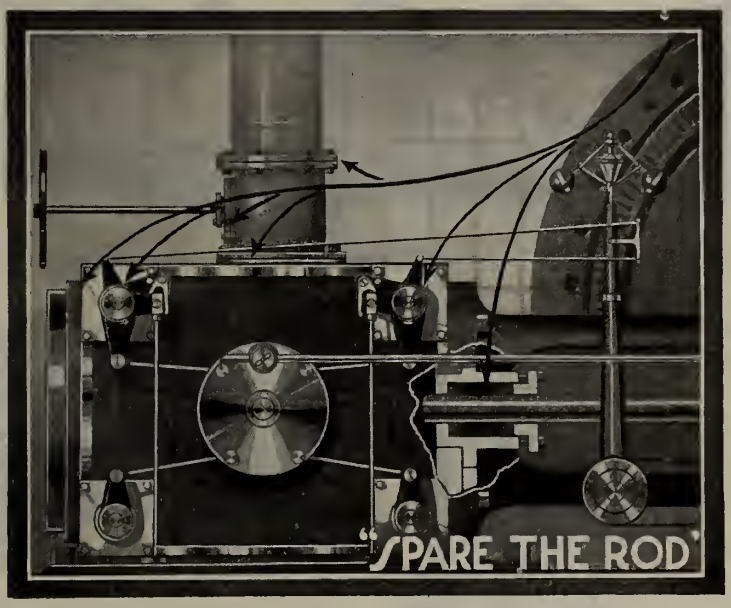
# Canadian General Electric Co., Limited

**Head Office** **TORONTO**

Branch Offices: Montreal, Quebec, Sherbrooke, Halifax, Sydney, St. John, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Nelson, Vancouver and Victoria.

# GARLOCK PACKINGS




## Pointers On a Well Packed Engine

For high pressure piston rods and valve stems use Garlock No. 200.
For medium pressure piston rods and valve stems use Garlock No. 446.
For worn or scored piston rods and valve stems use Garlock No. 336.
For vibrating piston rods, or rods not running true, use Garlock No. 550.
For cylinder heads, flange and other joints use Garlock Gasket No. 950.

Garlock Packings are made in over two hundred styles and combinations to meet every known requirement. We will assume entire responsibility in selecting the proper styles or combinations of our packings to work successfully and economically under any stated condition; and if goods are not fully satisfactory to purchaser we will refund promptly the cost of same. A card will bring our catalog which illustrates and describes our various styles of packings.

KILL
LAST AD.

## THE GARLOCK PACKING COMPANY

**HAMILTON :-: ONTARIO**

**BRANCHES:**

**Montreal, Que.—409 Shaughnessy Bldg.**
**Winnipeg, Man.—Galt Bldg.**
**Toronto, Ont.—404 Continental Life Bldg.**
**Calgary, Alta.—211 Eighth Avenue W.**

# ECONOMY CAST STEEL DRAFT ARMS

## KEEPING CARS IN SERVICE

The force which moves a car passes through the coupler and draft gear to the draft arms. Powerful locomotives and heavy cars have made that force so great that the wooden draft arms of older cars give way.

Over 100,000 such cars have been kept in service by equipping them with Economy Draft Arms.

Being made of cast steel, Economy Arms have ample strength to withstand the forces imposed upon them. They butt against the bolster and pass over it, thus distributing the pulling and pushing strains evenly through the underframe of the car.

AMERICAN STEEL FOUNDRIES
McCORMICK BLDG. CHICAGO
INTERNATIONAL EQUIPMENT CO., Ltd.
Montreal, Que.

SAVE COAL by keeping the heating surfaces of your boilers free from scale. One-sixteenth of an inch of scale increases your coal consumption 10.8%.

SAVE WATER AND COAL by reducing the number of times it is necessary to open blow-off cocks to keep the concentration below the foaming point. You are blowing out one pound of coal each second a one and one-half inch blow-off cock is held open.

SAVE BOILER REPAIRS by reducing the amount of work made necessary by leaks caused by scale in your scale forming water districts, and unnecessary expansion and contraction caused by frequent washing and water changes in your foaming districts.

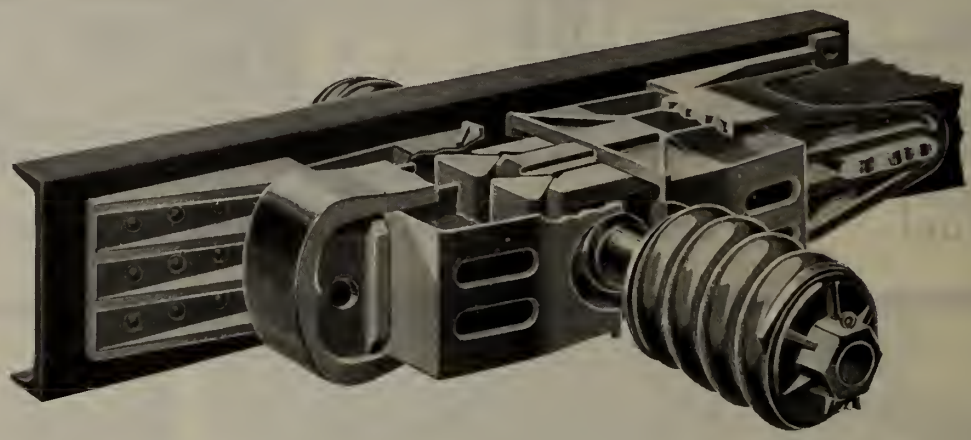
These savings can be effected by adopting the Dearborn System of Water Treatment. The cost is fifty per cent less than any other system now in use.

**Dearborn Chemical Company of Canada, Limited**

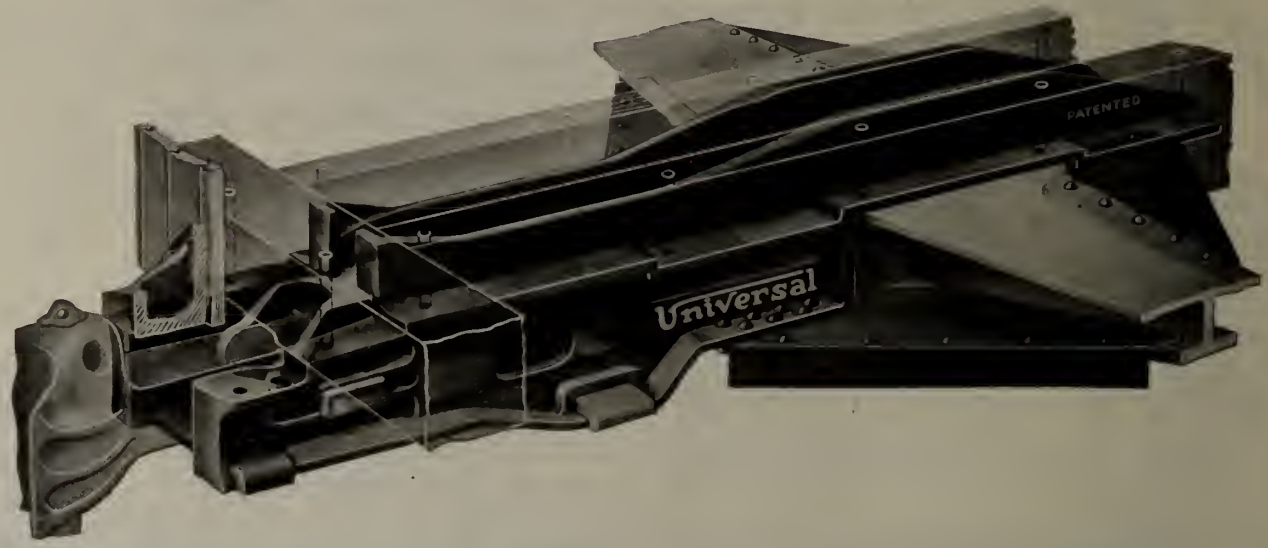
**General Offices and Factory, Toronto**

**Branch Offices: Montreal, 263 James St.; Winnipeg, 413 McIntyre Block**

# CARDWELL FRICTION DRAFT GEAR
## MADE IN CANADA



## *Universal* ATTACHMENTS
## MADE IN CANADA




REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
TWIN SPRING DRAFT RIGGING
CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

## MADE IN CANADA

# WEBB. G. KRAUSER
**Transportation Building, MONTREAL**

# Yes! A Good Name Means Much!

Galena

The name *"Galena"* is synonymous with *"the Best"* in railway lubrication the world over. Galena Oils carry a good name—a reputation of worthiness and dependability. A reputation built on a half century's faithful and efficient performance.

## What the name "Galena" means to you

To the customer the Galena name is a guarantee of quality—an assurance of uniform goodness, of efficiency and economy. Galena Oils have always delivered a maximum mileage and demonstrated their ability to stand up under the most severe service conditions. The name *"Galena"* is a seal of safety and satisfaction.

## What the name "Galena" means to us

To this company the word *"Galena"* is a title that is guarded most jealously. A product must be worthy the name before it can carry it. Every care and precaution is taken that each Galena product is up to Galena specifications, a governing principle of this company from which the slightest deviation will not be permitted.

*The name "GALENA" is our Bond and your Security.*

---

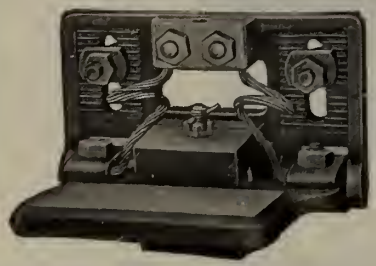
# Galena-Signal Oil Company

**Works - - - - - Toronto, Ont.**

**Stocks at Ft. William, Winnipeg, Vancouver.**

**Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg., Montreal.**

Type SP contact rail insulators specially designed for industrial service. The insulator rests on the ties, and is held in place with two iron clamps.



Typical Keystone Contact Rail Shoe having a reversible contact member thereby enabling its use for over-contact or under-contact rails

# "KEYSTONE" Contact Rail Material

For light or heavy shipyard or industrial cranes, industrial haulage systems and electric railways. A complete line of insulators, standards and contact rail shoes that will meet practically all conditions.

Being specialists in this line we are also prepared to recommend and supply material of special design to meet any complex conditions you may have.

Write for data sheets.

Type LV contact rail insulator designed for railway and heavy haulage or crane work

Type I contact rail insulators with off-set base for bolting directly to ties

Type X inverted contact rail insulator for use on heavy cranes or railways

## Electric Service Supplies Co.

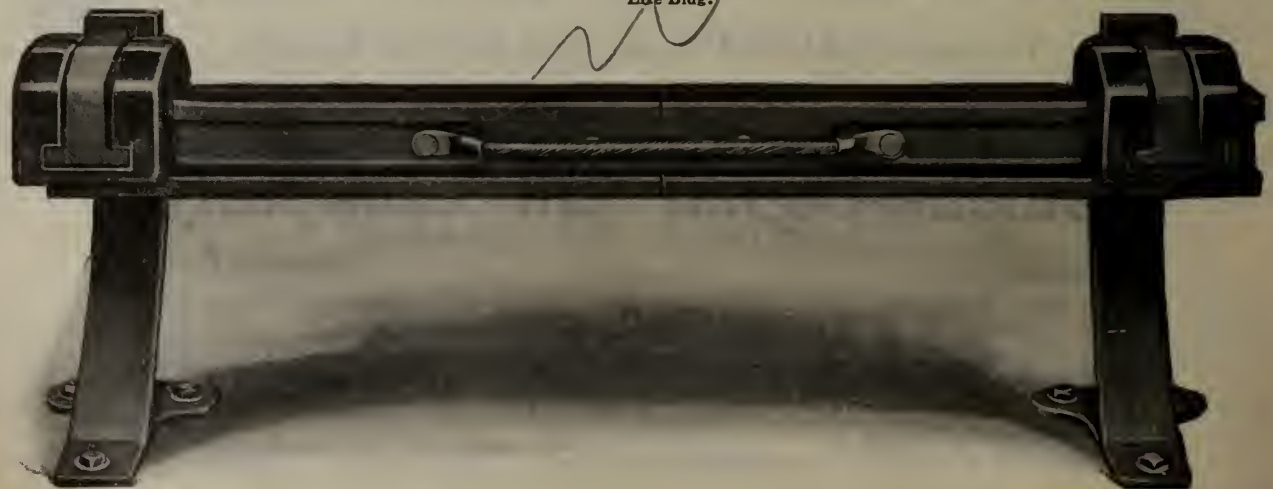
*MANUFACTURERS*

PHILADELPHIA 17th and Cambria Sts. — NEW YORK 50 Church St. — CHICAGO Monadnock Bldg.

## Lyman Tube & Supply Co., Ltd.

*CANADIAN DISTRIBUTORS*

MONTREAL Lyman Tube Bldg. — WINNIPEG 703 Confederation Life Bldg. — TORONTO 33 Melinda Street



# Steady, Sturdy, Growth

From one Mudge car in service to over seven thousand has been the accomplished progress of our business years.

Ours has been a steady growth builded on the confidences which you have placed in our cars and in this Company.

Each year has seen more members added to our staff—each year Mudge Motor Cars (*our business seeds*), have been more widely sown and known. Now there are few railroads but who have judged the success, the simplicity and economy of Mudge cars.

And as time has passed, our branches have spread out to facilitate the handling of your business.

Now, with the operation of a new and modernly equipped factory, located in the biggest railroad center in the world, we are more thoroughly prepared to bring to you the quality and quantity production which coming conditions promise to demand.

So with the new year Nineteen-Twenty before us, we are ready to enter an era of progress with an even broader conception of how best to serve and satisfy both our old and our prospective customers.

KILL
LAST AD.

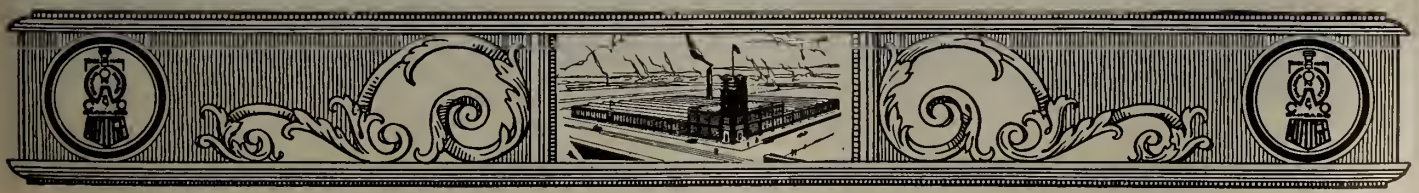
## Mudge & Company

*Manufacturers—Railroad Equipment*

CHICAGO, ILL., U. S. A.

**Canuck Supply Co., Ltd.,** *Canadian Representatives*

Montreal Toronto Winnipeg



# CANADIAN STEEL FOUNDRIES LIMITED

TRANSPORTATION BUILDING, MONTREAL

KILL
LAST ED

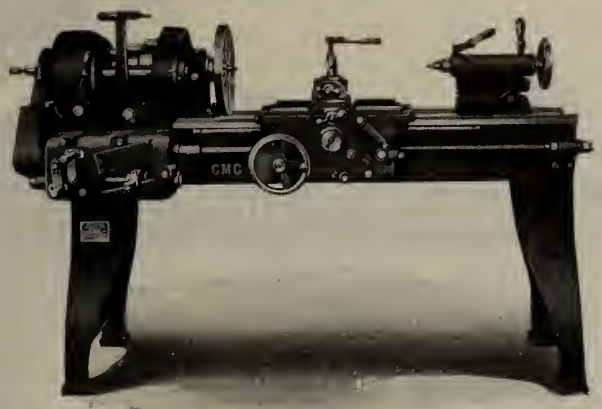
## AMONG OUR PRODUCTS

- O.H. STEEL CASTINGS
  - BRIDGE
    - Shoes
    - Turntables
    - Etc.
  - CAR & LOCO.
    - Side Frames
    - Cross Ties
    - Foot Plates
    - Knees
    - Running Bd. Brackets
    - Driving Boxes
    - Centre Plates
    - Bolsters
    - Draft Arms
    - Couplers
    - Wheel Centres
    - Side Bearings
    - Etc.
  - HYDRAULIC
    - Press Cylinders
    - Press Platens
    - Pipe Flanges
    - Elbows
    - Etc.
  - MACHINERY
    - Rolling Mill Rolls
    - Fly Wheels
    - Frames
    - Gears
    - Etc.
  - MARINE
    - Shaft Brackets
    - Stern Frames
    - Rudder Frames
    - Fairleads
    - Anchors
    - Etc.
- FERRO-ALLOY CASTINGS
  - MANGANESE-STEEL
    - Special Trackwork
    - Crusher Jaws
    - Dipper Teeth
    - Bucket Lips
    - Bucket Links
    - Bushes
    - Pins
    - Etc.
  - OTHER ALLOYS
    - Locomotive Frames
    - Rolls
    - Etc.
- TRACKWORK
  - INTERSECTIONS
    - Frogs
    - Switches
    - Mates
    - Diamonds
    - Crosses
    - Rail Braces
    - Guard Rail Clamps
    - Etc.
  - ACCESSORIES
    - Rail Benders
    - Switch Stands
    - Turntables
    - Etc.

C.M.C.

THE MARK OF MERIT

# ENGINE LATHES
## GREAT and SMALL



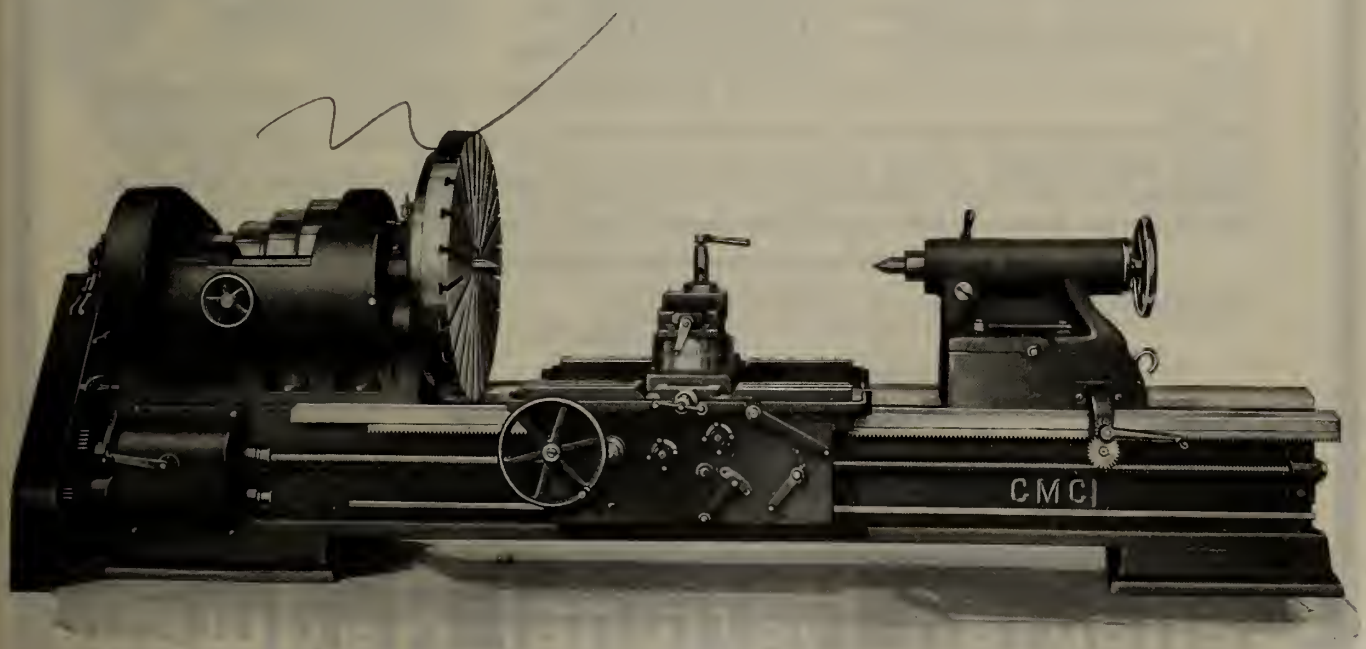
Are of the same standard of quality—the best. Our 36″ Engine Lathe shown at the bottom of this advertisement is built with the same care and thoroughness as the fine 14″ tool maker's lathe illustrated above. The smaller lathe has the same proportionate strength and rigidity as the big brother.

Proper design, good material, skilled workmanship and rigid inspection result in that standard of perfection synonymous with our trademark C.M.C.

Intermediate sizes are of equal quality and share in the enviable reputation.

**CANADA MACHINERY CORPORATION, LIMITED, GALT, ONTARIO**

**Toronto Office and Warerooms, Brock Avenue Subway.**



"60 Vessels"

Canada's Commerce Carriers

"Total Tonnage 325,000"

# Canadian Government Merchant Marine, Limited

**Now Afloat:**

| | | |
|---|---|---|
| "CANADIAN VOYAGEUR" | "CANADIAN TROOPER" | "CANADIAN SEIGNEUR" |
| "CANADIAN PIONEER" | "CANADIAN SAILOR" | "CANADIAN RAIDER" |
| "CANADIAN WARRIOR" | "CANADIAN SPINNER" | "CANADIAN RANCHER" |
| "CANADIAN SETTLER" | "CANADIAN GUNNER" | "CANADIAN NAVIGATOR" |
| "CANADIAN RANGER" | "CANADIAN TRADER" | "CANADIAN TRAPPER" |
| "CANADIAN VOLUNTEER" | "CANADIAN SIGNALLER" | "CANADIAN AVIATOR" |
| "CANADIAN IMPORTER" | "CANADIAN MILLER" | "CANADIAN SOWER" |
| "CANADIAN EXPORTER" | "CANADIAN ADVENTURER" | |

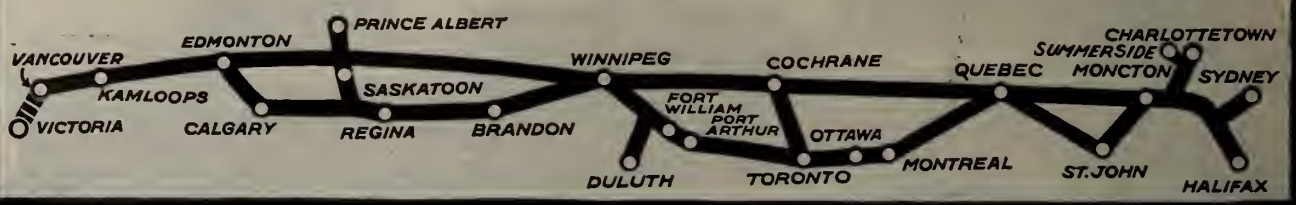
Weekly Freight Service to United Kingdom from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Fortnightly Freight Service to West Indies and Cuba from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to Australia and New Zealand from Vancouver.

**For further information apply to any Canadian Railway Agent or**

D. O. WOOD,
Traffic Manager, Exp. & Imp. Dept.,
Canadian National Rys.,
Toronto, Ont.

GEORGE E. BUNTING,
Ontario Freight Agent,
Room 704 Royal Bank Bldg.,
Toronto, Ont.

W. A. CUNNINGHAM,
Exp. & Imp. Freight Agt.,
230 St. James Street,
Montreal, Que.




# Canadian National Railways

KILL

LAST AD.

# Goodyear Builds Better Hose

There was a time when men thought that rubber tires had reached their limit of quality. Then Goodyear entered the field, and, by leaving the beaten path, built the largest tire business in the world.

When Goodyear scientists and engineers turned their attention to Industrial Hose they were not satisfi. d with many of the existing standards. They started from the ground up. They built for Industry's needs. Was the rubber lining unsatisfactory—Goodyear men worked till they had discovered a better one. Did a cover wear out too quickly in hard service—the knowledge gained in building automobile treads was applied to hose covers. New specifications were worked out. New formulae were developed.

The Goodyear Industrial Hose offered you today is the result of a definite policy. It is the *solution* to your hose problems—not a makeshift.

In mines, mills, foundries, shipyards, railways, and a hundred other industries, all over Canada, it is setting new standards.

There is a Goodyear Industrial Hose for every particular use—yours among them. Let a man, trained by Goodyear in hose problems, call and explain them to you. No obligation. Phone, wire or write the nearest branch.

**The Goodyear Tire & Rubber Co. of Canada, Limited**

Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver

**GOODYEAR**

MADE IN CANADA

**INDUSTRIAL HOSE**

# COAL PUSHERS
## *On the*
## CANADIAN NATIONAL RAILWAYS

The above Consolidation locomotive is one of a series of 75 equipped with Mechanical Coal Pushers with *Slope Sheet Coal Pushers.* There are a total of 81 locomotives on the Canadian National Railways equipped with Coal Pushers.

*Coal Pushers* are of inestimable aid in the firing of the lighter types of locomotives. With the Coal Pusher the fireman has a constant supply of fuel at the coal-gate within easy reach of his scoop. By the simple turning of a valve it does away entirely with the necessity of shoveling coal ahead in the tank.

There are over 1,200 Coal Pushers in service in Canada and the United States—applied to Mikado, Consolidation, 10-Wheel Atlantic, Prairie, Pacific and Switcher locomotives.

*Over 1200 of Our Coal Pushers in Service.*

# Locomotive Stoker Company

Railway Exchange
Chicago, Ill.

Main Office and Works
Pittsburgh, Pa.

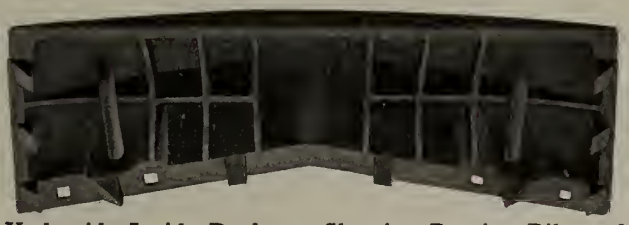
50 Church St.
New York

# Q AND C Rerailers

## Fewings Type

### Wrecking Frogs or Rerailers

Top View, Outside Replacer



Underside Inside Replacer, Showing Bracing Ribs and Handles.

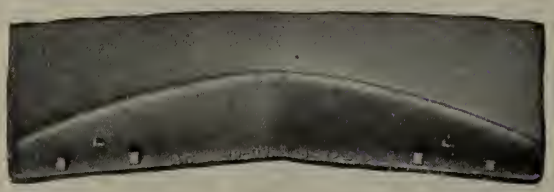
## *Efficient in Work—Durable in Service*

The Q. & C Fewings Rerailer is high enough to do its work, yet will not foul the under rigging; can be used on bridges, curves, planked crossings, frozen ground and around interlocking plants and frogs where others cannot. Will not tip over. Wheels can go to rails from any part of rerailers. Made in five sizes.

LAST AD.

*Information gladly given on request.*

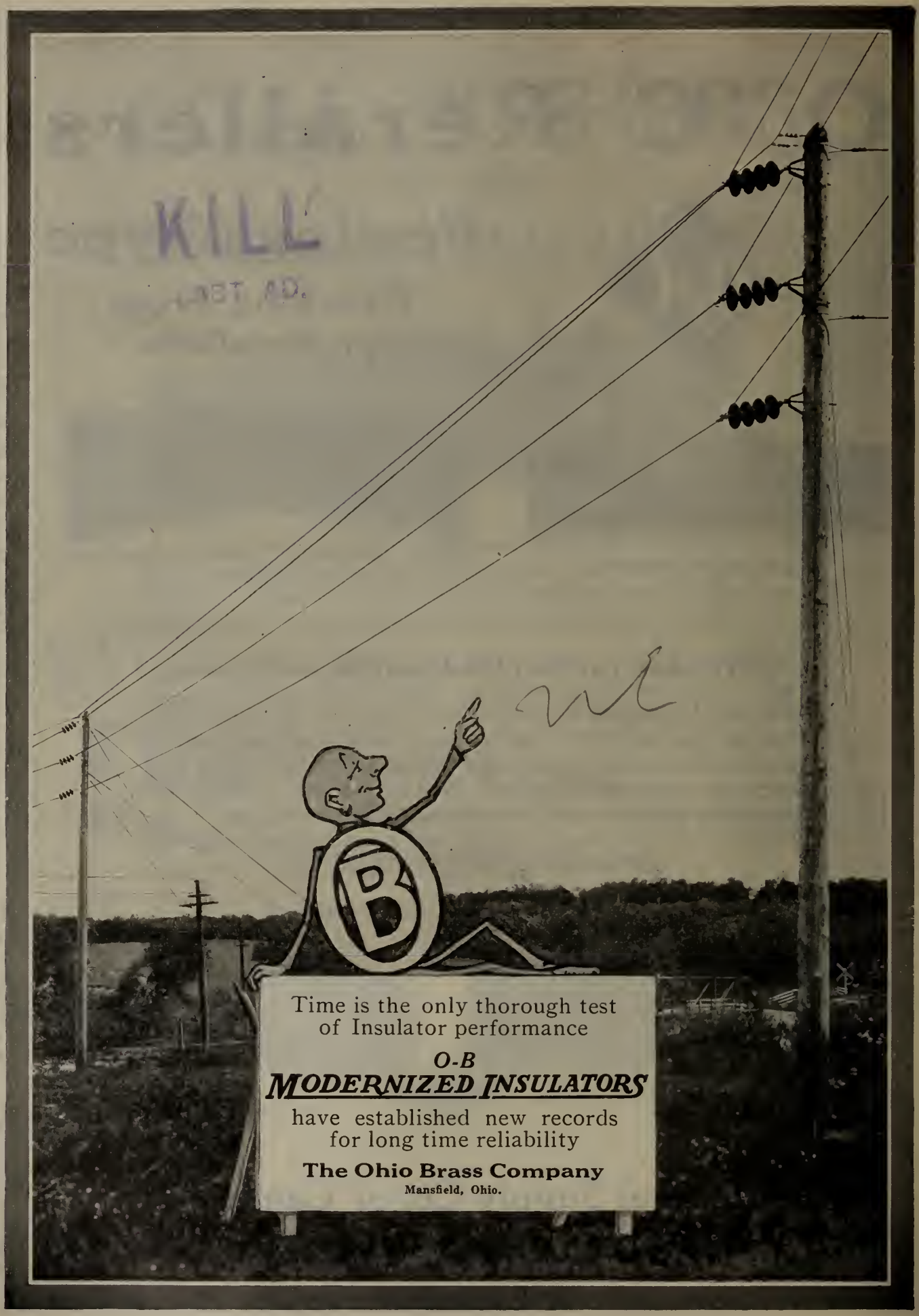
Underside Outside Replacer, Showing Spiking Holes, Handles, etc.

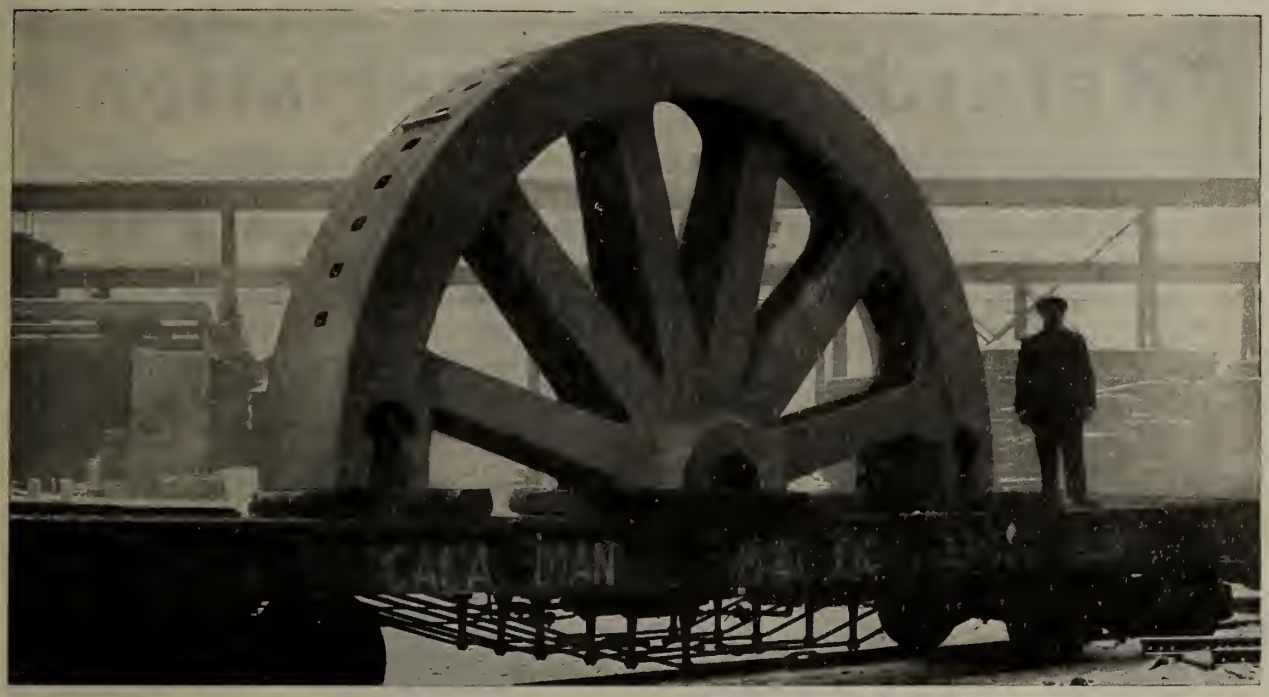


Top View, Inside Replacer

## The General Supply Co. of Canada, Ltd.

**Ottawa - Montreal - Toronto - Winnipeg - Vancouver**


KILL
B
Time is the only thorough test
of Insulator performance
O-B
MODERNIZED INSULATORS
have established new records
for long time reliability
The Ohio Brass Company
Mansfield, Ohio.



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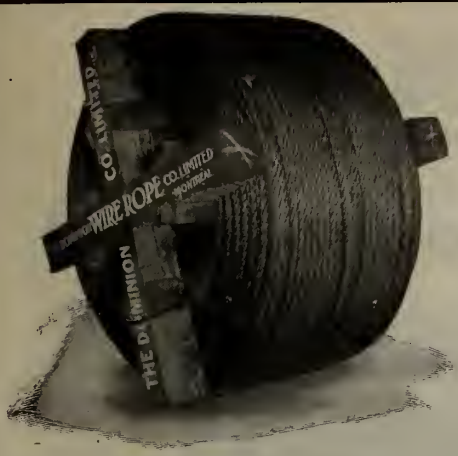


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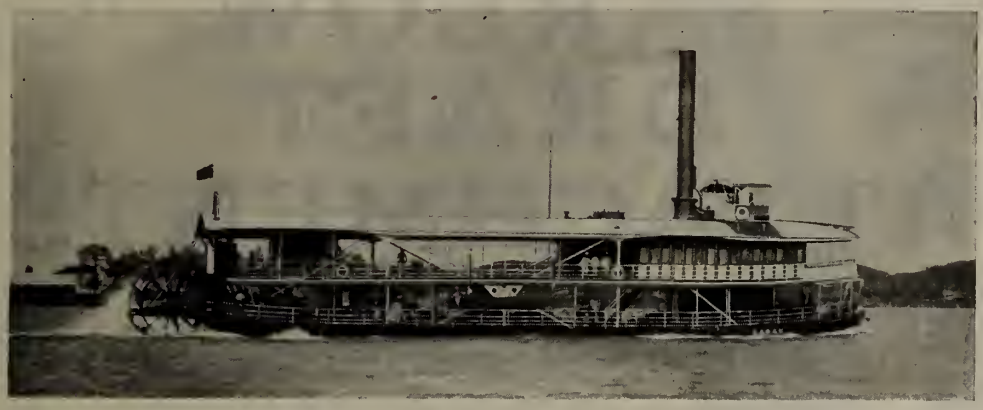

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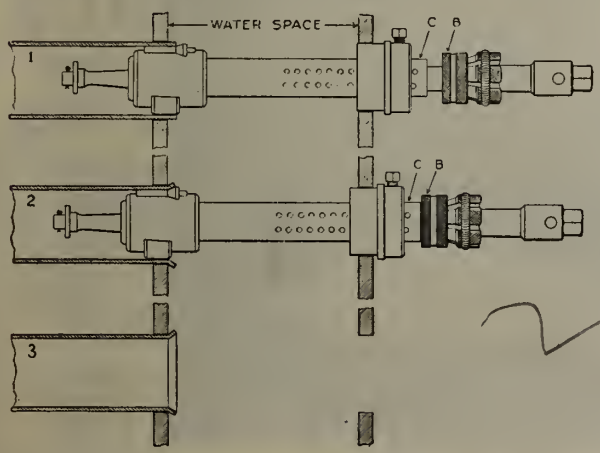


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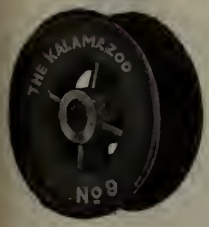


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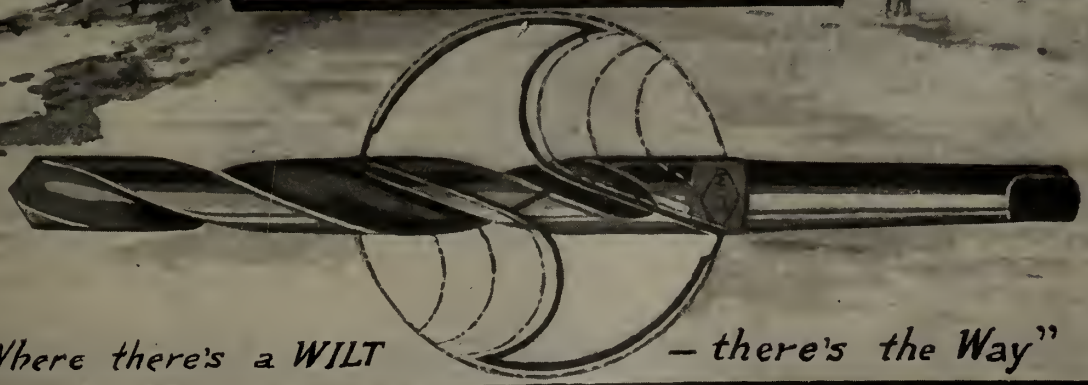

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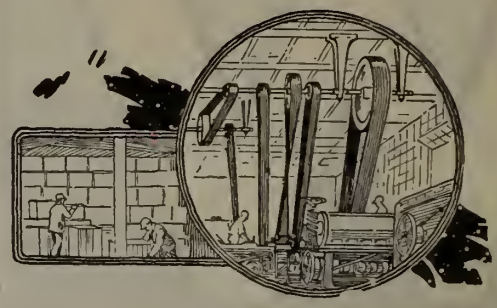

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# Canadian Railway and Marine World

March, 1920

## The Canadian Pacific Railway's President's Speech at Winnipeg.

During his recent trip of inspection over the C.P.R., to the Pacific coast, the President, E. W. Beatty, K.C., was entertained at luncheon by the Canadian Club at Winnipeg, and made the following remarks:—"Since I had the pleasure of visiting western Canada in May last, a very important change in the transportation situation has taken place, through the sudden consummation of a plan for the acquisition of the Grand Trunk and Grand Trunk Pacific Railways with a view to their incorporation into the Canadian National Railways System. In due course, when the legal and other formalities have been fulfilled, this consolidation will take place and the test of the possibility of successful administration of a vast system of railway under the aegis of the government will be made. It is probably the most ambitious and comprehensive task which any government or any people has taken upon themselves, except temporarily and in emergent necessity. It may be a test over a period of years and the results may be expensive, but under honest management, with independent and nonpolitical administration, and above all with accurate information supplied to the public as to the result of these operations, the people of this country will be able to determine for themselves whether that system is the best and if not what improvement should be made in it. I make no comment on the wisdom or otherwise of this further extension of government ownership of railways in Canada. The matter has been settled by the representatives of the people. I am sorry, however, that a little more time and information were not given, both to the people themselves and their parliamentary representatives, because I would have been better satisfied that the decision then represented the view and desire of the vast majority of the people of this country, especially of the business communities, which have a particular stake in the railway situation and a particular knowledge of what constitutes efficient railway service. The decision has been taken, however, and the consolidated system will be administered by a board selected by the government, with experienced railway operators and executives in immediate charge of the property, with parliament, as is inevitable, in full control of the financial support to be given, and the government of the day with full responsibility for the expenditures of the monies voted for such purposes. The result of this means that the railway situation in Canada is now completely changed, and the country must depend, for some time at least, for additional railway facilities, where needed, upon the Canadian National Rys. or the C.P.R., because with preponderating mileage under government control, it is not likely that much capital will be attracted to new railway enterprise for the rewards which such investments might bring. Therefore, I think it may be fairly stated that such additional construction as takes place within the next few years will depend upon the willingness of the Canadian National Railways and the C.P.R. to appreciate these needs and their financial ability to meet them. This is a situation which is without parallel in any place in the world where a government-owned and operated railway and a privately owned and operated railway, not greatly different in the matter of mileage, both with, of course, adequate credit, have in their hands the almost exclusive right to remedy transportation insufficient at most places throughout Canada. It is true, I think, that this will provoke a highly competitive condition. How effective this competition will be will depend upon its honesty and its fairness. If political methods are to be introduced into the competition, and facilities provided in accordance with political expediency, or if political rewards follow the extent of the support or otherwise which is granted by shippers to the Canadian National Rys., then I should say the competition would be unfair, and of doubtful commercial or national value.

"During the course of the year, Canadian railway companies had to meet a great many problems, due to the emergencies which prevailed, which were unusual and of great importance, and which required new methods to secure their being dealt with competently. For that purpose the Canadian Railway War Board was constituted, and through it the efforts of all railways were co-ordinated to meet the extraordinary demands through the movement of war traffic and soldiers. The work was well and efficiently done; was so well done, in fact, that not one hour's demurrage was caused to Atlantic shipping by delays on Canadian railways. I have received a letter recently from Sir Joseph Maclay, British Minister of Shipping, in which he points to this fact as a conspicuous example of the effective way in which the work of the Canadian railways was performed. Since the war, there has been constituted the Railway Association of Canada, whose executive comprises the presidents of the principal railways in Canada, and in the organization of which is contained various committees, from the operating, financial and traffic officers of the companies, who are constituted to act jointly, when joint action would be in furtherance of the traffic necessities of the people or of the railways. Mr. Hanna and I sit on the executive committee, and I am very hopeful that with the experience he there gains, he will be confirmed in his original decision to be a railway man and not a politician.

"I have known Mr. Hanna for a great many years, and my appreciation of his personal qualities, and official ability as disclosed in the numerous exacting and difficult positions he has been called upon to fill, is very great. The fact that he was trained in his earlier years in the C.P.R. service and has always, both personally and officially, retained a very sincere affection for his former company has not detracted from my appreciation of him.

[Editor's note.—Mr. Beatty's reference to Mr. Hanna having been in the C.P.R. service was evidently made under a misapprehension, and probably arose from the fact that Mr. Hanna was from 1886 to 1896 in the Manitoba & North Western Ry.'s service, but he left that company before its property was taken over by the C.P.R., on a lease for 999 years, from July 1, 1900.]

"Mr. Hanna and I have a great many problems in common, and others which are individual, because peculiar to the different systems of railway operation, in which we are respectively involved. Occasionally it may be necessary in public utterances for us to refer to each other, or the interests which we represent, but I recognize that these references will be few and far between, because I can imagine nothing of much less public interest or public importance than my opinion of the Canadian National Railways and Mr. Hanna, unless it is Mr. Hanna's opinion of the C.P.R. and myself. Mr. Hanna rather departed from the rule a few weeks ago in Toronto, and with his characteristic Scotch pawky humor, whatever that means, said that the trouble with me was that I did not believe in public ownership, but that I would hope for its success, and that notwithstanding the fact that the C.P.R. had occupied a very unique and strong position within the empire, in a few months time it would be number two instead of number one, and that was where the shoe was pinching. As I say, Mr. Hanna intended this to be a humorous remark, but Scotch humor is sometimes hard to understand, and his audience, a most intelligent Toronto audience, misunderstood him, and applauded his prophecy of the advent of another railway system, bigger and better than the Canadian Pacific. I imagine that Mr. Hanna and I could sit down today and discuss with the utmost candor the general railway situation. Incidentally to that we could, I think, agree without much discussion as to which was number one and which was number two. I say this without any hesitation or reservation, because I know what a wise and experienced man Mr. Hanna is. I can say with equal confidence, I think, that five years from now Mr. Hanna and I could discuss the question with equal frankness, and agree between ourselves as to which was then number one and which was number two. Of course, it would be the same railway, but as I have said, Mr. Hanna is a very wise man. Five years hence he may even be wiser than he is now, but that would not be necessary to enable him to reach a correct conclusion.

"Mr. Hanna has recently adopted the role of prophet for the Canadian National Rys. He is a cheerful prophet, and he paints a glowing picture of the future of the properties under his charge. This is as it should be, and he is wise in making it as attractive as possible. He has recently taken his

pencil in hand and added together the joint mileages of the Canadian Northern, Intercolonial, National Transcontinental, Grand Trunk and Grand Trunk Pacific Railways in Canada and the United States; he has likewise added the number of locomotives and cars of all descriptions, tons of freight carried on all systems and has concluded the Canadian National Rys. are, or will be, the greatest railway system in the world. I do not dispute his figures as to mileage, and I do not imagine it is of much public importance whether the gross earnings of the combined systems are greater or less than the C.P.R. Up to the present, they are less, although the mileage is greater, but I do say that the test of the best or worst railway is not necessarily determined by mileage, and 'best' and 'biggest,' are not necessarily synonymous terms. Companies must stand or fall on the character of the service they render, and if one railway's service is consistently better than another's, if its officers are more efficient, its service more expeditious and its business transactions with the public more satisfactory, it is the railway which will be rightly regarded as the best, whether its mileage be somewhat more or somewhat less than its rival's.

"The Canadian National Railways and ourselves are confronted with conditions of operating which are almost without precedent, and which, with the largest measure of support we can both receive, still render these operations extraordinarily difficult. We both appreciate that the people is a jealous and exacting mistress, but we also know that the public is a generous and persistent friend, once its confidence is secured. We know, too, that no sentiment will control the success of our efforts. Heretofore in Canada there has been, I think, a prevailing decency in competition, which has been encouraging. I have no reason to expect that that will change, or that the Canadian National Rys. to further its interests, and extend its business, will be any less reputable than those taken by the C.P.R. or by the Canadian Northern, the Grand Trunk, or any other system, which is now consolidated, or to be consolidated into the Canadian National Railways, but there is always the danger of political methods being adapted to the business of railroading, and political influence being used where business methods fail to accomplish the desired result. I was very glad to read Mr. Hanna's strong plea for independent administration, which means business administration, because I would dislike to see post offices, docks, and public works and institutions of all sorts made dependent upon whether the community desiring them gave support to the Canadian National Rys. If that happened, we might have to establish libraries, hospitals, theaters and parks, in order to meet that new and peculiar political railway competition. The foundation of competition should be the same. The legislative control of parliament, the regulatory control of the Board of Railway Commissioners should be the same in respect of all railways operating under the federal jurisdiction. This is not the case as yet, the government having reserved by statute special rights to the Canadian National Rys. not enjoyed by private companies, and withheld it in certain particulars from the Board of Railway Commissioners' jurisdiction, but I am hopeful that in time this will be remedied. The accounting methods and financial returns of all companies should likewise be absolutely identical. Given these essential premises and the Canadian National Rys. the independent administration which their officers desire, and you will see railways competing in this country under conditions which will stimulate their efforts and redound to the advantage of all those who do business with them. Whether these conditions will prevail, I cannot say, because the almost irresistible inclination of those who supply the money is to demand a voice in its expenditure and in the management of the institutions for the financing of which they are responsible.

"I do not pretend to speak for the Canadian National Rys., but no doubt, as in the case of the C.P.R., large sums are required to complete work that has been heretofore impossible to undertake, and to extend facilities to meet the rapidly increasing needs of the country. Neither of us can stand still; we must progress if we are to receive our fair share of the country's prosperity. In order to do this we must have money, and money can be obtained only in two ways, by stock or bond issues, or by revenue. Operating increases cannot be taken care of by the former. The extraordinary recent costs of maintenance and operation can be met only in one way and that is by increased revenue to the companies, and in this we need the sympathetic support of the people, who demand a high standard of railway operation and railway service which can be secured only, in view of the prevailing high prices, by paying a transportation charge at least equal to the increased cost of operating. You are all aware that in 1918 railway wages were increased in Canada by an amount aggregating $77,000,000, an amount greater than the interest on the whole of Canada's war debt; the rates were at the same time increased and they brought in $43,000,000 additional revenue to the companies; in other words, the increase in rates failed to equal the increase in wages by the enormous sum of $34,000,000. There can be only one end to that condition, unless the revenues are readjusted to meet these increasing costs. While rates will have to be again increased, they cannot be increased indefinitely, and our great struggle from now on will be to reduce costs in order that in time rates themselves may be lowered. There are only two ways of reducing railway rates; one is by large increase in the volume of traffic, and the other is by decreased cost in the carrying of traffic. No ordinary increase in business will be sufficient to take care of the extraordinary increases in the cost of labor and material which the railway companies have experienced in recent years. I know that you, gentlemen, are very well informed on the subject of railways. I know that many of you are, or have been, persistent users of the railways, that you have competent critics, and that you have come in contact with their operations in a more intimate way than most citizens of this country. You will I think be the first to appreciate the accuracy of my statement when I say that at no time in the history of this country has there been more need for an appreciation of the problems of the railways and more need for support to the railways than now.

"There is little if any, merit in that old time aloofness with which railway companies dealt with the public. The C.P.R. is a citizen of Canada, not the first citizen of Canada, but one of the most corpulent. Its problems are the problem of Canada; it has a grave interest in the economic and industrial future of Canada. I can imagine nothing which concerns Canada's progress that does not concern directly, or indirectly, the C.P.R. It is, therefore, proper in its own interest and that of its shareholders, that its officers should take an interest in its commercial and trade problems, and further the solution of them to the best of their ability. It is equally proper that Canadians should concern themselves somewhat with the problems and administration of the C. P.R., and there is no occasion, so far as the C.P.R. or any other railway, is concerned, for the people to regard them as soulless corporations, when their stake in the country is so great, and their interests and your interests so much in common. There is always in the minds of some people a mystery in the existence and operation of any large corporation, whether government owned or privately owned. It is supposed to conceal within the walls of its offices machinery for many things not directly connected with its enterprise. Nothing could be further from the facts. Being public utilities, they are open to more criticism than other institutions. Their affairs are more public and their officers better and more widely known. They are easier to understand, though they are huge in size, and their ramifications are great. Since 1904 Canadian railways have been required to justify every rate, act and practice which affected the public or the public interest. Can this be said of any other enterprises?

"The problem of increased costs practically brings the railway companies in common position with other Canadian citizens. The cure for it is greater production and trade expansion, hard work and thrift. It sometimes seems to me that we lose sight of the very fundamentals on which the prosperity of this country has been heretofore based. The foundation of our economic stability rests upon perseverance, work and the rewards which come from it. We have no more right to expect to receive high wages and high compensation unless we can give an adequate return in service, than we have a right to expect to appropriate and keep what does not belong to us. The necessity is preached from one end of the country to the other, and it cannot be preached too often, because unless it is practiced this country will not enjoy its share of the world's prosperity and will not be able to meet the very disquieting conditions which have resulted from the economical upheaval of the last five years. Heads of financial interests see it, and advise economy of all kinds. Individuals appreciate it and to some extent are practising it. Governments, federal, provincial and municipal, must also see it, and practice it, or else hard times will succeed our present era of prosperity. It has always seemed to me that hard times do succeed any era of great spending or extravagance, and it is a serious commentary on the common sense and sanity of people that it is necessary for the realization of these consequences to be obtained by experience, instead of by a careful appreciation of the trend of events, and by modification and prudence anticipate and prevent the natural consequences of extravangance and

imprudence. I am an optimist; I do not see how anyone could be anything else so far as Canada is concerned, with its natural wealth, and the virility of its people, but with great optimism can go equally great discretion, and the fact that a man, or a nation, is full of hope and confidence, does not mean that he should disregard the warnings of the times or with his eyes on his own future fail to observe the economical pitfalls immediately in front of them.

"I would seriously urge upon you all the paramount necessity of quiet, sane consideration of Canada's economic problems as they develop. It is, I think, now conceded that most of the errors made in past years have been due to a too ready acquiescence in illconsidered policies, and a serious indifference by the people as a whole to the correctness, or otherwise, of the conclusions reached. I am, I think, quite within the mark in saying that our principal railway and economic mistakes have been due to the lack of keen appreciation in those whose concurrence permitted the adoption of these policies. There is no time in the history of this country when the views of extremists should prevail as little as now. The difficulties which confront us are not insurmountable, if the solution of them is given the moderate and sane consideration which is indispensable to a correct conclusion. Appeals to prejudice and traditional hostility are fruitless of permanent good. Given the proper recognition of the diversity of economic necessities which inevitably exists in a country the size of Canada, and a serious and single desire to meet and dispose of them in the interests of the country as a whole, and I would have every confidence that our errors would be reduced to a minimum and the economic strength of the country increased beyond the possibility of serious setback."

## Change in Maintenance of Way Flagging Rules for Impassable Track.

The Board of Railway Commissioners passed general order 280, Dec. 23, 1919, as follows: Re general order 188, April 23, 1917, approving regulations for uniform maintenance of way flagging rules for impassable track, and general orders 216 and 248, amending the same, and the board's direction that part of the said orders affecting flagging, other than manual flagging, stand for further consideration. Such further consideration having been had, it is ordered that general order 248, Aug. 19, 1918, be amended by striking out regulation 9 on page 2 of the order and substituting therefor the following, viz.: "That a signal of a serviceable type, to be approved by the board, be used to display the signals directed to be provided under rules 3 (b) and 6 (yellow signal) of this order and rule 35 (yellow signal) of the Uniform Code of Operating Rules."

Regulation 9, of general order 248, which has been repealed, was as follows: "9. That the Brennan signal device, as approved by the board, or a signal of an equally serviceable type attached to the base of the rail, to be approved by the board, be used to display the signals directed to be provided under rule 3 (b) and 6 (yellow signal) of this order and rule 35 (yellow signal) of the Uniform Code of Operating Rules."

# Birthdays of Transportation Men in March.

Many happy returns of the day to:—

W. G. Annable, General Passenger Agent, Canadian Pacific Ocean Services, Ltd., Montreal, born at Ottawa, Mar. 3, 1875.

John Archibald, Locomotive Foreman, C.P.R., Coquitlam, B.C., born at Edinburgh, Scotland, Mar. 13, 1872.

Allan Cameron, Superintendent, Land Branch, Department of Natural Resources, C.P.R., Calgary, Alta., born near Owen Sound, Ont., Mar. 14, 1864.

H. S. Carmichael, Passenger and Freight Manager, Canadian Pacific Ocean Services, Ltd., London, Eng., born at Glasgow, Scotland, Mar. 7, 1874.

F. G. J. Comeau, District Freight Agent, C.P.R., Halifax, N.S., born at Meteghan River, N.S., Mar. 10, 1859.

W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Montreal, born there, Mar. 22, 1871.

A. E. Cox, General Storekeeper, Canadian National Rys., Winnipeg, born at Huddersfield, Eng., Mar. 12, 1863.

Senator N. Curry, Chairman, Canadian Car & Foundry Co., Montreal, born in King's Country, N.S., Mar. 26, 1851.

C. C. Curtis, Manager, Cape Breton Electric Co., Sydney, N.S., born at Battle Creek, Mich., Mar. 27, 1883.

C. T. Delamere, Engineer of Construction, Eastern Lines, C.P.R., Montreal, born at Brainerd, Minn., Mar. 18, 1881.

H. G. Dring, European Passenger Manager, Canadian Pacific Ocean Services Ltd., London, Eng., born at Easton, Northamptonshire, Eng., Mar. 8, 1881.

Patrick Dubee, Secretary - Treasurer, Montreal Tramways Co., Montreal, born there, Mar. 4, 1876.

Frederick Elliott, President, Victoria Navigation Co., Ltd., Thurso, Que., born at Montreal, Mar. 8, 1858.

M. P. Fennell, Jr., Secretary-Treasurer and Comptroller, Montreal Harbor Commissioners, and Secretary, American Association of Port Authorities, Montreal, born there, Mar. 13, 1885.

W. R. Fitzmaurice, Superintendent, Division 2, Maritime District, Canadian National Rys., Campbellton, N.B., born at Bedford, N.S., Mar. 19, 1870.

R. A. Gamble, General Yardmaster, Winnipeg Terminals, C.P.R., born at Dublin, Ireland, Mar. 1, 1876.

J. Halstead, Division Freight Agent, C.P.R., Calgary, Alta., born at Bracebridge, Ont., Mar. 2, 1877.

R. M. Hannaford, Assistant Chief Engineer, Montreal Tramways Co., Montreal, born there, Mar. 22, 1865.

C. A. Hayes, Vice President, Traffic, Canadian National Rys., Toronto, born at West Springfield, Mass., Mar. 10, 1865.

H. T. Hazen, Engineer, Maintenance of Way, Canadian National Rys., Toronto, born at Truro, N.S., Mar. 14, 1870.

J. I. Hobson, Treasurer, Canada Steamship Lines, Ltd., Montreal, born at Guelph, Ont., Mar. 30, 1872.

N. J. Holden, President, The Holden Co., Ltd., Montreal, born at Nobleton, Ont., Mar. 22, 1866.

A. R. Holtby, Master of Bridges and Buildings, Mountain Division, Grand Trunk Pacific Ry., Smithers, B.C., born at Rawdon, Que., Mar. 23, 1859.

Frank Lee, Engineer, Maintenance of Way, Western Lines, C.P.R., Winnipeg, born at Chicago, Ill., Mar. 7, 1873.

J. M. McKay, Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, born at Tiverton, Ont., Mar. 13, 1868.

J. B. McLaren, General Auditor, G.T. R., Montreal, born at Perth, Ont., Mar. 5, 1878.

M. Magiff, Superintendent of Car Service and Telegraphs, Central Vermont Ry., St. Albans, Vt., born at Planks Point, N.Y., Mar. 24, 1852.

Sir Donald D. Mann, President, Canadian North Eastern Ry. and ex Vice President, Canadian Northern Ry., Toronto, born at Acton, Ont., Mar. 23, 1853.

H. H. Melanson, Passenger Traffic Manager, Canadian National Rys., Toronto, born at Scadouc, N.B., Mar. 9, 1872.

P. J. Melvin, Contracting Freight Agent, Marine Navigation Co. of Canada Ltd., Montreal, born at Trim, Ireland, Mar. 3, 1872.

W. T. Moodie, Superintendent, Division 3, Central District, Canadian National Rys., Port Arthur, Ont., born at Glasgow, Scotland, Mar. 10, 1882.

Peter Paton, ex Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, now President, Mackenzie, Milne & Co., Ltd., Sarnia, Ont. born at New Lovell, Ont., Mar. 13, 1868.

F. W. Peters General Superintendent, British Columbia District, C.P.R., Vancouver, born at St. John, N.B., Mar. 25, 1860.

J. W. Pugsley, Secretary, Department of Railways and Canals, Ottawa, Ont., born at Amherst, N.S., Mar. 12, 1861.

L. G. Roblin, Master Mechanic, Prairie District, Canadian National Rys., Saskatoon, Sask., born in Prince Edward Island, Mar. 24, 1864.

C. J. Smith, Manager and Secretary, Montreal Warehousing Co., Montreal, born at Hamilton, Ont., Mar. 10, 1862.

G. L. Snelling, Secretary - Treasurer, Ottawa Electric Ry., Ottawa, Ont., born there, Mar. 2, 1880.

W. Y. Soper, Vice President, Ottawa Electric Ry. Co., Ottawa, Ont., born at Oldtown, Me., Mar. 9, 1854.

E. F. L. Sturdee General Agent, Passenger Department, C.P.R., Seattle, Wash., born at St. John, N.B., Mar. 29, 1876.

G. W. Vaux, ex-General Agent, Passenger Department, Union Pacific Rd., Chicago, now General Manager, Zeigler Coal Co., Zeigler, Ill., born at Montreal, Mar. 21, 1866.

A. T. Weldon, Assistant Freight Traffic Manager, Eastern Lines, Canadian National Rys., Montreal, born at Dorchester, N.B., Mar. 6, 1876.

D. O. Wood, Traffic Manager Export and Import Department, Canadian National Rys., Toronto, born at Kleinburg, Ont., Mar. 16, 1864.

## C.P.R. War and Employment Figures.

The following figures, revised to Jan. 31, show C.P.R. employes who enlisted, and who have been given employment on their return from overseas:

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|---|---|
| Total reported as joining the army | 10,931 |
| Dead | 1,063 |
| Wounded | 2,050 |
| Re-employed in the service | 6,586 |
| Other soldiers given employment | 8,728 |
| Total soldiers given employment to Jan. 31 | 15,314 |

# Express Franks Considered by Board of Railway Commissioners.

The Chief Railway Commissioner, Hon. F. B. Carvell, prepared the following memorandum, dated Jan. 19: "The question has arisen as to what rights Canadian express companies have in issuing franks, and an examination of the Railway Act, 1919, shows that, so far as tariffs and tolls are concerned, they are governed entirely by Sec. 360, subsec. 2, which provides that: 'The board may disallow any express tariff or any portion thereof which it considers unjust or unreasonable, and shall have and may exercise all such powers with respect to express tolls and such tariffs as it has or may exercise under this act with respect to freight tolls and freight tariffs.' Therefore, so far as tolls and tariffs are concerned, they are governed entirely by the law regarding freight tolls and tariffs, and, as I can find no provision in the act specifically allowing a railway company to carry freight free of charge, an express company has no such right, unless it can be found within the provisions of secs. 345, 346 and 347, dealing with reduced r ates and free transportation.

"The whole intention of sec. 345 is to give to the railway companies certain rights which may be exercised under their own discretion, subject always to the provisions of this section, and, in certain cases, if approved and permitted by this board, always provided, however, that in doing so no discrimination shall be practised. Sec. 345 begins with the following words: 'Nothing in this act shall be construed to prevent,' and sub clause (a) thereof allows the railway companies to carry, store, or handle traffic free, or at reduced rates, for the Dominion Government or for any provincial or municipal government, or for charitable purposes, or to or from fairs and expositions for exhibition thereat. As the word 'traffic' in the definition clause includes passengers, goods, and rolling stock, I therefore take it that it would mean goods carried by an express company, and I think an express company under this clause would have a right to carry goods free of charge for the parties and purposes mentioned therein. The remainder of the subclause (a) clearly refers to the carriage of passengers. Subclause (b) refers to the carriage at reduced rates of goods and effects belonging to immigrants and settlers, and commercial travellers' baggage. Subclause (c) refers expressly to the carriage of passengers, and subclause (d) allows railways and transportation companies, under which the express companies would come, to exchange passes or free tickets with other railways or transportation companies 'for their officers, agents, and employes, and their families, goods, and effects," and also for the issuing of passes or free tickets to 'the officers and employes of the Department of Railways and Canals, or their families, and their goods and effects,' I can find no other authority in the Railway Act, by which the express companies are justified in issuing express franks.

"It has been urged upon this board that clause (c) would justify express companies in granting franks to the members of this board, as well as our officers, agents, and employes, on the ground that at least the officials of this board would be officers, agents, or employes of the Department of Railways and Canals. As to the members of the board themselves, I have no doubt whatever that the express companies would not have the right to grant to us express franks, because whatever rights of free transportation we possess are given us under the provisions of sec. 346, which is very explicit, and states that, as a matter of law, we, and such other of our officers and staff as we may determine, have the right of free transportation, with our baggage, equipment, and official car. As to all of the officials of the board, including the members thereof, I am unable to come to the conclusion that we are in any way officers or employes of the Department of Railways and Canals. This board is created by statute as found in the Railway Act, 1919, secs. 9 to 71 both inclusive, and, by sec. 9, we are distinctly created a court of record, with an official seal which shall be judicially noticed. The only section in the Railway Act which might be invoked in support of the contention that we are in any way a part of the Department of Railways and Canals is sec. 31, which provides that: 'The board shall, within two months after Dec. 31 in each year, make to the Governor in council through the Minister an annual report.' It is true that the estimate for the members and staff of this board are presented to the House of Commons through the Minister of Railways and Canals, just the same as those of the judges of the Supreme and Exchequer Courts and the staffs thereof are presented to the house by the Minister of Justice, but no person would argue that the Supreme or Exechequer Court of Canada is a part of the Justice Department of Canada. I find, on an examination of the estimates for 1919-1920, that a lump sum is included in the estimates of the Railways and Canals Department for the maintenance and operation of this board, and also an estimate for the salaries of the Board of Railway Commissioners, although it is plainly stated these are authorized by statute. I also find that the estimates for the judges of the Supreme and Exchequer Courts, as well as all other judges in Canada, together with a lump sum for contingencies and disbursements for the officers of the Supreme and Exchequer Courts, are included in the estimates of the Minister of Justice. I find further confirmation of this contention in the provisions of the Civil Service Act, 1918, chap. 12, as amended by chap. 10, of the second session of the Dominion Parliament of 1919. By this act, for the purpose of administration thereof, the Board of Railway Commissioners means the same thing as the deputy or deputy head of a department, and the head of the department means the minister of the Crown for the time being presiding over the department, and I, therefore, take it that, for the purpose of the Civil Service Act, we are a department, with the Minister of Railways as our head, just the same as he is the head of the Department of Railways and Canals. In other words, the Minister of Railways, for the time being, occupies the dual position of Minister of Railways and Canals and as Minister at the head of the Railway Commission for the purpose of the Civil Service Act. If I am right in my contention that we are not a part of the Department of Railways and Canals, then the officers and employes of this board would not have the right under sec. 345 to receive, and the express companies would not have the right to grant, express franks.

"I have already referred to the authority by which members and officials of this board are entitled to free transportation as provided in sec. 346, which also provides that members of the Senate and House of Commons, with their baggage, shall be entitled to free transportation on any of the trains of a railway company, and as this is a right granted specifically by statute, and not a favor from the railway companies, I hold that had parliament intended that these persons specially referred to in sec. 346 should be entitled to receive free express franks, it would have said so, and, not having done so, and they not coming within any of the classes referred to in sec. 345, I am forced to the conclusion that express companies have no right to grant franks to them. I realize that for many years the express companies have granted express franks to a number of people in different parts of Canada, but I fail to find any authority therefor in the Railway Act, 1919, excepting in the few cases to which I have previously referred, namely to those persons and for the purposes set forth in the first part of clause (a) sec. 345, for the exchanging of passes with other transportation companies, and probably to some of the officers and employes of the Department of Railways and Canals, although in the exercise of this latter privilege, in my judgment, very great caution should be observed in the manner in which they are exchanged. Sec. 347 of the Railway Act is as follows: 'Subject to the provisions of sections 345 and 346 of this act, no company shall hereafter, directly or indirectly, issue or give any free ticket or free pass, whether for a specific journey or periodical or annual pass, and no company shall otherwise arrange for or permit the transportation of passengers except on payment of the fares properly chargeable for such transportation under the tariffs filed under the provisions of this act, and at the time in effect.' Therefore, unless the express companies can find some express authority for granting express franks, or can successfully extend the provisions of secs. 345 and 346 beyond my interpretation, I fail to see where they are justified in granting express franks, excepting as hereinbefore referred to.

"My object in thus expressing this opinion is to give, both to the transportation companies and the public, my views in the face of the fact that the express companies, as well as all other public utilities in Canada under the jurisdiction of this board, either have come, or are expressing an intention of coming, to this board for an increase in their rates in order that they may properly carry on the business of the country for which they were created, and, such being the case, while probably the amount of express matter carried on these franks forms a very small proportion of the total traffic of the express companies, yet the principle involved is just as important as though it amounted to a very large percentage thereof, and, if rates must be increased in order to place the companies in a position to properly exist, then every dollar's worth of free transportation given by means

of franks must be made up by the general paying public, a policy which is entirely inconsistent with the express provisions of the Railway Act against discrimination."

The foregoing was concurred in by Hon. W. B. Nantel, Deputy Chief Commissioner and Commissioners Boyce and Goodeve.

Assistant Chief Commissioner McLean submitted the following memorandum relating to the Chief Commissioner's memorandum: "Page 1, line 14: I would suggest adding the word 'specifically,' before 'allowing,' which is the last word in the line. This will make the meaning clearer.

"I agree in the memorandum of the Chief Commissioner. At the hearing on Jan. 20, he made a statement as to this memorandum having been prepared. His intention is that it should issue as an interim judgment, giving an opportunity, within a reasonable time, for hearing, if such is asked for. As what is primarily concerned is the power of express companies to issue franks, and the types of persons to whom same may be issued, it seems to me that, subject to whatever may be developed in further discussion, the express companies are really the only people who shall be given an opportunity to speak to the matter at a hearing. The recipients of franks do not receive them as a matter of right."

Commissioner Rutherford agreed with the Assistant Chief Commissioner.

## The Rhondda Interests in the Peace River Valley.

The late Lord Rhondda, the Welsh colliery proprietor, held extensive interests in the Peace River Valley and adjacent territory of northwestern Canada, including coal and oil lands. In order to provide for the development of these areas a charter was secured from the Domonion Parliament for the Peace River Tramway and Navigation Co., to build two pieces of railway to connect navigable stretches of the river, so as to secure an extensive trading route in the northwest. In connection with this enterpise a steamboat, the D. A. Thomas, was built on the river, and the Peace River Trading Co.'s assets were acquired. It was also reported that control of a railway charter for building a railway from Edmonton northerly to navigable water, and another for building a railway from tidewater on the northern British Columbia section of the Pacific coast inland had been acquired. All of this was done prior to the outbreak of the war in 1914. A recent visit of Lady Rhondda to the Peace River country has revived interest in the company's activities. The first result of the visit appears to have been the decision to give up the trading business, which a press report states has been disposed of to the Lamson, Hubbard Canadian Co., with head office at Boston, Mass. This transaction, it is stated, includes the stores at Peace River crossing, Fort Vermilion, Vermilion Chutes and Hay River. The transportation interests do not seem to be affected by this sale, as the report states that other steamboats will be added to carry freight through to the Arctic Ocean, in addition to the present steamboats operating from Hudson's Hope to Fort Vermilion.

# Classification, Qualifications and Salaries for Railway Engineers.

The Engineering Institute of Canada's Toronto branch adopted and recommended recently the following classification of engineers employed in railway work. The sums mentioned being the minimum salaries:

1. Chief Engineer, $10,000.
2. Assistant Chief Engineer, $7,200.
3. (a) Engineer of Maintenance. Should preferably be a graduate from an engineering school recognized by the institute and should have 8 to 10 years practical experience in engineering work, or, if not a graduate, should have from 12 to 15 years practical experience and should be thoroughly familiar with the mathematics of engineering, $6,600. (b) Engineer of Construction—Same qualifications as for Engineer of Maintenance, $6,600. (c) Bridge Engineer—Same qualifications as for Engineer of Maintenance, $6,600. (d) Principal Assistant Engineer—Same qualifications as for Engineer of Maintenance, $6,000.

4 (a) District Engineer—Should preferably be a graduate from an engineering school recognized by the institute and should have 6 to 8 years practical experience in engineering work, or, if not a graduate, should have from 10 to 12 years practical experience and should be familiar with the mathematics of engineering, $4,800. (b) Signal Engineer—Should preferably be thoroughly familiar with the theory and practice of signalling and of train operation, and should have had, in addition, at least five years practical experience in mechanical and electrical signal work on railways, $4,800. (c) Architect or Engineer of Buildings—Should have sufficient architectural training to design railway stations, shops, locomotive houses, dwellings, etc., of normal types, and should have 6 or 8 years practical experience in responsible design of railway buildings, $4,000. (d) 1st Assistant Engineer—Same qualifications as for District Engineer, $4,200. (e) Assistant Bridge Engineer—Should preferably be a graduate engineer with from 5 to 6 years practical experience in the office and in the field, $4,800.

5. (a) Division Engineer—Should preferably be a graduate engineer with 3 or 4 years experience of practical engineering, or, if not a graduate, should have 8 to 10 years practical experience and should be well grounded in the mathematics of engineering, $3,600. (b) 2nd Assistant Engineer—Same qualifications as for Division Engineer, $3,000. (c) Chief Draftsman—Should have a thorough knowledge of general drafting, but not necessarily knowledge of design, and should be able to control a number of subordinates and supervise their work, $2,500. (d) Designing Engineer in Structural Department—Should be thoroughly grounded in the theory of design and detail in his particular department, and should be able to control a number of subordinates and supervise their work, $3,600. (e) Leading draftsman in architectural department—Same qualifications as given for Designing Engineer in structural department, $2,400. (f) Signal Supervisor—Should be thoroughly familiar with the mechanical and electrical details of signalling, should have sound elementary knowledge of the principles of signalling and should be qualiged to carry out and supervise construction and maintenance of all types of signal plants, $2,400.

6. (a) *Resident Engineer (construction only)—Should preferably be graduate engineer or have 3 or 4 years practical experience in the junior branches of engineering work, $2,700. (b) 3rd Assistant Engineer—Same qualifications as for Resident Engineer, $2,400. (c) Draftsman—Should be able to plot accurately from field note or notes and sketches supplied to him by a senior officer, $1,800. (d) *Inspector, class A—Should have a thorough knowledge of the class of work that he is employed to inspect and in the case of steel or reinforced concrete structures, should be a man of sufficient intelligence to understand the elementary principles of design and realize the necessity for close adherence to plans, and must be able to read and interpret plans correctly, $2,400.

7. (a) *Junior assistant or instrument man—Should have sufficient training in the use of level, or transit, or both, to do accurate work at a reasonable rate of speed, and should be thoroughly grounded in the mathematics required for the proper reduction and application of his instrumental work, $1,800. (b) Inspector, class B—Should have some practical experience in the class of work that he is employed to inspect, and have sufficient intelligence and firmness to enforce the carrying out of specifications, $1,800. (c) Junior Draftsman—Should have passed through his training as a tracer, and should have working knowledge of the use of drafting instruments, $1,500.

8. (a) Chainman—No previous experience required, $1,200. (b) Rodman—No previous experience required, $1,500. (c) Tracer—No previous experience required, $1,200.

*Indicates that expenses are paid.

## Assessment of Transportation Companies, Etc., in Toronto.

The Toronto Assessment Commissioner's annual report for 1919, shows that the various public service corporations in the city are assessed for $42,088,278, equal to about one-fourteenth of the entire assessment of the city. Following are the assessments of the steam and electric railway and telegraph companies:

| | 1920 | 1919 |
|---|---|---|
| Grand Trunk Ry. | $12,191,904 | $11,871,267 |
| Canadian Pacific Ry. | 9,307,274 | 9,302,203 |
| Canadian National Rys. | 1,389,337 | 1,385,695 |
| Toronto Ry. | 4,886,457 | 4,996,323 |
| Toronto & York Radial Ry. | 360,560 | 369,136 |
| Toronto Suburban Ry. | 46,669 | 78,293 |
| C.P.R. Co.'s Telegraphs | 240,073 | 203,170 |
| G.N.W. Telegraph Co. | 211,730 | 206,434 |

**Caraquet & Gulf Shore Ry. Proposed Sale**—In reference to the information in this connection, published in Canadian Railway and Marine World for February, pg. 77, we were advised from Ottawa, Feb. 11, that no negotiations in regard to the acquisition of the line by the Dominion Government, were then going on. As stated previously, parliament provided $200,000 in the estimates, to buy the line, and should the company be willing to accept this, no doubt arrangements will be made for taking it over.

# Canadian Northern Railway System Annual Report.

The Canadian Northern Ry. System's 4th annual report, dated Sept. 15, 1919, was issued early in February, over the signature of D. B. Hanna, President, as follows:—

The directors submit herewith the 4th annual report of the Canadian Northern Ry. System for the year ended Dec. 31, 1918. The previous annual report was for the 12 months ended June 30, 1917, since which date the company's fiscal year has been changed to conform with the general practice of most other railway companies on this continent. The results of operation from June 30 to Dec. 31, 1917 are shown in the statements included in the present report.

Since the last annual report the Canadian Government, by the acquisition of 600,000 additional shares in your company (having previously acquired 400,000 shares by way of bonus for guaranteeing certain securities of the company), became the beneficial owner of the company's entire capital stock then outstanding, with the exception of five shares which were issued in exchange for an equivalent amount of Canadian Northern Ry. 5% income charge convertible debenture stock. The purchase was made as of Sept. 30, 1917, the price payable by the government being subject to arbitration, on the conclusion of which and the delivery of the shares, the actual control of your company passed to the government, and a new board of directors was appointed in Sept., 1918.

The results of the operations of the system for the fiscal year ended Dec. 31, 1918, were as follows:—

| | | |
|---|---|---|
| Gross earnings— | | |
| Passenger traffic | $ 7,824,444.44 | |
| Freight traffic | 36,735,869.46 | |
| Express, mail and telegraphs | 1,212,881.95 | |
| Miscellaneous earnings | 1,536,816.06 | |
| | $47,310,011.91 | |
| Interest and profits from elevator and other subsidiary companies, investments, etc. | 1,752,700.59 | |
| | | $49,062,712.50 |
| Working expenses | $44,062,949.94 | |
| Hire of equipment, taxes, rentals and miscellaneous charges | 1,599,325.32 | |
| | | 45,662,275.26 |
| Net earnings | | $ 3,400,437.24 |
| Interest charges | | 17,898,246.98 |
| Net deficit | | $14,497,809.74 |

**Mileage**—The average mileage operated during the year was 9,452 miles, and at Dec. 31, 1918, the mileage in operation was 9,566.5 miles, an increase of 133.1 miles over 1917.

**Operating Revenues**—Gross earnings for 1918 increased by $5,839,990.07 over 1917 or 14.08% but, as referred to later on in detail, this increase in gross is due to the increased rates which took effect during the year under review.

**Traffic Movement**—Passenger traffic during the year shows an increase of $769,016.63 over 1917, notwithstanding that 388,993 passengers less were carried. The fact, however, that the passengers carried have averaged a larger mileage indicates that your company is securing an increasing share of western and Pacific business.

The number of revenue tons carried decreased by 545,035 tons as compared with 1917, and the average length of haul decreased by 10.27 miles. This is due largely to the shrinkage in grain tonnage due to the poor crop of 1917. The commodity statement shows a decrease of 18,986,113 bush. of grain handled as compared with the previous year. There was also less lumber carried, less building material, and less miscellaneous tonnage. While there was a substantial increase in flour traffic of 1,765,571 sacks of 100 lb. and in coal traffic of 247,651 tons, and a good increase in live stock traffic, these did not produce enough tonnage to overcome the loss in grain and other traffic.

**Operating Expenses**—In considering the 12 months under review, it must be remembered that the year had a most inauspicious beginning. Jan., Feb. and Mar., 1918 completed a winter which, for severity, stands without parallel in the history of railway operation. The intense cold and heavy snowfall which was general throughout Canada and all the northern states made operations so burdensome that net earnings for all lines thus affected were entirely wiped out, and many roads, including the most important trunk lines, accustomed to operate at a comparatively low ratio during the winter, showed large deficits. The cold weather extended well into April, and later on during the autumn and winter of 1918, the operating staff was badly crippled by the very serious influenza epidemic.

The effect of these adverse conditions was increased by other events which made further inroads on net earnings. The United States Government on Dec. 26, 1917, decided to take over the operation of all U.S. railway mileage of importance from Jan. 1, 1918, and one of the first acts of the administration was to establish a commission to enquire into the requests for increased wages which were then collectively before the managements of the U.S. railways. This commission's report was issued on Apr. 30, 1918, and recommended substantial increases for all railway employes. These recommendations were largely accepted by the Director General, and promulgated in his order 27, May 23, 1918, better known as the McAdoo award. There was an immediate and insistent demand from Canadian railway employes that the scale of increases provided in the McAdoo award be adopted in Canada. Many requests for wage increases were pending at the time. Wages on Canadian lines have in recent years been on a par with those on U.S. lines, the fact that the large brotherhoods of railway employes on this continent are international, having a direct bearing on the matter. The situation was a serious one, and governmental action was necessary, as it was apparent that the railways could not pay the increased wages without substantial increase of revenue.

Concurrently with the promulgation of general order 27, the U.S. Railroad Administration found it necessary to raise tariffs on freight and passenger business. Similar action was taken in this country, but only in respect of freight tariffs. While it was felt at the time that the increase in rates would largely compensate the railways for the heavy burden thrown on them in respect of increased wages, yet subsequent conditions have shown that the wage increases granted (which have applied to every department of railway operation) have enormously exceeded the increased revenue obtained from the higher scale of tariffs. The new scale of rates for employes in the shops and mechanical plants of Canadian railways took effect from May 1, 1918, and for other classes generally from Aug. 1, 1918. Supplements have been issued from time to time, augmenting the allowance to various classes of employes, shortening the hours of service, and generally adopting the 8 hour day, with many other specific improvements in working conditions, all having the immediate effect of largely increasing the employes' compensation. The result of this was that at the end of the calendar year the company's payroll which had previously averaged $1,890,000 a month, reached the enormous total of $2,815,000 a month, equivalent to an additional $925,000 a month, representing an increase of almost 50% over the wages paid up to the date the McAdoo award took effect. Besides wage increases, other items of operating expenses continued to show large advances. Under these exceptional circumstances, the cost of operation for the year advanced by $10,036,297.51, or 29.49%.

**Land Sales** for the period since the last annual report were 81,661.346 acres for $1,588,264.14, an average of $19.45 an acre, compared with an average of $17.82 for the preceding year. During the same period, sales previously entered into, aggregating 58,920.10 acres, were, by mutual agreement, cancelled, so that the acreage of land available for sale has been decreased by 22,741.246 acres, leaving a total of 818,958.532 acres unsold.

**Car Trusts Obligations**—Since the last annual report additional car trusts obligations have been created to the extent of $5,000,000, for the purchase of equipment of different kinds, and $4,705,500 has been repaid in respect of previous obligations, thus making a net increase on this account of $294,500.00.

**Freight and Passenger Rates**—In the previous annual report reference was made to certain rate increases which took effect on Mar. 15 and June 1, 1918. As already mentioned in this report a further increase in freight rates only was arranged for in connection with the adoption of the McAdoo scale of wage increases. This latter increase has been popularly known as a 25% increase, but, in actual application (being coupled with the previous increase and being utilized in the direction of equalization of rates as between eastern and western Canada) has only produced an increase in freight revenue of about 15½%, so that, putting the two increases together, freight tariffs are increased by less than 30%.

**Conditions and Prospects** — Shortly after the signing of the armistice, traffic began to fall off, and from January to the date of this report, the tonnage carried shows a large decrease compared with the same period of the previous year. The present situation is, therefore, a very serious one. In the first place, the wage increases under the McAdoo award have greatly exceeded the increase in revenue granted to offset them, largely due to the supplements to the award which were not contemplated at the time the tariffs were increased, and also due to the fact that business on which the increased tariffs were estimated to apply has fallen off to a considerable extent. The prices of materials and supplies still stand at the highest

point, and so long as these conditions continue no improvement can be expected in net revenue.

**Construction and Betterments**—Prior to the war the company had in western Canada a number of branch lines under construction, but work on these lines, owing to limitation on spending of capital moneys, and also the difficulty of obtaining material, was necessarily discontinued. Since the signing of the armistice, urgent requests from settlers along the projected lines were renewed, and after many delegations from various sections of the prairie provinces had been received by your directors and the executive, and after the entire situation had been carefully reviewed, a programme of construction was adopted providing for the completion of certain partly constructed and projected lines which would serve new districts where settlement had preceded the railway and where the settlers were suffering most through lack of transportation facilities. Provision for this construction programme and for the company's betterment and equipment requirements, have been made in the government estimates for the current year and the work is under way. Due to the difficulty of securing material, expenditures beyond those actually required for current operation where not incurred during the war, and the shortage in some respects was so great that actual operating requirements could not always be met, with the result that in the year under review, only a comparatively small amount of betterment work could be undertaken. For this reason the programme of betterment work submitted by the management for the present year was an extensive one, and your directors have approved the expenditure of a substantial sum to be devoted to providing improvements to the physical property of your system.

**New Equipment**—To provide for additional train service and to take care of new mileage, equipment was ordered and delivered during the year as follows—60 consolidation locomotives; 10 six-wheel switching locomotives; 10 passenger refrigerator cars; 140 forty ton freight refrigerator cars; 5,000 forty ton steel underframe and side frame box cars; 300 thirty ton wooden stock cars; 500 forty ton steel frame flat cars; 250 fifty ton steel underframe gondola cars; 250 fifty ton wooden dump cars; 25 fifty ton steel tank cars; 15 forty ton steel tank cars.

**Lines Acquired**—The Toronto Suburban Ry. (operated by electricity) with 46 miles of suburban line from Toronto to Guelph, and 19 miles of urban lines, mostly within the City of Toronto, and the Toronto Eastern Ry. (electric) with 19 miles of partly constructed line between Bowmanville, Oshawa and Whitby, Ont., have been acquired by your company. The operations of these lines will be included with those of the Niagara, St. Catharines and Toronto Ry. in a separate statistical statement, the net return alone being included in the system accounts.

**Leaside Terminals**—The first units of the Leaside terminals at Toronto, which were about completed at the close of 1918, were put into operation in the early summer of 1919. This plant will provide repair facilities for Ontario lines which have hitherto lacked suitable shop accommodation. The shops are conveniently located near the North Toronto terminals in which your lines have a joint interest with the C.P.R.

**Montreal Tunnel**—On Oct. 21, 1918 last, service through the Montreal tunnel was inaugurated, and since then, regular service between Montreal, Ottawa and Toronto has been given, using the new short line between Hawkesbury and Montreal.

**Ocean Steamship Services**—Early in 1918 the Dominion Government, realizing the need for a mercantile fleet to develop Canadian export trade, placed orders with Canadian shipbuilding firms for a large number of ocean-going steamships. The government has arranged for these ships to be operated by a company under the charter name of the Canadian Government Merchant Marine Ltd., the directors of which company are members of your board. Up to date 12 ships have been delivered, and the following services have been established; Between Montreal and St. John's, Nfld., Cuba, the West Indies, South America and various United Kingdom ports, which services will continue from Halifax, or St. John, during the winter. Cargoes have also been carried to French ports, and from Vancouver to United Kingdom ports via the Panama Canal, and a service from Vancouver to Australia is just about to be established. Additional services have been arranged for as soon as further vessels are delivered by the builders, and the operation of the boats is confidently expected to reflect most satisfactory results in the building up of Canadian trade and from which the Canadian National Rys. should receive substantial benefits in traffic returns.

**Vancouver-Victoria Car Ferry**—During the year, the car ferry Canora was completed at Quebec, and made the trip from there to Vancouver via the Panama Canal. It is now in regular operation between Vancouver Island and the mainland.

**Organization** — Immediately following their appointment, the directors took up the reorganization of the official staff of the Canadian Northern Ry. System. This matter was under way when, by order in council passed on Nov. 20, 1918, your directors were constituted a board of management for the Canadian Government Railways. This necessitated a more extensive rearrangement of official personnel, and the amalgamation of the staffs of the two systems. In anticipation of post-war developments, the Resources Department has been strengthened and is carrying on active work. It will handle immigration matters.

The use of the collective title "Canadian National Railways," as representing both the Canadian Northern System and the Canadian Government lines, was authorized by order in council passed Dec. 20, 1918, and by special act of the Dominion of Canada, the Canadian National Ry. Co. has been incorporated, in order that the various railways under federal control may be operated by the new company for the government.

The members of your board have made inspections of most of your lines, and additional inspection trips will be made from time to time, so that your board may have first hand information as to the general condition, upkeep and operation of the railway.

Your board is glad to welcome back to the service of the railway those officers and employes who have been serving with Canada's expeditionary forces in the great war. To those who have suffered bereavement, the directors desire to convey their sincere sympathy. The board expresses to the management and employes its thanks for loyal and efficient services rendered throughout the year. In this connection it should be remembered that the epidemic of influenza created conditions of great hardship, and resulted in overtaxing those on whom fell the burden of carrying on, during the periods when many employes were forced to remain out of service. To the families of those who succumbed to the attack of this dread disease, the board desires to tender its sympathetic condolences and to record its sense of loss by the death of a number of valued officers and employes.

**Income Statement Year Ended Dec. 31, 1918.**

| | | |
|---|---|---|
| Revenue | $47,310,011.91 | |
| Subsidiary miscellaneous earnings | 1,752,700.59 | |
| | | $49,062,712.50 |
| Working Expenses | $44,062,949.94 | |
| Taxes, rentals, joint facilities, etc. | 1,599,325.32 | 45,662,275.26 |
| Net earnings | | $ 3,400,437.24 |
| Fixed charges — Canadian Northern Ry. | $ 6,875,465.58 | |
| Fixed charges — Affiliated companies | 4,301,207.57 | |
| Interest on demand and short term notes— | | |
| Government | 3,926,279.61 | |
| Other | 2,795,294.22 | |
| | | 17,898,236.98 |
| Deficit carried to profit and loss statement | | $14,497,809.74 |

**Profit and Loss Statement at Dec. 31, 1918.**

| | | |
|---|---|---|
| Deficit on income account | $14,497,809.74 | |
| Discount, etc., on funded debt | 694,624.97 | |
| Taxes accrued to Dec. 31, 1918 | 409,657.67 | |
| Adjustment interest on D.R.L. and Winnipeg Ry. bonds included in D.W.P.R. account in C.N.R. accrued interest statement, Sept. 30, 1917 | 24,999.99 | |
| | $15,627,092.37 | |
| Less delayed income, debits and credits, credit balance | 47,237.24 | |
| | $15,579,855.13 | |
| Adjustment of land sales | 936,101.83 | |
| Net deficit | | $14,643,753.30 |
| Surplus brought forward | | 32,575,977.91 |
| Total surplus to Dec. 31, 1918, carried to balance sheet | | $17,932,224.61 |

**Operating Revenues Years Ended Dec. 31.**

| % | 1918 | Class | 1917 | % |
|---|---|---|---|---|
| 16.54 | 7,824,444.44 | Passenger | 7,055,427.81 | 17.01 |
| 77.65 | 36,735,869.46 | Freight | 32,012,791.03 | 77.19 |
| .52 | 245,187.12 | Mails | 249,983.06 | .62 |
| 2.04 | 964,617.55 | Express | 856,402.77 | 2.06 |
| 3.25 | 1,539,893.34 | Miscellaneous | 1,295,417.17 | 3.12 |
| 100.00 | 47,310,011.91 | Total | 41,470,021.84 | 100.00 |

**Operating Expenses Years Ended Dec 31.**

| % | 1918 | Class | 1917 | % |
|---|---|---|---|---|
| 20.56 | 9,060,264.79 | Maintenance of way and structures | $7,059,883.88 | 20.75 |
| 19.29 | 8,498,673.11 | Maintenance of equipment | 6,086,901.56 | 17.89 |
| 1.81 | 797,191.68 | Traffic expenses | 777,121.18 | 2.29 |
| 54.26 | 23,907,348.28 | Transportation expenses | 18,247,439.92 | 53.62 |
| 1.31 | 576,071.12 | Miscellaneous operations | 546,378.12 | 1.61 |
| 2.77 | 1,223,410.96 | General expenses | 1,308,927.77 | 3.84 |
| 100.00 | $44,062,949.94 | Total | $34,026,652.43 | 100.00 |

**Summary of Revenues and Expenses Years Ended Dec. 31.**

| % | 1918 | Class | 1917 | % |
|---|---|---|---|---|
| | $47,310,011.91 | Operating revenues | $41,470,021.84 | |

| | | | | |
|---|---|---|---|---|
| 93.13 | 44,062,949.94 | Operating expenses | 34,026,652.43 | 82.04 |
| 6.87 | 3,247,061.97 | Net earnings .... | 7,443,369.41 | 17.96 |
| 100.00 | | | | 100.00 |

Earnings, Expenses and Net Earnings

Per mile operated year ended Dec. 31.

| Year | Average miles operated | Earnings | Expenses | Net earnings |
|---|---|---|---|---|
| 1917 | 9.433 | $4,396.27 | $3,607.19 | $789.08 |
| 1918 | 9.452 | 5,005.29 | 4,661.76 | 343.53 |

Fixed Charges Per Mile of Line.

| | 1918 | 1917 |
|---|---|---|
| Amount required per mile of road to pay fixed charges, including leased lines ..... | $1,893.60 | $1,695.24 |

Description of Freight Carried for Years Ended Dec. 31.

| | 1918 | 1917 |
|---|---|---|
| Flour, sacks (100 lb. each).. | 8,904,498 | 7,138,927 |
| Grain, bushels ..... | 93,985,078 | 112,971,191 |
| Live stock, head (all kinds) | 654,583 | 609,409 |
| Logs and lumber, ft., m.f..... | 1,614,829 | 1,970,656 |
| Firewood, cords ..... | 362,118 | 334,489 |
| Coal, tons ..... | 2,373,985 | 2,126,334 |
| Immigrants' effects, cars..... | 5,279 | 3,958 |
| Building material (lime, stone, brick, sand, etc.), cars ..... | 29,794 | 33,340 |
| Miscellaneous, tons ..... | 4,048,065 | 4,269,115 |

Passenger, Freight and Miscellaneous Statistics Compared With Previous Fiscal Year.

PASSENGER TRAFFIC

| | 1918 | 1917 |
|---|---|---|
| Passengers carried (earning revenue ..... | 4,114,965 | 4,503,958 |
| Passengers carried one mile ..... | 288,067,800 | 293,322,255 |
| Passengers carried one mile per mile of road | 30,477 | 31,425 |
| Average distance carried | 70.01 | 65.13 |
| Total passenger revenue | $7,127,141.55 | $6,437,305.25 |
| Average amount received per passenger ..... | $1.73.225 | $1.42.925 |
| Average amount received per passenger per mile, cents ..... | .02.474 | .02.194 |
| Total passenger train earnings ..... | $8,783,084.63 | $7,970,489.84 |
| Passenger train earnings per train mile.... | 1.28.903 | 1.14.649 |

FREIGHT TRAFFIC

| | | |
|---|---|---|
| Revenue tons carried.... | 13,289,641 | 13,834,676 |
| Revenue tons carried one mile ..... | 4,021,275,963 | 4,328,241,986 |
| Revenue tons carried one mile per mile of road ..... | 425,442 | 463,707 |
| Average distance haul of one ton ..... | 302.59 | 312.86 |
| Total freight revenue... | $35,674,816.63 | $31,134,034.68 |
| Average amount received for each ton of freight ..... | $2.68.441 | $2.25.043 |
| Average revenue per ton per mile, cents ..... | .00.887 | .00.719 |
| Total freight train earnings ..... | $36,719,136.76 | $31,937,926.59 |
| Freight train earnings per train mile ..... | $3.24.220 | $2.69.118 |

TRAIN MILEAGE.

| | | |
|---|---|---|
| Mileage of passenger trains ..... | 5,044,607 | 5,037,334 |
| Mileage of freight trains ..... | 9,556,238 | 9,952,918 |
| Mileage of mixed trains | 1,769,124 | 1,914,725 |

EXPENSES PER TRAFFIC TRAIN MILE

| | | |
|---|---|---|
| Maintenance of way and structures, cts.... | 54.67 | 41.28 |
| Maintenance of equipment, cts. ..... | 51.12 | 35.39 |
| Traffic expenses, cts..... | 04.79 | 04.52 |
| Transportation expenses | 1.43.69 | 1.05.83 |
| Miscellaneous operations, cts. ..... | 03.52 | 03.23 |
| General expenses, cts..... | 07.10 | 07.42 |
| Total ..... | $2.64.89 | $1.97.67 |

Operations of Electric Lines Not Included in Above Statement.

| | | |
|---|---|---|
| Passengers carried (earning revenue ..... | 6,036,625 | 5,859,032 |
| Total passenger revenue | $504,319.84 | $441,675.72 |
| Revenue tons carried.... | 409,704 | 423,642 |
| Total freight revenue.. | $252,746.20 | $225,809.38 |

Summary of Equipment at Dec. 31.

| | 1918 | 1917 |
|---|---|---|
| Locomotives ..... | 788 | 735 |
| Sleeping and dining cars..... | 116 | 116 |
| Passenger cars ..... | 596 | 624 |
| Baggage, mail and express cars..... | 191 | 187 |
| Business cars ..... | 25 | 22 |
| Freight, refrigerator and stock cars | 31,828 | 29,489 |
| Conductors' vans ..... | 426 | 443 |
| Boarding, tool, auxiliary cars, steam shovels and snow equipment ..... | 1,67$ | 1,520 |

Miles of Railway.

The total mileage operated at Dec. 31, 1918, including lines owned and leased, was 9,566.5 miles, made up as follows:

| | Miles. |
|---|---|
| Lines in Nova Scotia..... | 374.6 |
| Quebec Division ..... | 786.3 |
| Ontario Division ..... | 1,792.2 |
| Minnesota Division ..... | 172.6 |
| Central Division ..... | 2,678.0 |
| Western Division ..... | 2,989.9 |
| Pacific Division ..... | 711.3 |
| | 9,504.9 |
| Electric lines in Ontario..... | 61.6 |
| | 9,566.5 |

Location of Lines.

| | |
|---|---|
| Nova Scotia ..... | 374.6 |
| Quebec ..... | 729.5 |
| Ontario ..... | 2,253.3 |
| Manitoba ..... | 1,995.7 |
| Saskatchewan ..... | 2,218.3 |
| Alberta ..... | 1,246.9 |
| British Columbia ..... | 531.9 |
| Minnesota ..... | 216.3 |
| Total ..... | 9,566.5 |
| Average miles operated for fiscal year..... | 9,452 |

Summary of Mileage.

| | | |
|---|---|---|
| Mileage owned by Canadian Northern Ry. System ..... | | 9,067.5 |
| Joint running rights, etc.— | | |
| Toronto to Rosedale, G.T.R..... | 3.8 | |
| Grand Trunk Crossing, Orillia, C.P.R. ..... | 2.8 | |
| Harrowsmith to Kingston, C.P.R..... | 18.6 | |
| Riverside to Ottawa Union Station, G.T.R. ..... | 1.7 | |
| Current River to Port Arthur, C.P.R. | 2.1 | |
| Chip Lake to Obed, G.T.P..... | 77.8 | |
| Snaring to Geikie, G.T.P. ..... | 21.0 | |
| New Westminster to Vancouver, Great Northern ..... | 13.8 | |
| Halifax to Southwestern Jct., C.G.R. | 6.0 | |
| Middleton Jct. to Middleton, D.A.R... | .6 | |
| Duluth to D.W. & P. Jct, Nor. Pac. | 3.5 | |
| | | 151.7 |
| Lines leased—Northern Pacific in Manitoba .....347.3 | | 347.3 |
| Total mileage operated..... | | 9,566.5 |

## Suit Against Express Company for Damage to Strawberries.

The Quebec Court of Appeal gave judgment at Montreal, recently, on the appeal of H. V. Clogg, trading as J. R. Clogg and Co., fruit importers, against a Superior Court decision, dismissing an action brought against the Canadian Express Co. and the American Express Co. to recover $424.74 loss on a car load of strawberries which had deteriorated in quality in transit from Independence, La. The fruit was consigned from Independence by the American Express Co., May 5, 1916, and was transferred on Clogg's instructions to the Canadian Express Co., at Port Huron, Mich. The cost laid down in Montreal was $1,725.94. On delivery it was found that the fruit had deteriorated, and it was sold for $1,301.20. Clogg alleged that the deterioration was due to the carriers' negligence in not keeping the car sufficiently cooled, and sought to recover the difference in value from the Canadian Express Co.—the American Express Co. being subsequently added as a defendant. The Superior Court dismissed the action, and Clogg appealed. After argument, Justice Demers found that the consignment was shipped in good order, and there was a new contract when the car was transferred to the Canadian Express Co. at Port Huron. Article 1675 of the Civil Code provides that carriers are liable for loss or damage of things entrusted to them unless they can prove that such loss or damage was caused by a fortuitous event or irresistible force, or arose from a defect in the thing itself. It was not Clogg's duty to show how the loss was occasioned. It was evident that the Canadian Express Company showed lack of care in transportation. It ought to know its business sufficiently not to take over a defective car from another company, if it was necessary to assume in this case to believe that this car was not in a proper condition when taken over at Port Huron. As it was admitted the temperature of the car was too high when it arrived at Montreal, it was probable that it had not been sufficiently iced between Port Huron and Montreal. The Superior Court's decision dismissing the action as against the American Express Co. was affirmed, and reversed as against the Canadian Express Co. Judgment for $424.74 with interest and costs was entered against the Canadian Express Co.

## Railway Situation in Gaspe Penninsula.

A meeting of merchants, lumbermen and others interested in the development of the Gaspe Peninsula was held in Quebec, Feb. 5, to consider the railway situation in their district. It is served by the Quebec Oriental Ry., from Matapedia on the Intercolonial Ry., to New Carlisle, 98 miles; and the Atlantic, Quebec and Western Ry., from New Carlisle to Gaspe Basin, 104 miles; both lines being under one management. After hearing reports as to the condition of the roadbed, the rolling stock and the service being given, an association for the improvement of the railway situation on the Gasp coast was formed, with Hon. J. H. Kelly as President, and a number of resolutions were passed. The two important ones were: To authorize the executive committee to place before the Dominion Government the real situation as to the railways, and to ask that the government acquire the lines either by agreement as to value, or by arbitration, and that meanwhile the Board of Railway Commissioners be asked to order the companies to furnish a daily mail and passenger service in each direction between Matapedia and Gaspe Basin.

**Ice Railway at Port Arthur**—The Contractors for the extension of the breakwater at Current River, Port Arthur, Ont., Chambers, McQuigge, McCaffrey Co., have laid a single track narrow gauge railway, with passing tracks, over the ice from the mainland to where the breakwater is being built. The rolling stock consists of 4 locomotives and a large number of dump cars. Each train consists of 6 cars, the load being about 50 tons, about 1,000 tons a day being dumped into 40 ft. of water. The contract covers the construction of 1,500 ft. of breakwater.

**Cornwall International Bridge Taxation**—The Ontario Legislature is being asked to ratify a Cornwall Tp. Council bylaw confirming an agreement made between the council and the Ottawa and New York Ry., fixing an annual assessment of $150,000 on the portion of the international bridge between Canada and the United States, which is in Cornwall Tp.

The Canadian Transfer Co.'s Toronto stables were damaged by fire Feb. 6, the loss being put at $1,500. About 40 horses in the stables were saved.

**Spanish Railway Companies** have asked authority to increase freight rates 35% to meet increased operating expenses.

# Mainly About Railway People Throughout Canada.

W. R. Baker, C.V.O., formerly Assistant to the President, and Secretary, C.P.R., who returned to Montreal from Europe recently, passed through Vancouver, at the end of January, on his way to California, intending to return to Montreal in the spring. Mrs. Baker is spending some time in Austria.

John Bollen, Foreman, Locomotive Shops, C.P.R., Winnipeg, who has retired from active service, was presented with a case of pipes and a purse of money by his staff, Feb. 13.

George Hugh Brown, whose appointment as Commercial Agent, G.T.R., Minneapolis, Minn., was announced in our last issue, was born at West Lebanon, N.H., Oct. 17, 1876, and entered G.T.R., service Jan. 2, 1882; since when he has been, to Jan. 1, 1898, messenger, stenographer, clerk, Chicago, Ill.; Jan. 1, 1898 to July 1, 1915, Soliciting Freight Agent, Chicago, July 1, 1915, to July 1, 1918, Commercial Agent, Omaha, Neb.; July 1, to Nov. 1, 1918, Tariff Inspector, Chicago; Nov. 1, 1918 to Jan. 1, 1920, Travelling Representative, Chicago. His father, David Brown, was in G.T.R. service from 1866 to 1903, retiring as First Assistant General Freight Agent, Chicago.

R. L. Burnap, who has been appointed Freight Traffic Manager, G.T.R. lines in the U.S., west of Detroit and St. Clair Rivers, Chicago, Ill., was born Sept. 20, 1872, and entered railway service in 1894, since when he has been, to May 1, 1896, consecutively, clerk in Local Freight Agent's office, Central Vermont Ry.; clerk in Division Freight Agent's office, Ogdensburg Transit Co., and clerk in Division Freight Agent's office, Central Vermont Ry., Ogdensburg, N.Y.; May 1 to Sept. 1, 1896, clerk in Commercial Agent's office, Central Vermont Ry., New York City; Sept. 1, 1896 to Feb. 1, 1900, Travelling Freight Agent, Central Vermont Ry., New London, Conn.; Feb. 1, 1900 to Aug. 1, 1905, Commercial Agent, Central Vermont Ry., New York City; Aug. 1, 1905 to May 1, 1908, General Freight Agent, Central Vermont Ry., St. Albans, Vt.; May 1, 1908 to Oct. 16, 1911, Assistant General Freight Agent, G.T.R., Chicago, Ill.; Oct. 16, 1911, to May 1, 1918, Assistant Freight Traffic Manager, G. Y. R., Chicago, Ill.; May 1, 1918, to Mar. 1, 1920 Traffic Manager, Grand Trunk Western Lines Rd. (U.S. R.A.) Chicago, Ill.

William Byers, car inspector, G.T.R., Niagara Falls, Ont., after 48 years service, retired under the company's pension rules, early in February. He commenced service with the Great Western Ry. in 1872, and continued with the G.T.R. when the former company was taken over.

Hon. Frank Cochrane, ex Minister of Railways and Canals, who died some months ago, left an estate valued at $423,974.93. Mrs. Cochrane is to receive one-half of the income for life; the son and daughter are each to receive one-quarter of the income during Mrs. Cochrane's life, after which the estate is to be divided equally between them.

A. E. Corbett, locomotive foreman, Canadian National Rys., St. John, N.B., was accidentally killed while at work recently. He was 34 years old, and had been in government railway service for 8 years.

Edward Cassidy Elliott, who has been appointed District Passenger Agent, G.T.R., Montreal, was born there, Oct. 12, 1877, and entered G.T.R., service, June 15, 1894, since when he has been, to Feb. 1, 1898, junior clerk; Feb. 1, 1898 to June 1, 1902, clerk; June 1, 1902 to June 1, 1907, freight clerk; June 1, 1907 to June 1, 1913, excursion clerk; June 1, 1913, to Jan. 1, 1916, chief clerk to General Passenger Agent; June 1, 1916, to Feb. 1, 1920, chief clerk to Passenger Traffic Manager, all at Montreal.

D. W. Fraser, heretofore Managing Director, Montreal Locomotive Works, Montreal, has been appointed Vice President, in charge of sales, American Locomotive Co., and Montreal Locomotime Works, with office in New Work, N.Y., succeeding J. D. Sawyer, who has retired. He will be succeeded at Montreal by Mr. Butler, heretofore Works Manager.

F. E. Gautier, Purchasing Agent, Western Lines, C.P.R., who died at Winnipeg some little time ago, left an estate valued at approximately $60,000, which, owing to a peculiar codicil to his will, appeared to have been left to the St. John Ambulance Association, but by a recent decision of a local court, has been handed over to his widow.

G. E. Graham, General Manager, Dominion Atlantic Ry., Kentville, N.S., who was injured in a train wreck on the C.P.R. at North Bay, Ont., at the end of January, expects to return to his duties early in March.

Grant Hall, Vice President; F. L. Wanklyn, General Executive Assistant, Allan Purvis, General Superintendent, Ontario District; A. Williams, Superintendent, London Division, and M. H. Brown, Division Freight Agent, C.P.R., were the principal guests at a dinner given by the London, Ont., Chamber of Commerce directors, Feb. 11.

John Hall, formerly roundhouse foreman, G.T.R., died at Hamilton, Ont., Feb. 20, aged 89. When 16 years old, he was fireman on a locomotive at Newcastle, Eng., built by Geo. Stephenson, and for two years ran a locomotive on the old railway between Liverpool and Carlisle, Eng. He was locomotive man on the first train that ran between Madrid and Aranquery, Spain. He came to Canada in 1853, entered Great Western Ry. service at Hamilton and ran the first train between Hamilton and Niagara Falls, Ont., and continued with the G.T.R. when the G.W.R. was taken over.

H. H. Hamill, who has been appointed General Agent, Freight Department, G. T.R., Detroit, Mich., was born at Somerville, Mass., Apr. 6, 1874, and entered transportation service with the Johnson Steamship Line, Boston, Mass., in 1893, and from Feb. 1, 1900, to June 1, 1906, was city solicitor, National Despatch Line, Boston, Mass.; June 1, 1906, to Apr. 1, 1910, Travelling Agent, National Dispatch-Great Eastern Line, Boston, Mass.; Apr. 1, 1910 to Nov. 1, 1911, Soliciting Freight Agent, G.T.R., New York City; Nov. 1, 1911 to June, 1914, Travelling Freight Agent, G.T.R., New York; June, 1914 to Nov., 1918, Commercial Agent, G.T.R., Detroit, Mich.; Nov., 1918 to May, 1919, General Agent, Freight Department, Lines in Canada, G.T.R., Detroit, Mich.; May, 1919 to Mar. 1, 1920, General Agent, Freight Department, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich.

D. B. Hanna, President, Canadian National Rys., Mrs. Hanna, and their two daughters, returned to Toronto, Feb. 9, after spending some three weeks at Miami, Florida.

J. M. Hannaford, who has been elected President, Northern Pacific Ry., was born at Claremont, N.H., Nov. 19, 1850, and entered railway service, June, 1866, as clerk in the general freight offices, Central Vermont Ry., St. Albans, Vt. He entered Northern Pacific Ry.'s service May 11, 1872, since when, he has been, to May 1, 1879, chief clerk, General Freight Department; May 1, 1879 to 1881, Assistant General Passenger Agent; 1881 to Aug. 1, 1883, General Freight Agent, Eastern Division, Aug. 1, 1883 to Mar. 1, 1884, Assistant Superintendent, Freight Traffic; March 1, 1884 to May 1, 1886, General Freight Agent, main line and branches; May 1, 1886 to 1890, Traffic Manager; 1890 to Feb. 1, 1899, General Traffic Manager; Feb. 1, 18891899 to April 1, 1902, Third Vice President; April 1, 1902 to Aug., 1913, Second Vice President; Aug., 1913 to the taking over by the U.S. railways by the U.S. Railroad Administration, President; and during the last named period he was Federal Manager, Northwestern Region, U.S.R.A. He is also President, Northern Pacific Ex. Co.

Lieut.-Col. T. A. Hiam, who, before the war, was private secretary to Sir Donald Mann, at Toronto, has been appointed Vice President, Canadian North Eastern Ry. Co., and Vice President, Pacific Coast Exploration Co., of both of which companies Sir Donald Mann is President. His office is at Stewart, B.C. He went overseas with the Canadian Buffs in the autumn of 1916 as a lieutenant, and was at Witley Camp, Eng., for nearly a year, while the Buffs formed part of the 5th Canadian Division, and during which time he was promoted to captain and made assistant quartermaster. On the Buffs being broken up, for reinforcing purposes, he transferred to the Imperial Railway Troops, going to France in Feb., 1918 as captain, and was engaged for some time in railway operating work. He returned to England in Oct., 1918 on leave, and was sent almost immediately to Salonica, as railway transportation officer, and after being there a very short time, was transferred to Constantinople, promoted to major and made Deputy Assistant Director of Railway Transport, which department had charge of the Orient Ry. in European Turkey (Compagnie d'Exploitation des Chemins de Fer Orientaux) and also the Bagdad Line, which commences on the Bosphorus and extends to Bagdad, with a break from Nissibin to Samara, which is still under construction. This line is operated by the Societe Imperiale Ottomane de Chemin de Fer de Baghdad. From Constantinople he was transferred to Haidar Pasha as Assistant Director of Railways, and was promoted to lieutenant-colonel.

Robt. Hobson, President, Steel Company of Canada, and one of the Canadian National Rys. directors, has resigned from the Dominion Council for Scientific and Industrial Reseadch, and has been succeeded by Lloyd Harris.

Sir Herbert Holt, one of the C.P.R. directors, and President, Royal Bank of Canada and Montreal Light, Heat and Power Co., has been elected a director of Canadian Fur Auction Sales Co.

Chas. R. Hosmer, one of the C.P.R. directors, has been re-elected President, Ritz-Carlton Hotel Co., Montreal.

W. C. Hunter, who has been appointed Air Brake Inspector, Eastern Lines, Canadian National Rys., Montreal, was born at St. John, N.B., Jan. 4, 1865, and entered railway service in June, 1882, since when he has been, to Nov. 1, 1901, consecutively, car oiler, locomotive wiper, fireman, and locomotive man, Intercolonial Ry.; Nov., 1901 to June, 1904, General Air Brake Inspector, I.R.C. In 1904 he was appointed Manager, New Brunswick Ry. and Coal, and a few years later, left railway service for the railway supply business. He returned to railway service in 1919 with the Canadian National Rys. He was for a time Second Vice President of the Air Brake Association and took a prominent part in its work.

Howard G. Kelley, President, Grand Trunk Ry. and Grand Trunk Pacific Ry., is reported to have left Montreal, Feb. 26, with Hon. J. A. Calder, acting Minister of Railways, to meet the Prime Minister, Sir Robert Borden, in New York.

W. A. Kirkpatrick, whose appointment as acting Assistant Superintendent, Division 2, Central District, Canadian National Rys., Sioux Lookout, Ont., was announced in our last issue, was prior to Nov., 1911, Assistant Superintendent, Canadian Northern Ry., Winnipeg; Dec., 1911 to Sept., 1913, Transportation Inspector, same road; Sept. 1, 1913, to Sept., 1915, Assistant Superintendent, same road, Neepawa, Man.; Sept., 1915 to Dec., 1919, Trainmaster, same road, Neepawa, Man.

Capt. David Kyle, M.C., Vice President, Algoma Steel Corporation, which controls the Algoma Central and Hudson Bay Ry., Algoma Eastern Ry., and International Transit Co., died at Sault Ste. Marie, Ont., Feb. 5, from pneumonia.

T. J. Macabe, Registrar and Transfer Officer, Canadian National Rys., Toronto, who has been seriously ill with pneumonia, is convalescing.

Col. A. H. Macdonald, K.C., who had been Secretary of the Guelph Junction Ry. Co., since its inception, died at Guelph, Ont., Feb. 12, aged 71.

J. D. McDonald, who has been appointed General Passenger Agent, also in charge of Baggage Department, Lines west of Detroit and St. Clair Rivers, G.T.R., Chicago, Ill., was born at Toronto, Aug. 27, 1885, and entered G.T.R. service in 1868, since when he has been, to 1870, messenger, Toronto; 1870 to 1875, Assistant Ticket Agent, Toronto; 1875 to 1896, Ticket Agent, Buffalo, N. Y.; 1896 to May, 1902, City Passenger and Ticket Agent, Buffalo, N.Y.; May, 1902 to Mar. 1, 1911, District Passenger Agent, Toronto; Mar. 1, 1911 to Oct., 1918, Assistant General Passenger Agent, Chicago, Ill.; Oct., 1918 to May, 1919, Assistant General Passenger Agent, Chicago, Ill.; Oct., 1918 to May, 1919, Assistant General Passenger Agent, Eastern Regional District, U.S. Railroad Administration, Chicago, Ill.; May, 1919 to Mar. 1, 1920, General Passenger and Baggage Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Chicago, Ill.

C. W. McMullen, City Freight Agent, C.P.R., Toronto, was presented with a number of electrical appliances by the freight department staff recently, on the occasion of his marriage to Miss M. Dalby.

G. P. Magann, who died at Toronto, Feb. 13, aged 71, was President, Magann and Hawke Lumber Co., and Haliburton Lumber Co., and some years ago carried out some important construction works on the G.T.R., and C.P.R. as well as for the Dominion Government.

A. Z. Mullins, who has been appointed Division Freight Agent, G.T.R., Grand Rapids, Mich., was born at Appin, Ont., Feb. 14, 1862, and entered G.T.R. service Feb. 10, 1884, since when he has been, to May, 1887, telegraph operator, Komoka, Ont.; May, 1887 to Oct., 1896, rate clerk, chief clerk and Travelling Freight Agent, Buffalo, N.Y.; Oct., 1896 to Apr., 1900, Agent, National Despatch —Great Eastern Line, Grand Rapids, Mich.; Apr., 1900 to June, 1907, Agent, Lackawanna—Grand Trunk Line, Detroit, Mich.; July, 1907 to Apr. 30, 1919, Commercial Agent, Grand Rapids, Mich.; May, 1919, Division Freight Agent, G. T.R., Grand Rapids, Mich.; May, 1919 to Mar. 1, 1920, Division Freight Agent, Grand Trunk Western Lines Rd. (U.S. R.A.), Grand Rapids, Mich.

Patrick Nelson, formerly roadmaster, G.T.R., Hamilton, Ont., died there, Feb. 20, aged 78.

George Henry Nowell, who has been appointed Master Mechanic, Lethbridge Division, Alberta District, C.P.R., Lethbridge, was born at Montreal, Nov. 13, 1885, and entered railway service, July 2, 1889, since when he has been, to July 2, 1904, machinist apprentice, C.P.R., Montreal; July 2 to Nov. 5, 1904, machinist, C.P.R., Montreal; Nov. 5, 1904 to Feb. 15, 1905, machinist, C.P.R., North Bay, Ont.; Apr. 15 to Sept. 1, 1905, machinist, G.T.R., Montreal; Sept. 1, 1905, to Sept. 30, 1908, machinist, C.P.R., Montreal; Sept. 30, 1908 to Jan. 15, 1910, leading hand, C.P.R., Montreal; Jan. 15, 1910 to Jan. 15, 1913, charge hand, C.P.R., Montreal; Jan. 15, 1913 to Sept. 5, 1915, Erecting Shop Foreman, C.P.R., Ogden, Alta.; Sept. 5 to Dec. 1, 1915, Locomotive Foreman, C.P.R., Cranbrook, B.C., Dec. 1, 1915 to Feb., 1920, Master Mechanic, Nelson Division, British Columbia District, C.P.R., Nelson.

F. H. Phippen, K.C., formerly General Counsel, Canadian Northern Ry., returned to Toronto, Feb. 23, after a business trip to England.

Joseph Quinlan, District Passenger Agent, G.T.R., Montreal, after 43 years faithful service, will retire under the provision of the company's superannuation fund on April 1. He has held his present position for 18 years. He was granted leave of absence, Jan. 30.

Hon. J. D. Reid, Minister of Railways and Canals, returned to Ottawa at the end of February after spending about a month with Mrs. Reid at St. Augustine, Florida.

James Rogers, who died at Montreal, Feb. 2, aged 83, was formerly a railway contractor, and carried out considerable work on the G.T.R., C.P.R., Lake Superior and Sudbury branches, and at Port Arthur, Ont., the Baie des Chaleurs Ry., etc. He served during the Fenian Raid, as a lieutenant in the Grand Trunk Engineers.

H. T. Ruhl, Engineer, Maintenance of Way and Superstructures, Delaware and Hudson Rd., Albany, N.Y., died there, Feb. 16, of pneumonia, after 10 days illness. He was born at Mifflinburg, Pa., Sept. 29, 1882, and entered railway service, Sept. 22, 1902, since when he had been, to June, 1904, rodman, C.P.R., Nomining, Que.; June, 1904, to July, 1905, transit man, Construction Department, Residency 2, Toronto - Sudbury Branch, C.P.R.; July to Aug., 1905, transit man on location, C.P.R., Ingersoll, Ont.; Aug. to Oct., 1905, transit man, on bridge surveys, C.P.R., Coldwater, Ont.; Oct., 1905, to Jan., 1906, transit man, on bridge surveys, C.P.R., Parry Sound, Ont.; Jan. to May, 1906, transit man on location, C.P.R., Parry Sound, Ont.; May, 1906, to Jan., 1908, Resident Engineer on Construction, C.P.R., Point au Baril, Ont.; Jan. to Oct., 1908, Resident Engineer on Construction, C.P.R., Muskoka, Ont.; Oct., 1908, to Nov., 1909, transit man on maintenance, C.P.R., North Bay, Ont.; Nov., 1909, to Oct., 1911, Resident Engineer, C.P.R., Sudbury, Ont.; Oct., 1911, to Sept., 1913, Resident Engineer, C.P.R., Farnham, Que.; Sept., 1913, to Nov. 20, 1915, Resident Engineer, Intercolonial Ry., New Glasgow, N.S.; Nov. 20, 1915, to June 15, 1917, Division Engineer, Canadian Government Railways, Moncton, N.B. From June 15, 1917, Engineer, Maintenance of Way and Superstructures, Delaware and Hudson Rd., Albany, N.Y.

Henry Russel, Vice President and General Counsel, Michigan Central Rd. Co., died at New York, Feb. 25, of pneumonia, just prior to embarking for Europe to bring back the body of his son, Lieut. W. M. Russel, who was killed in an aeroplane fight with the enemy in France in Aug., 1918. He was born at Detroit, Mich., and entered railway service in 1877 as attorney, Michigan Central Rd.

John Vass, who has been appointed Locomotive Inspector, lines in U.S., west of Detroit, and St. Clair Rivers, G.T.R., Milwaukee Jct., Wis., was born at Braidwood, Scot., and went to the U.S. in 1888, and was, to 1894, locomotive fireman, Wabash Rd., Chicago, Ill.; 1894 to 1895, locomotive fireman, G.T.R., Battle Creek, Mich.; 1895 to 1903, locomotive man, G.T.R., Battle Creek, Mich.; 1903 to June, 1918, Road Foreman of Locomotives, Nichols, Mich.; June, to Oct., 1918, Assistant Master Mechanic, Ont.; Oct., 1918 to Jan., 1920, Assistant to Superintendent of Motive Power, Ontario Lines, G.T.R., Allandale, Ont.

J. D. Wells, who died at Montreal, Feb. 20, aged 83, was interested in the Central Ry. of Canada project, and was Secretary of the company from 1903.

H. E. Whittenberger, who has been appointed General Manager, G.T.R. lines in the U.S., west of Detroit and St. Clair Rivers, Detroit, Mich., was born at Peru, Ind., Nov. 9, 1869, and entered transportation service, in 1885, since when he has been, 1885 to Feb., 1897, in various positions, Wabash Rd.; Feb., 1897 to May, 1902, Trainmaster, Middle Division, G.T.R.; May, 1902 to Sept., 1904, Superintendent, Denver & Rio Grande Ry.; Sept., 1904 to Jan., 1906, Superintendent, Cincinnati, Hamilton & Dayton Rd., Indianapolis, Ind.; Jan., 1906 to Sept. 30, 1907, Superintendent, Kansas City & Southern Rd.; Sept. 30, 1907 to Oct. 17, 1912, Superintendent, Eastern Division, G.T.R., Montreal; Oct. 17, 1912 to Jan. 14, 1913, Superintendent, Middle Division, G.T.R., Toronto; Jan. 14, 1913 to May 1, 1918, General Superintendent, Ontario Lines; G.T.R., Toronto; May 1, 1918 to May 1, 1919, General Manager, Grand Trunk Western Lines Rd. (U.S. R.A.), Detroit, Mich.; May 1, 1919 to March 1, 1920, Federal Manager, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich.

# The Taking Over of Grand Trunk Railway System by Dominion Government.

The G.T.R. shareholders met in London, Eng., Feb. 19, to consider, and, if thought advisable, approve of the agreement made between the Dominion Government and the directors for the taking over by the government of the G.T.R. property. The terms of the agreement were discussed fully in the Dominion Parliament when the act was before it in Oct., 1919, and a summary was given in Canadian Railway and Marine World, for Nov., 1919, pg. 593.

Sir Alfred Smithers, Chairman of the board, having explained the agreement and the circumstances leading up to its being adopted is reported to have stated to the meeting that the G.T.R. had been forced by the government to carry on under impossible conditions, and he felt that they were being held up. He had received figures showing that the profits were being swallowed up in increased wages, without the company being granted power to charge increased rates, thus meaning a loss to shareholders of at least $1,250,000 to $1,500,000 in each of the last three years. In regard to the G.T.P.R., he felt that the G.T.R. was entitled to be shown the same consideration as the Canadian Northern Ry. He continued: "Under the agreement if the maximum amount is awarded it will still leave the preference and ordinary shareholders compelled to make a sacrifice. It becomes more apparent when you contrast it with the treatment given to the Canadian Northern. I have received letters suggesting that we should break off all negotiations and let the government do its worst. I am sure the writers do not realize what that means. To enter on an unknown sea of litigation with the government would carry us no one knows where." In concluding he said: "We have fought hard for nearly two years, and now we earnestly and unhesitatingly ask you to accept the agreement."

There was considerable discussion on the agreement, the most outspoken criticism being offered by Rev. L. Dawson, a former resident of British Columbia, who expressed the opinion that the chief opposition directed against the company was because it was a British owned and managed concern. He is reported to have said: "Speaking quite frankly, you are dealing with a Canadian Government, which has no morals. I have had to fight the government there myself over local matters. If we had had a real Canadian board, who really understood conditions, the men who were on the floor of the house and in the lobbies, and who could say to the government like the C.P.R. say: 'If you do that mind what you are about because an election will come,' then we should be better. I know it is not a nice way to conduct a country, but unfortunately that is the way things are done there. I am sorry to say it. I have been a Canadian citizen and like the country. I believe this will lead British investors to send no more money to Canada."

The agreement was approved by the shareholders present with about a dozen dissentients. At a subsequent meeting of these dissentients a resolution protesting against the terms of sale was passed.

### Arbitration Proceedings.

The act passed by the Dominion Parliament in 1919 provides for arbitration as follows:—"The value, if any, of the first, second and third preference stocks and the common or ordinary stock of the Grand Trunk now issued and outstanding to the face values above mentioned (hereinafter together called the "preference and common stock") shall be determined by a board of three arbitrators, one to be appointed by the government, one by the Grand Trunk, and the third by the two so appointed, or, failing agreement, by judges to be designated in the said agreement. New guaranteed stock, to an amount not exceeding the value, if any, so determined, carrying a dividend as hereinbefore authorized, shall be distributed among the holders of the preference and common stock, upon the transfer to or vesting in the government of such stock in proportions which shall be determined by the arbitrators."

The Dominion Government's counsel for the arbitration will be W. N. Tilley, K.C., Toronto; Pearce Butler, of the Minnesota Bar; H. A. Lovett, K.C., Montreal; Hector MacInnes, K.C., Halifax, NS., and E. E. Fairweather, Solicitor, Railway Department, Ottawa. The G.T.R. will, it is said, be represented by W. H Biggar, K.C., Vice President and General Counsel; F. H. Phippen, K.C., Toronto; A. W. Atwater, KC., and Eugene Lafleur, K.C., Montreal.

### G.T.R. Board of Management.

The act provides that as soon as the agreement has been ratified by a majority of the holders of the stocks enumerated in the preamble, "a committee of management shall be formed, consisting of five persons, two to be appointed by the Grand Trunk, two by the government, and the fifth by the four so appointed, to ensure the operation of the Grand Trunk System (in so far as it is possible so to do) in harmony with the Canadian National Rys., the two systems being treated in the public interest as nearly as possible as one system. The committee shall continue to act until the preference and common stocks are transferred to or vested in the government, when it shall be discharged." The agreement provides for the entrusting to the said committee of management by the Minister of Railways and Canals as receiver of the G.T.P.R. system, on terms to be approved by the governor in council, of the exercise of such of his powers as receiver as the Governor in council may deem requisite in order that the operation and management of the said G.T.P.R. system may be conducted in harmony with the operation of other railways and properties under the control of the said committee.

Canadian Railway and Marine World is of the opinion that the government will appoint as its two members of the committee of management, C. A. Hayes, Vice President in Charge of Traffic, and S. J. Hungerford, Assistant Vice President, both of the Canadian National Rys. Press reports say that the G.T.R. will select its two representative from among W. D. Robb, Vice President in Charge of Operation and Maintenance, G.T.R., W. P. Hinton, Vice President and General Manager, G.T.P.R., and J. E. Dalrymple, Vice President in Charge of Traffic, G.T.R. It is also stated that Howard G. Kelley, President, G.T.R., and G.T.P.R., is likely to be chairman of the committee.

## Canadian National Railways Earnings.

| | 1919 | 1918 |
|---|---|---|
| January | $ 6,744,018 | $ 4,696,567 |
| February | 6,000,342 | 4,421,504 |
| March | 6,827,491 | 5,710,660 |
| April | 6,909,632 | 7,165,890 |
| May | 7,518,244 | 6,580,745 |
| June | 6,009,585 | 6,868,864 |
| July | 7,657,402 | 5,733,299 |
| August | 8,274,882 | 8,255,942 |
| September | 8,627,268 | 7,058,381 |
| October | 9,389,795 | 8,480,468 |
| November | 8,739,457 | 7,836,384 |
| December | 8,828,482 | 7,289,969 |
| | $91,625,593 | $80,098,633 |

| | 1920 | 1919 |
|---|---|---|
| January | $ 7,726,562 | $ 6,787,517 |

Earnings for 3 weeks ended Feb. 21, $4,771,428, against $4,687,011 for same period, 1919.

### Canadian Northern Ry. Earnings.

| | 1919 | 1918 |
|---|---|---|
| January | $ 4,026,000 | $ 2,715,300 |
| February | 3,363,800 | 2,691,000 |
| March | 3,554,350 | 3,436,300 |
| April | 3,878,149 | 3,958,100 |
| May | 4,337,750 | 3,762,000 |
| June | 3,131,000 | 4,031,100 |
| July | 4,347,300 | 3,739,400 |
| August | 4,901,150 | 3,933,300 |
| September | 5,260,500 | 4,050,900 |
| October | 5,799,400 | 5,175,000 |
| November | 5,393,000 | 4,679,500 |
| December | 5,263,400 | 5,043,300 |
| | $53,255,799 | $47,215,200 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan... | $13,914,569 | $13,328,628 | $585,941 | *$967,571 |
| | $13,914,569 | $13,328,628 | $585,941 | *$967,571 |
| Incr. | $ 886,241 | $ 1,853,812 | ..... | ..... |
| Dec. | ..... | ..... | $967,571 | ..... |

Approximate earnings for 3 weeks ended Feb. 21, $9,736,000, against $8,191,000 for same period, 1919.

*Decrease.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1919, compared with those of 1918:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $ 4,402,229 | $ 5,118,234 | $† 716,005 | $* 81,794 |
| Feb. | 4,088,028 | 4,397,953 | 309,952 | 660,229 |
| Mar. | 5,513,593 | 4,673,298 | 840,295 | 762,766 |
| Apr. | 5,357,537 | 4,601,550 | 755,987 | 92,889 |
| May | 5,272,060 | 4,603,411 | 668,649 | *36,495 |
| June | 4,947,795 | 4,644,659 | 303,136 | *707,067 |
| July | 6,021,746 | 4,886,147 | 1,135,599 | *35,347 |
| Aug. | 6,719,921 | 5,043,662 | 1,676,259 | *101,890 |
| Sept. | 7,004,277 | 5,611,125 | 1,393,152 | 164,047 |
| Oct. | 7,136,376 | 5,764,044 | 1,372,331 | 189,280 |
| Nov. | 6,092,603 | 5,589,730 | 502,873 | *398,214 |
| | $62,556,165 | $54,933,813 | $7,622,352 | $508,404 |

†Deficit. *Decrease.

Approximate earnings for Jan., 1920, $5,054,034, and for 3 weeks ended Feb. 21, $3,327,386, against $4,402,229, and $2,827,558, for same periods, 1919, respectively.

**London and Lake Erie Ry. Liquidation**—We are advised that out of the proceeds of sales of rails, and other material and equipment, from this dismantled line, the company has been able to pay off about 30% of its outstanding bonds.

# Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District—A press report states that the appropriations for betterments on this district during this year include the laying of 80 miles of new rails between St. John, N.B., and Megantic, Que., the rails taken up to be relaid on branch lines in the district; 50 miles of track to be reballasted; about 4 miles of spruce hedges to be planted along sections where the snow drifts interfere with operation. The grain conveyor serving no. 2 berth at Sand Point, St. John, will be rebuilt and so placed that ships may be loaded at all tides; the trackage at Fairville yard is to be enlarged to accommodate the increased business. A 2 story frame station is to be built at Westfield; an improved station is to be built at Westfield; an improved station is to be built at Fredericton, the present site being utilized; a 100,000 gal. steel water tank is to be built at Brownville Jct., and 4 section foremen's houses are to be built at different points on the line in Maine.

St. John Cold Storage Plant—A press report states that additional property has been acquired adjoining the company's cold storage plant on Main St., St. John, N.B., and that it is probable the plant may be added to.

St. John, N.B., Bridge—A press report states that provision has been made in the appropriations for this year for the putting in of the substructure for a new bridge across the St. John River at the reversible falls at St. John, N.B., and that the contract for the superstructure, to be erected in 1921, will be let. The bridge will have a steel span of 413 ft., supported on concrete abutments, and will be located between the two bridges which now span the river at that point.

St. Maurice River Bridge—The Board of Railway Commissioners has authorized the rebuilding of the bridge across the St. Maurice River, at mile 1.8, Cap de la Magdeleine Subdivision, Que.

Ontario District—A press report states that permission has been given for the closing of King St. and Bay St., Kingston, Ont., running to the harbor, in order so that the C.P.R. may carry out its plans for a new freight yard. The plans are said to include the erection of a freight shed and locomotive house.

Plans for the season's betterments on the London Division are said to include a station at Ayr, to cost $23,000; a station at Puslinch; the remodelling of Galt station at a cost of $16,000, and considerable improvements at Chatham at a cost of $45,000.

Fort William Locomotive House—Tenders will be received to Mar. 5 for building a 4-stall addition to the locomotive house at Fort William, Ont.

Western Lines Contracts—We are officially advised that contracts have been let as follows:

To Canadian Construction Co., Winnipeg, for grading 20 miles of the Rosetown south branch line; in addition to 25 miles awarded in 1919 and not yet completed.

To Canadian Construction Co. for grading 25 miles of the Empress-Milden branch line; in addition to 34 miles awarded to Stewart and Welch in 1919 and not yet completed.

To A. G. Creelman Co. of Calgary, Alta., for building 18 section houses on the Manitoba District; and for building stations at Lydiatt, Harrowby and Schwitzer, Man., and to H. G. McDonald, Edmonton, Alta., for completion of 5th and 6th floors of the office building at Edmonton.

Western Branch Line Extensions—The Dominion Parliament is being asked to authorize the building of the following additional branch lines: From near Cory, Tp. 36, Ranges 5 or 6, west 3rd meridian, northwesterly to Birch Lake, Tps. 51 and 52, Ranges 15 and 16, west 3rd meridian, Sask.; from near Asquith, Tp. 36, Ranges 9 or 10, west 3rd meridian, northwesterly to near Cloan Tp. 42, Range 20, west 3rd meridian, Sask., from near Rosetown, Tp. 30, Range 15, west 3rd Meridian, to near Keppel, Tp. 35, Ranges 12 or 13, west 3rd meridian, Sask.; from near Kelfield, Tp. 34, Range 19, west 3rd meridian, easterly to Tps. 32 or 33, Range 14, west 3rd meridian, Sask., from near Amulet, Tp. 8, Ranges 20 or 21, west 2nd Meridian to Dunkirk, Tp. 12, Range 28, west 2nd meridian, Sask., from near Kipp, Tp. 9, Range 22, west 4th meridian easterly and northeasterly to near Retlaw, Tp. 13, Range 17, west 4th meridian, Alberta. Power is asked to issue bonds for $40,000 a mile for the construction of these lines.

Manitoba District Betterments—Tenders will be received to Mar. 5 for building concrete culverts and bridge abutments at various points in the district, and for the following works: Mess room and locomotive foreman's office, Winnipeg; extension of air brake shop at Weston; and a car cleaners' building at Winnipeg.

Saskatchewan District—Tenders will be received to Mar. 5, for the following works in the Saskatchewan District: Two bridge abutments at Weyburn; 4 bridge abutments on Shaunavon Subdivision; 2 bridge abutments on Govanlock Subdivision; 4 concrete arch culverts on Colonsay Subdivision; 6 concrete arch culverts on Sutherland Subdivision; 12 concrete arch culverts on Wilkie and Hardisty Subdivisions.

A press report states that the betterments to be done during this year on the Regina Division will include extensive improvements to Regina station, the building of a coal dock, a 4-stall addition to the locomotive house, and other improvements to the tracks in the yards. The total expenditure proposed at Regina is said to be $200,000.

The Board of Railway Commissioners has approved route map showing general location of a branch northerly from Rosemary, Sask., mile 0 to 25.03.

Consul to Assiniboia Loop Line—Replying to a general question as to railway construction in Saskatchewan in the Legislature, Feb. 2, Hon. Mr. Dunning gave the following information relative to this line: During 1919 there were graded 12.3 miles, and the Saskatchewan Railways Department had been advised that it is the company's intention to complete, as early as possible this year, the balance of the grading of the 25 miles for which contract was let last year, but it is not in a position to state whether any work in addition to the completion of this mileage may be undertaken this year.

British Columbia District—A press report states that a permit has been issued by Vancouver City Council for the erection of a cold storage plant at the foot of Nelson St., to cost $14,500. The permit is in the name of the Mainland Cold Storage Co., but the report says the plant is to be used by the C.P.R. dining car department.

A press report states that a contract has been let to the Pacific Construction Co., Vancouver, for the dredging and filling for the construction of the new dock to be built between piers A and D, the work to be completed in 8 months.

## Quebec Subsidies for Railway Construction.

The Quebec Legislature has passed an act authorizing the granting of subsidies in aid of the construction of the railways on conditions to be fixed by the government.

Montreal, Joliette and Transcontinental Junction Ry. Co.—A subsidy of 4,000 acres of land a mile, not convertible into money, by the government, for a railway from Mercier-Maisonneuve Ward, Montreal, northerly across the Hochelaga, Assomption, and Montcalm Counties, to Joliette, thence northwesterly to St. Michel-des-Saints, and thence to Parent on the National Transcontinental Ry., 60 miles. Unless the company completes 25 miles by Dec. 1, this subsidy will be cancelled.

Quebec, Montreal and Southern Ry.—A subsidy of 2,000 acres of land a mile, not convertible into money by the government, in lieu of the subsidy voted in 1912, for an extension of its line from St. Philomen de Fortierville in the direction of Levis, 52 1-3 miles.

Malbaie to Ha Ha Bay—A subsidy of 4,000 acres of land a mile, not convertible into money by the government, to a company building a railway from near Malbaie to Ha Ha Bay, 75 miles. The Roberval-Saguenay has a charter to build this line.

Chicoutimi to St. Felicien—A subsidy of 4,000 acres of land a mile, not convertible into money by the government, to a company building a railway from near Chicoutimi, on the Quebec and Lake St. John Ry., to St. Felicien, to the west of Lake St. John, running through the region situated east and north of the lake, as well as all branch lines authorized, the length of main line and branches being 120 miles.

Quebec Central Ry.—A subsidy of 2,000 acres of land a mile, not convertible into money by the government, for the extension of its line from St. Lucie de Beauregard (Lac Frontiere) to St. Pamphile, 25 miles.

Canadian Pacific Ry.—A subsidy of $1,600 a mile, in lieu of the subsidy voted in 1919, in aid of the construction of a line from the present terminus of the company's branch line at Timiskaming or Kipawa, northeasterly to the Riviere des Quinze, by way of Ville Marie, 66 miles. In the event of the Dominion Government not granting a subsidy for the construction of this line, the act provides that a further sum of $6,400 a mile shall be paid by the province.

J. G. Scott, ex-General Manager, Great Northern Ry. of Canada, and Quebec & Lake St. John Ry., and Chairman of the Quebec Board of Trade's transportation committee, writes Canadian Railway and Marine World from Quebec:—"I congratulate you upon your last issue. It was full of information."

# Canadian National Railways Construction, Betterments, Etc.

Betterments, Extensions, Etc. — The President and several other chief executive officers have been devoting considerable time recently to the preparation of estimates for betterments, new construction, etc., to be done this year, these have been submitted to the directors, and subsequently to the Minister of Railways and other members of the government. The betterments will necessarily be extensive, and will require the expenditure of many millions, but construction of new railway lines is likely to be limited, owing to the necessity of keeping the public expenditures down as much as possible.

Springhill Jct., N.S.—A recent press report states that Springhill Jct., N.S., will probably be made a divisional point, eliminating Oxford Jct., and lessening the work at present divided between a number of other points. A second track is under construction between Springhill Jct., and Athol, and the report, after referring to a good deal of survey work, which has been going on during the winter, suggests that it all points to some rearrangement of lines, which would give a direct line along the north shore, shortening the distance between Sydney and Moncton, and bringing eastern Nova Scotia several hours nearer to Upper Canada.

The Guysboro, N.S., Municipal Council is reported to have endorsed a route outlined for a branch line to open up the Guysboro district. The route is said to be from Sunny Brae along the Salmon River Valley to Guysboro Town, then passing to the north shore of Chebucto Bay to the Strait of Canso.

Alfred Center Station—The Board of Railway Commissioners have approved of location and plant of a station for Alfred Center, Que., mileage 70.2, Grenville Subdivision.

Brockville-Westport Subdivision — A press report states that municipalities along the old Brockville, Westport and Northwestern Ry., from Brockville to Westport, Ont., 44 miles, have been asked to request the Hydro Electric Power Commission of Ontario to report on the cost of electrifying the section.

Orient Bay Bridge—The Board of Railway Commissioners has authorized the rebuilding of the bridge at Orient Bay, mile 44.1 from Jellicoe, Ont., Thunder Bay District.

Construction in Saskatchewan — The Saskatchewan Legislature was informed by Hon. Mr. Dunning, Feb. 2, that during 1919 the C.N.R. graded 146.77 miles of new lines and extensions in the province, and laid 63.18 miles of new track. The government had been advised that survey parties were working on the territory west of Bengough during the past season, but the reports thereon had not been submitted. It is the company's intention to take the matter of the construction of a line westerly from Bengough into consideration when the 1920 construction programme is being decided upon, and estimates are prepared to submit to the Dominion Railways Department for approval.

The Saskatchewan Legislature has passed an act extending for a year the time for building lines proposed to be built by the Canadian Northern Ry., and the Canadian Northern Saskatchewan Ry., and in respect of which bonds were issued and sold within the province's guarantee as to principal and interest. This act will release for construction purposes the unexpended balances now held by the Saskatchewan Government in respect of several partially completed branch lines.

Lampman-Peebles Line—The Board of Railway Commissioners has authorized the crossing of 13 highways by this branch line now under construction in Saskatchewan.

Macrorie Westerly Branch—The Board of Railway Commissioners has authorized the temporary opening for traffic of the extension of the Macrorie Westerly line, from Glidden, mile 105 to Edam mile 115, Sask., speed of trains to be limited to 19 miles an hour.

Gravelbourg-Swift Current Line—A recent press report stated that rails had been laid into Hodgeville.

Acadia Valley Branch—The Board of Railway Commissioners has authorized the crossing of the road between Sections 29 and 20, Tp. 26, Range 28, west 3rd meridian, Sask., by this branch now under construction.

Hanna-Medicine Hat Line—The Board of Railway Commissioners has authorized the C.N.R. to build across and divert the road between Sec. 36, Tp. 28, Range 20, and Sec. 31, Tp. 28, Range 19, west 4th meridian, Alta.

Munson - Wayne Second Track—The Board of Railway Commissioners has authorized the carrying of the second track between Munson and Wayne, Alta., across 12 highways.

Kamloops - Kelowna - Vernon - Lumby Line—The Board of Railway Commissioners has authorized the diversion and crossing of roads at miles 63.35, 64.54, 64.72, 65.37 and 69.03, on this line now under construction in British Columbia. The board has rescinded a former order approving location of the line between miles 66 and 82.22.

A report on railway construction laid before the British Columbia Legislature, recently, showed that about 62% of the grading on the line had been completed.

Vancouver and Victoria Terminals—The annual report of the British Columbia Railways Department, laid before the legislature recently, shows, according to a press report, that during the 11 months ended Nov. 30, 1919, the government paid out of funds in its bonds $340,740.66 on account of terminal construction. Work on the Vancouver terminals is in progress, the present plans providing for yardage, the erection of a 5-stall locomotive house, a machine shop, coaling station, turntable, temporary station and freight shed. There had been expended up to Nov. 30, 1919, on account of these works, $34,000.

Vancouver Island Lines—The report of the B.C. Minister of Railways for the year ended Nov. 30, 1919, laid before the legislature recently, states, according to a press report, that 52.5 miles of track has been laid on the Victoria-Alberni line; that a bridge is being erected over the Kokesila River, and that track laying and other construction work will be gone on with on this line during the ensuing construction season. (Feb., pg. 75).

## United States Railway Notes.

It was stated in Washington, Feb. 7, that, according to a forecast of operating results for the year, only 2¾% was earned by U.S. railways on their total investment of $19,000,000,000 in 1919, the second year of government operation. The figures show while railway revenues passed the $5,000,000,000 mark for the first time in the country's history, the high cost of labor and material resulted in net operating income of only $515,000,000.

Acting Secretary Crowell, at the Railroad Administration's request, signed an order at Washington, Jan. 30, commandeering 72,500 tons of steel rails, in addition to the 42,500 tons contracted for previously by the government. The order is to be filled by various steel rail mills, on the basis of their productive capacity, and it is stated that the price will be decided later.

The Director, Division of Purchases, U.S. Railroad Administration, reports that more than a billion dollars were spent through that division during the first 10 months of 1919 in obtaining materials for railways under government control. The report lists value of material bought for railways as follows: Fuel, $403,815,632; rails, $60,764,970; cross ties, $108,232,363; other material, $568,119,009.

According to official calculation at Washington the operation of the railways, Pullman lines, express companies and waterways, unified, under federal control, has cost the U.S. approximately $700,000,000 since they were taken over two years ago. Figures made public by the administration revealed a net loss of $594,200,000 from railway operation alone in the two year period. Statistics gathered from official sources, as to operating costs of Pullman lines, and waterways, and express companies, while operated by government show the addition of $100,000,000 to the transportation costs.

## Non-Prepayment of Freight to the United States.

The following circular was issued by Canadian railways, recently: "Effective Mar. 1, on account of the existing adverse rate of exchange, and in order to avoid discrimination as between shippers, agents must not accept prepayment of charges from shippers or connecting railways on freight traffic from Canada to the United States, except on such classes of traffic as the classification or commodity tariff applicable, requires prepayment."

The Montreal Board of Trade's Transportation Bureau has protested to the Board of Railway Commissioners, against the regulation being put in operation on the ground that it is illegal, and that it should not be enforced until a hearing shall have been given to interested shippers. The matter is expected to be brought before the Board of Railway Commissioners at Ottawa, Mar. 2.

The Port Arthur, Ont., Public Utilities Commission, for this year, which operates the Port Arthur Civic Ry., and other city utilities, is composed as follows: M. C. Campbell, Chairman; E. J. Blaquier, W. Marrigan, R. Tourtellot, and I. L. Mathews, Mayor. M. M. Inglis is Manager.

# Grand Trunk Railway Construction, Betterments, Etc.

Work Done in 1919—The length of the G.T.R. maintained and operated under corporate control, and exclusive of lines under the United States Railroad Administration, during 1919 was 3,618.05 miles. On lines in Canada, 289 miles of new 85 lb. rail were laid during 1919, of which 121 miles were laid on lines east of Toronto and the balance west of there. Seventy-three miles of 100 lb. rail were laid, where there is very heavy and fast traffic on the main lines. Partly worn 80 lb. rail was laid to replace rail of lighter sections, on the more important branch lines, and 15 miles of partly worn 100 lb. rail were relaid on the St. Thomas Division, joint section between Fort Erie and Welland Jct., Ont. Approximately 250,000 cu. yd. of ballast were put under the track on Ontario Lines, west of Toronto, and about 310 miles on the Eastern Lines, east of Toronto, were lifted, surfaced and dressed with new ballast. During the year 2,287,000 cross ties were renewed, this quantity being about equally divided between the Eastern and Ontario Lines. The company bought and applied 296,000 rail anchors and about 234,000 tie plates for all lines in Canada.

At Gravenhurst, Ont., important work was done in connection with track changes, and in constructing a new brick and wood station, concrete platform, restaurant and freight shed, immediately adjacent to the main street and a short distance from Gull Lake summer resort. A mechanical coal chute has been practically completed at Muskoka Jct., about half a mile south of the new station at Gravenhurst. A coal chute was built and put into operation at Victoriaville, Que.

A shop for fabricating steel bridges was built at East Toronto. The locomotive house at York, near Toronto, which had been closed for a number of years, was repaired, remodelled and reopened.

A new yard was constructed at Port Colborne, Ont., containing 3¼ miles of track, to serve the Canada Cement Co., the Maple Leaf Milling Co., and the Dominion Government elevator. The locomotive house at this point was enlarged to take care of additional locomotives.

One mile of double track was laid through the yard at Welland Jct., Ont., and between that point and Fort Erie the embankment was strengthened by putting in 15,000 cu. yd. of filling.

New 100 lb. rail was laid across the Niagara Falls steel arch, the floor system was strengthened and an entirely new deck put on it.

The building of concrete piers on the Narrows swing bridge at Atherley Jct., Ont., was taken in hand, piling was driven and coffer dams completed and, it is ready for cement work, preparatory to the construction of the draw span.

New ties were framed and placed on 6 spans of the Victoria Jubilee Bridge, and the planking on the roadway of this structure was renewed. A number of bridges were renewed.

A pumphouse, with electric pumps, was built at Richmond, Que. A 60,000 gal. water tank was built at Bowmanville, Ont. A 100,000 gal. water tank and extension to freight shed were built at Madawaska, Ont., were erected, this point being a district terminal for the 31st district between Ottawa and Depot Harbor. At the latter point an office building was erected.

The renewal of the ferry dock at Cobourg was completed. From this point a subsidiary company operates car ferry steamships to Rochester, N.Y.

A number of stations were extended at various points and stations were built at Mitchell, Palgrave, St. Agapit and Mille Roches. A heating system is being installed at Stuart St. station and offices at Hamilton, Ont. The track scales at Midland, Ont., were moved to Tiffin, and new scales were installed at Windsor, Ont., at a cost of about $7,600.

A great number of bridges, buildings, water tanks, etc., were painter, culverts renewed, single and double tool houses constructed, ties renewed on bridges, and numerous concrete crossing signs, whistle posts and section posts were built. In the track department, while it was possible to keep regular sections fairly well manned, there was more or less difficulty in obtaining labor for the extra gangs and it was necessary to pay very high rates for this class of labor. On the Eastern Lines there were from 1,500 to 2,000 men employed during the summer, doing extra work, such as lifting in new ballast, laying rail, applying tie plates and rail anchors, etc. In the bridge and building department there was a considerable shortage of mechanics, especially on lines west of Toronto.

The amount of money spent on maintenance and new works during 1919, greatly exceeded that of former years, partly due to the fact that there was a considerable amount of maintenance which it was absolutely necessary to defer during the war period.

**Montreal Division Bridge Rebuilding**—The Board of Railway Commissioners has authorized the use of the bridges rebuilt recently across Little Trout Creek, mile 94.99, near Kingsey, District 3, Montreal Division, and has authorized the rebuilding of the bridge on Lot 27, s.w. Concession, St. Rogers, in St. Isadore Parish, Que.

**Ottawa Tracks**—The Ottawa Rotary Club discussed recently the G.T.R. cross town tracks in that city, and advocated a petition asking for their removal, or the separation of grades.

**Bridge Rebuilding East of Toronto**—The Board of Railway Commissioners has authorized the rebuilding of the bridge carrying the highway across the company's tracks between Lots 14 and 15, Broken Front Concession, East Whitby Tp., at mile 301.70, Belleville Subdivision, about 1.25 miles west of Oshawa, Ont., and has authorized the use of the bridges built recently at mile 10.30, Lot 10, Range 6, Markham Tp., Ont., at mile 15.88, Lot 21, Range 8, Markham Tp., and bridge 61 on line of Bethune St., Peterborough, Ont.

**Highway Bridge near Georgetown**—The Board of Railway Commissioners has authorized the rebuilding of the bridge carrying the highway over the company's tracks, at mile 29.62, district 15, Stratford Division, near Georgetown, Ont.

**London Division** — A press report states that about $425,000 has been appropriated for betterments on the London Division to be done during this year. The work is reported to include the relaying of 85 miles of track between Paris and London, Ont., with 100 lb. steel rails; the 85 lb. rails at present in use to be relaid on other lines; the building of stations at Clandeboye, and Hawtrey, on the Port Dover branch, and the remodelling of stations. The question of the signal system to be adopted between London and Paris has not yet been announced, but the report states that an electric block system is favored.

The company is, according to a press report, prepared to go ahead with laying out of a reclamation yard at London, Ont., details of which were given in Canadian Railway and Marine World for Dec., 1919. The question of closing Wilson Ave., in connection with the carrying out the work is before the London City Council.

**London and Sarnia Ice Houses**—A press report states that ice houses are being built at London and Sarnia, Ont., to store ice for the company's use, and that the ice is being cut by the company on Lake Simcoe, for the first time in several years. The building under construction in London will, it is stated, have a 1,400 ton capacity. (Jan., pg. 18).

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**Northern Alberta Tourist Route**—A press report states that arrangements are being completed for the carrying of tourists through from Edmonton, Alta., to Fort McPherson. After leaving the railway at Peace River they will be carried by the Peace River Development Corporation (controlled by the Rhondda estate), and the Lamson Hubbard Canadian Co. Beginning May 1, the report says, a regular weekly service will be provided from Peace River to Hudson's Hope, B.C., and Fort Vermilion, whence other river steamboats and smaller craft will be used to carry passengers along Slave River, to Great Slave Lake, and along the Mackenzie River to Fort McPherson. A portage route of 90 miles is contemplated from the Mackenzie River to the Yukon River, which will give a through route to the Pacific, making a scenic tour of unique interest. V. Lloyd-Owen, Vancouver, B.C., represents the Rhondda interests, and J. H. Bryan, is Vice President and General Manager of the Lamson Hubbard Canadian Co.

**The Railway and Steamship Employes** Club has been incorporated under the Quebec Companies Acts with a capital of $20,000 and office at Montreal, to establish a club for the accommodation of members and their friends, and among other purposes, to buy clothing, provisions, and other necessaries to be divided amongst the members on a co-operative basis. The incorporators are: A. Clair, J. P. Picard, W. Shore, W. J. Ryan, L. T. Bourdeau, L. Toussaint, L. McGlynn, and D. Robert, clerks, all of Montreal.

**The Railwaymen's Club** has been registered under the British Columbia Benevolent Societies Act with offices at 1015 Granville St., Vancouver, to promote "social intercourse, mutual helpfulness, mental and moral improvement and rational recreation." The first directors are: G. M. Alexander, F. M. Goodman and P. W. Baumgardner, switchmen.

**The C.P.R. Co.** is applying to the Dominion Parliament for the amendment of its act of 1902, sec. 12, by changing the maximum number of directors from 15 to 16.

# Aerial Transportation Notes.

The London, Ont., Aviation Club is reported to have appointed a committee to find a site near the city for an aerodrome.

A press report states that the Nova Scotia, New Brunswick and Prince Edward Island governments are being asked to guarantee the Eastern Canada Air Lines' bonds.

Major K. E. Clayton-Kennedy, of the Aircraft Manufacturing Co., London, Eng., is reported to have made arrangements for an aircraft service for the Newfoundland seal fishing fleet.

Capt. E. C. Hoy, D.F.C., Vancouver, B.C., is reported to be applying to the Dominion Government, for permission to operate an aerial mail service daily between Vancouver and Victoria.

N. A. Yarrow, of Yarrows Ltd., shipbuilders, etc., Esquimalt, B.C., is reported to have announced that that company is prepared to proceed with the manufacture of aeroplanes as soon as there is a sufficient demand.

A press report states that it has been announced in London, Eng., that new air routes between London, Paris and Brussels, for the operation of freight as well as passenger and mail traffic, will be announced early in the spring.

A Montreal press dispatch states that a group of steamship owners, airship building companies, business, engineering and transport companies, are combining to buy aircraft of all kinds to establish a weekly trans-Atlantic service.

The Second Assistant United States Postmaster General stated, Feb. 9, that a powerful mail plane is being developed to carry mail over the mountains to San Francisco, and that a new British triplane is to be tried between Chicago and Omaha.

The United States Post Office Department on Feb. 9 asked the Senate Post Office Committee for an appropriation of $3,400,000 to establish new aerial mail routes between New York and San Francisco, Pittsburg and Kansas City, Detroit, Toledo and Cleveland, New York, Washington and Atlanta; and St. Paul, Chicago and St. Louis.

Capt. J. W. Hobbs, of the Canadian Air Board, is reported to have advised the establishment of a seaplane base at Vancouver, B.C., with refueling stations at several interior points, in connection with government departmental work. Seaplanes are recommended for use, as natural landings are obtainable throughout the province without any expenditure.

A Washington, U.S., press report states that an air route from Mineola, N.Y., to Nome, Alaska, has been planned by the army air service. The route will cross the Canadian border at Minot, N.D., thence to Hazleton, B.C., where it will turn north between the Coast Range and the Rockies to White Horse, Yukon, and will cross the Yukon-Alaska border at Fort Egbert.

Plans are reported to have been completed for the inauguration of an air service between Winnipeg, Man., and St. Paul, Minn., a press report stating that bookings for air trips between the two cities have been made for April. One of the intermediate stations will be at Grand Forks, Minn. The service will it is said, be operated by the recently incorported Aerial Transport and Taxi Co., Winnipeg.

It was reported from Ottawa, early in February, that numerous applications were being received by the Canadian Air Board, for certificates as private pilots, but at that time, only 10 certificates had been issued. It was stated that all former members of the Royal Air Force are entitled to private pilots' certificates, provided they were physically fit on leaving the force. The board has also received a number of applications for the establishment of aerodromes.

The Eastern Canada Air Lines Co., is the successor of the Prince Edward Island Aerial Transportation Co., which was incorporated by Dominion charter about a year ago. The authorized capital of the new concern is $500,000 and it proposes to establish three routes, viz., from Charlottetown to the Magdalen Islands and Newfoundland; from a New Brunswick point to Boston, New York or Philadelphia, and from a New Brunswick point to Quebec and Montreal. The Air Craft Co. of Montreal, is reported to be interested in the venture. Charlottetown is being asked to take $25,000 of the company's capital stock.

The Civil Service Commission has announced a competition open to all residents of Canada, for the position of aeronautical intelligence officer for the air board at an initial salary of $2,400 a year, which will be increased, on condition of efficient service, by $120 a year, to a maximum of $2,800, and the initial salary will be supplemented by whatever bonus is provided by law. The duties are, to gather and distribute information, relative to aviation, aeronautical signs, aeroplanes production, and all relative subjects, to supervise the preparation and editing of the Aeronautical Year Book, and to assist the Secretary of the Air Board, and perform other related work as required.

The Aero Club of Canada held its first annual meeting in Toronto recently when the following officers were elected: Hon. President, Lieut.-Col. Barker, V.C.; President, Lieut.-Col. A. K. Tylee, O.B.E.; Vice President, Major V. S. Wemp, D.F.C.; Vice President for Ontario, Major A. M. Shook, D.S.O., D.F.C.; Hon. Secretary, A. F. Penton; Hon. Treasurer, Capt. E. A. McKay, D.F.C.; directors, Major M. M. Sissley, A.F.C.; Capt. Joe Clark, D.F.C.; Capt. H. A. Hember, Lieut. M. C. Purvis, J. K. Shook. A resolution was adopted to be presented to Ottawa, urging the necessity of forming a volunteer air force, independent of the military or naval forces of the country, on somewhat similar lines to the Canadian militia.

The Aeronautical Association of Canada, held its first annual dinner in Montreal recently, when the Governor General and Col. O. M. Biggar, Vice President of the Canadian Air Board, were the chief guests. The latter spoke of the work already done by the air board and said that the board had put forward proposals which he believed would be favorably received by airmen, but he did not divulge their nature. He however, intimated that development in the immediate future will be upon the lines of the creation of special air routes by the government in the more isolated areas, to the exclusion of the populated centers, and suggested that if municipalities want to encourage air transportation, they must afford the inducements by providing the necessary landing facilities.

The Civil Service Commission of Canada invited applications recently for the following positions under the air board; the tenure of office to be three years, renewable, at the salaries named: Air Station Superintendent, $3,360; Air Substation Superintendent, $2,940; Air Equipment Officer, $2,400; Air Photographer Inspector, $2,340; Air Wireless Inspector, $2,340; Air Pilot Navigator, $2,460; Airship Pilot, $2,460; Air Pilot, $1,920; Air Foreman Mechanic, $1,500; Air Photographer, $1,500; Air Wireless operator, $1,500; Air Engineer fitter, $1,080; air rigger, $1,080; fabric worker, $1,080; hydrogen plan operator, $1,080. In addition to salary the Air Board will make provision for insurance against injury or death due to accident while on or about aircraft. Preference will be given to persons who have been on active service overseas.

Regulations controlling aerial navigation issued in Ottawa provide that aircraft must be registered under conditions somewhat similar to those governing marine craft, all their operations from taking off to alighting being under strict regulation. "Air harbors," "seaplane stations," "aerodromes," "customs air harbors," "air worthiness," are new terms which will come into common use. The qualifications of pilots and engineers are set forth at length. All machines must bear, on top, bottom and sides, letters indicating nationality, for the information of the customs. The painting of buildings, raising of lights, or marking of ground in a way which might lead aircraft to alight by mistake are forbidden. Water craft must keep clear of portions of harbors set aside for the lighting of aircraft, and arrivals and departures of aircraft will be chronicled just as marine craft are now. Machines must carry white lights fore and aft, and green and red lights on right and left, respectively. Stations to report the arrival of aircraft will be established, and mail aircraft must be specially authorized.

Major Lincoln, in reporting to the Canadian Air Board as to the possibilities of aircraft in Saskatchewan, is reported to have made the following recommendations: The establishment of air service stations in the north part of the province; the establishment of an air service training school in Regina; the establishment of air patrols to cover the forest areas in the northern sections of the province; the possibilities of the use of aircraft for commercial purposes, such as bringing down small shipments of valuable furs from the north country; aeroplanes available for police service in the north country as well as on the border line between Saskatchewan and the United States; aeroplanes for use in photographing the unsurveyed areas of the north country to assist in mapping out the districts which are available for ranching, etc., the use of aeroplanes on certain mail services in districts where the present mail service is very poor, owing to lack of railway facilities. Major Lincoln is reported to have made similar recommendations for the development of an aeroplane service in Alberta.

# Railway Rolling Stock Orders and Deliveries.

The C.P.R. has ordered 18 steel sleeping cars from the National Steel Car Corporation.

The Jamaica Government Ry. has has ordered 60 standard cars from National Steel Car Corporation.

The Bengal-Nagpur Ry. (India) has ordered 80 large capacity ore cars from National Steel Car Corporation.

The G.T.R. has received 2 steel frame stock cars, 60,000 lb. capacity, from Canadian Car and Foundry Co.

The Canadian Car & Foundry Co. is stated in a Montreal press report to have some $20,000,000 of orders booked.

The Grand Trunk Pacific Ry., will, it is reported, be in the market in the near future for locomotives and freight cars.

The C.P.R., between Jan. 14, and Feb. 12, ordered 3 vans from its Angus shops, Montreal, and bought 67 automobile cars.

The C.P.R., between Jan. 14, and Feb. 12, received 2 vans, 1 single track steel snow plough, and 2 locomotives from its Angus shops, Montreal.

The Minneapolis, St. Paul and Sault Ste. Marie Ry. is reported to be in the market for 5 locomotives and 1,000 flat cars, 40 tons capacity.

The C.P.R. is stated in a Montreal press report to have ordered some $5,000,000 worth of rolling stock, principally freight cars, from Canadian Car & Foundry Co.

The Canadian Locomotive Co. has delivered 3 12 wheel (4-8-0) locomotives to the Jamaica Government Rys. Details of these were given in our February issue, pg. 69.

The Nova Scotia Steel and Coal Co. is having 2 stock pile cars, 10 tons capacity, built by the Eastern Car Co. They will have hopper bottoms, side doors entered from end to trip levers, four 12 in. wheels, one fixed bearing and one floating bearing.

The G.T.R. is reported to be about to build 25 six-wheel (0-6-0) switching locomotives at its Point St. Charles shops, Montreal, and is also reported to be in the market for 3,000 automobile box cars, 1,000 flat cars, 50 baggage and express cars, 15 express refrigerator cars and 10 express horse cars.

The Canadian Car and Foundry Co., shipped recently, 3 sleeping cars to Canadian National Rys., 92 repaired box cars, and 147 repaired hopper cars to G.T.R. The company has on hand orders for 35 steel frames for sleeping cars, for C.P.R.; 25 air dump cars, 20 yds. capacity, for Great Winnipeg Water District; and 15 frames and bogies, and 2 extra bogies, for Dorado Extension Ry.

The British American Nickel Corporation is having built, 3 furnace charging cars, 35 tons capacity, by Eastern Car Co. They are a special type of car, with 4 hopper compartment doors on one side of car only, operated by shaft levers, and fitted with Canadian Fairbanks-Morse Co.'s scales, with scale box indicating weight of car contents. The trucks will be of the special arch bar type, with 8 wheels, modified M.C.B. axles and journal boxes, special draft gear rigging and couplers. The inside dimensions will be: length, 31 ft. 4½ in., width 5 ft. 7½ in.

Canadian National Rys., as announced in our last issue, has ordered 80 cabooses from Canadian Car & Foundry Co., which will be built at Amherst, N.S. They will have wooden underframe, reinforced at draft rigging with 7 in. channel 20.1 lb., and wooden superstructures. Following are the chief details:

| | |
|---|---|
| Length over body end sills | 30 ft. |
| Length over platform end sills | 35 ft. 2 in. |
| Width over side sills | 9 ft. 1½ in. |
| Height, top of rail to bottom of side plate | 6 ft. 6 in. |
| Center to center of bolster | 20 ft. 4 in. |
| Draft gear | Miner tandem |
| Air brakes | Westinghouse |

The Pacific Great Eastern Ry. has ordered 3 Mikado (2-8-2) locomotives from Canadian Locomotive Co. Following are the chief details:—

| | |
|---|---|
| Fuel used | Oil |
| Weight of drivers | 162,000 lb. |
| Weight of engine, total | 212,000 lb. |
| Wheel base of engine, rigid | 13 ft. 6 in. |
| Wheel base of engine, total | 30 ft. 9 in. |
| Wheel base of engine and tender | 61 ft. 3 in. |
| Heating surface, fire box and arch tubes | 179 sq. ft. |
| Heating surface, tubes | 2,244 sq. ft. |
| Heating surface, total | 2,423 sq. ft. |
| Driving wheels, diar. | 51 in. |
| Driving wheels, centers | Cast steel |
| Driving journals, diar. and length | 9½ and 9 x 12 |
| Cylinders, diar. and stroke | 22 x 28 in. |
| Boiler, type | Extended wagon top, radial stayed |
| Boiler, pressure | 190 lb. |
| Tubes, number and diar. | 24—5⅜; 189—2 in. |
| Tubes, length | 17 ft. |
| Injectors | Nathan No. 9 |
| Safety valves | 3 in. Lunkenheimer |
| Air brakes | Westinghouse American |
| Packing | King, metallic |
| Superheater | Locomotive Superheater Co., type A |
| Frame cradle | Commonwealth |
| Trailing truck | Delta |
| Valve motion | Walschaert |
| Headlight | Electric |
| Weight of tender loaded | 153,500 lbs. |
| Tank capacity, oil | 2,700 imp. galls. |
| Tank capacity, water | 6,000 imp. galls. |
| Tank, type | Water bottom |
| Tank, type | Equalized |
| Wheel, diar. | 33 in. |
| Wheel type | Steel tired |
| Journal diar. and length | 5½ x 10 in. |
| Brakebeam | Safety simplex |

Imperial Oil Ltd., as announced in a previous issue, is having built by Canadian Car and Foundry Co., 100 general tank cars, 8000 gall. capacity, without heaters; 125 tank cars for asphalt, 8,000 galls. capacity with heaters; 50 general service tank cars, 6,500 galls. capacity, with heaters, and 25 three compartment general service tank cars with heaters. The underframes of all the cars will be the same, the center sills consisting of two 15 in. channels, 35 lb. with ½ in. top and bottom cover plates, side sills of 9 in. channels, 15 lbs., extending from under sill to bolster, on all the cars except the three compartment cars, on which the sills will extend the full length between the end sills, cast steel tank saddles at bolsters and 40 ton capacity trucks. The tanks will all be 76 in. inside diar. and in accordance with M.C.B., specifications for class 3 tanks. The cars will be equipped with Westinghouse 10 x 12 air brakes, Cardwell friction, draft gear, and Sharon 6 x 8 in. type D couplers. Following are the chief details:

**8,000 Gallon Cars.**

| | |
|---|---|
| Length over coupler knuckle | 40 ft. 8 in. |
| Length over end sills | 37 ft. 10 in. |
| Truck centers | 27 ft. 10 in. |
| Truck wheel base | 5 ft. 6 in. |

**6,500 Gallon Cars.**

| | |
|---|---|
| Length over coupler knuckle | 34 ft. 1½ in. |
| Length over end sill | 31 ft. 3½ in. |
| Truck center | 21 ft. 3½ in. |
| Truck wheel base | 5 ft. 6 in. |

**Three Compartment Cars.**

| | |
|---|---|
| Length over coupler knuckle | 34 ft. 5 in. |
| Length over end sills | 31 ft. 7 in. |
| Truck center | 21 ft. 7 in. |
| Truck wheel base | 5 ft. 6 in. |

**Canadian National Railways Orders.**

The Dominion Government passed an order in council early in February authorizing the expenditure of $20,000,000 for rolling stock, for Canadian National Rys., and this has since been supplemented, or will be, by a further $5,000,000. Canadian Railway and Marine World for February gave particulars of orders placed for cabooses, and of tenders invited for other rolling stock by Canadian National Rys., in addition to which options were taken on additional requirements. Up to Feb. 28, the following orders had been placed this year:—

42 Pacific type (4-6-2) locomotives; (10 heavy, of 40,000 lb. tractive effort, and 32 medium, of 38,000 lb. tractive effort), and 25 Santa Fa type (2-10-2) locomotives from Montreal Locomotive Works Ltd.

30 six-wheel switching (0-6-0) locomotives and 15 Mikado locomotives, Canadian Government Rys. standard, from Canadian Locomotive Co., Kingston, Ont.

18 sleeping cars, 73½ ft. long; 12 dining cars; 20 baggage cars; 1,000 box cars, 40 tons capacity; 600 refrigerator cars, 30 tons capacity with steel subsill, and 80 cabooses, from Canadian Car and Foundry Co., Montreal.

500 box cars, 40 tons capacity; 1,150 general purposes (coal) cars, 50 tons capacity, and 6 steel snow plows from Eastern Car Co., New Glasgow, N.S.

350 ballast cars, 50 tons capacity, from Hart-Otis Car Co., Montreal.

1,500 box cars, 40 tons capacity from National Steel Car Corporation, Hamilton, Ont.

20 cabooses from Preston Car and Coach Co., Preston, Ont.

Four 120 ton industrial wrecking cranes; one industrial self propelling pile driver; four 100,000 lb. all steel Jordan ballast spreaders; two ¾ yd. Erie steam ditchers; from F. H. Hopkins & Co., Montreal.

One 15 ton 8 wheel Brown hoist, second hand, from T. J. McGovern, Toronto.

One 60 ton Lidgerwood rapid unloader, second hand, from Canadian Equipment Co., Montreal.

Some of the rolling stock ordered, as stated above, will probably be allocated to the Grand Trunk Pacific Ry.

The C.N.R. has also invited tenders for 350 stock cars, and has under consideration the ordering of 30 more cabooses.

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**Railway Employes Purchases**—The Brotherhood of Maintenance of Way Employes and Railway Ship Laborers, according to a Detroit, Mich., press report recently announced the purchase of four clothing factories from which goods will be sold at price reductions ranging from 25 to 60%. Negotiations are reported to be underway for the purchase of two other factories. This is part of a movement among labor unions in the United States in the direction of co-operation in order to meet the high cost of living.

**Paper Pulp from Flax Straw**—The C. P.R., which has been investigating the problem of manufacturing paper pulp from flax straw, will give full particulars to any accredited organizations interested in the commercial development of the process in Canada. Application should be made to Colonization and Development Department, C.P.R. Montreal.

# Romance of the Telegraph, Telephone and Wireless.

By H. Hulatt, Manager of Telegraphs, G.T.R. and G.T. Pacific Ry.

In the Grand Trunk Pacific Telegraph Co., of which it is my privilege to be Manager, the slogan of our selling force is:—"Efficiency is the conservation of time; time is money; telegraphing saves time." The thought created by this slogan is by no means a new one; the need for more prompt method of communication other than verbal or by courier was felt even by the ancients. Various schemes in those ancient days were adopted to overcome the difficulties of communication. Theseus devised the method of colored sails, to convey messages from ship to ship of the fleet, and incidentally caused the death of his father by his failure to handle the signals properly. He sailed into conflict with the enemy, with black sails set, the signal of battle and of death. Unfortunately when the battle was over, and he was the victor, in the excitement of the moment he forgot to lower the black sails and replace them with red, which it was understood would represent victory. His venerable father, Ageus, seeing the black sails from afar, believed the signal reported his son defeated and dead, and, without waiting to make further enquiries, drowned himself.

Ancient Persians carried messages by having them shouted from sentinel to sentinel, instead of adopting the slower method of by courier. A similar method of communication was also used occasionally by the ancient Gauls. Caesar records that the news of the massacre of the Romans at Orleans was sent to Auvergne, a distance of nearly 150 miles, by such a method, the information reaching Auvergne the evening of the day of the battle. A perusal of the history of the Red Indians of the North American continent, the Aztecs of Mexico, and the Incas of Peru, shows that they also had various methods of signalling, by means of smoke rings and puffs by days, and by signal lights and fire arrows by night.

Doubtless many readers have seen in old books references to the lodestone, and the following legend may be of interest. A shepherd, Magnes, whilst tending his sheep in ancient Greece, found that his crook was attracted by a strange rock; thus was the lodestone, the natural magnetic iron discovered. It is claimed the words magnet and magnetism are derived from the name of the shepherd. The ability of amber, when rubber, to attract straws was also known to the early peoples, and as a matter of fact the word electricity is derived from elektron, the Greek name for amber. Prior to the 18th century, the old alchemists, who, while they knew nothing about electricity, had discovered the peculiar properties of the lodestone and of amber, for many years derived, due to their knowledge of such peculiar properties, a lucrative business fooling the public. Incidentally, however, they ran the risk of being charged with dabbling in the black art, the penalty for which was death, by being burned at the stake, or drowned.

It was not until the latter half of the 18th century that scientists began to make any extensive investigations or experiments in connection with the possibility of developing the use of electricity. It is needless for me, I am sure, to state that as to what electricity actually is, even at this date, no one really knows; all we do know is that it is a power which scientists have been able to control in such a way as to prove of utility to mankind. Credit for the first steps towards an electric telegraph must be given to an unknown writer at the middlet of the 18th century. Scott's Magazine of Feb. 17, 1755, contained an article signed simply "C.M." The writer's idea was to lay an insulated wire for each letter of the alphabet, the wires to be charged from an electrical machine in any desired order, and at the receiving end they would attract discs of paper marked with the letter which that wire represented, thereby enabling any message to be spelled out. Such a scheme was not, of course, commercially practicable, but the article undoubtedly caused thinkers to experiment, and ultimately led to the development and subsequent demonstration of the commercial practicability of an electric telegraph system.

As an indication of the importance of speedy communication in the carrying on of the activities of life in this old world, it is interesting to record that the early scientists, experimenting in the control of electricity, considered the problem from a communication standpoint, rather than to utilize electricity for transportation and machinery purposes. There were several pioneers in the early 19th century, who concentrated on the problem of the electric telegraph, among others Ampere, the celebrated Frenchman, after who mis named the ampere, one of the units of electrical measurement, Profs. Gauss and Weber, of Gottingen, and Edward Davey of England. The two outstanding men, however, in the development of the telegraph from a practical commercial point of view were undoubtedly Wheatstone of England, and S. F. B. Morse, of the United States.

The actual first working telegraph line in England placed at the service of the public was in 1841 on the Great Western Ry. It did not, however, commend itself to the public, until its utility was strikingly demonstrated by the capture of a celebrated criminal called Kwaker. Early one morning a woman was found dead in her home in the suburbs of London; a man had been seen leaving the house and enquiry revealed the fact that he left on a slow train for London. Without the telegraph he could not have been apprehended, but fortunately this particular telegraph line was available and the police in London was by this means instructed to arrest him. The message read: "He is dressed as a kwaker." The reason for incorrectly spelling the word Quaker was due to the fact that on the receiving instrument there was no provision for the letter Q, and the incorrect spelling very nearly resulted in the criminal getting away.

Morse conceived the present application of electricity to telegraphy whilst on board a ship in 1833 en route to America. He developed his thoughts, and his apparatus was first exhibited to the public in 1837 and to the members of the Royal Society in London in 1839. The first actual telegraph line erected in the United States was between Washington and Baltimore, it being put into service on May 23, 1844. Morse's great problem was how to tie the wire to the poles, and his first procedure was to bore through the top of the pole a hole sufficiently large to let the wire through. It was found in practice, however, that in rainy weather there was too big a leakage of current, and consequently he subsequently enlarged the holes, and insulated the wire at the poles, by inserting the neck of a bottle in the holes. Consequently the neck of a bottle may be said to be the preliminary development of the glass insulator so commonly in use today.

One of the railways I represent was one of the first in America to go to the expense of erecting a telegraph line. In 1852 the Grand Trunk Ry. gave a contract to the Montreal Telegraph Co. to build a telegraph line consisting of a pole line and one wire from Longueuil to Portland for £12 7s 6d a mile. The G.T.R. was also the first railway to experiment in wireless telegraphy from a moving train, in Oct., 1902.

As a result of the development of land line telegraphs, thought was naturally given to the possibility of laying a submarine cable across the Atlantic, and many attempts were made without success; the first being in 1858. In 1864, no success having then been obtained, and as an indication of how hope of ever being successful had practically been given up, despite the fact that at that time the field telegraphic cable was under construction, the Western Union Telegraph Co. undertook to connect Europe and America by land line telegraphs from San Francisco to the Yukon, thence through Alaska to the Behring Sea, the latter to be crossed by a short submarine cable, connecting in Siberia with a telegraph line to be built to the mouth of the Amur River, where it would connect with the Russian Government telegraph line already built; and so continue throughout Europe. The erection of this land line telegraph was a matter of agreement between the United States, the British and the Russian Governments (Alaska at that time being owned by Russia), and the work was placed in charge of Col. C. S. Bulkley, U.S. Army Telegraph Corps. Construction was proceeded with promptly, the line running through Canada from New Westminster, via the Cariboo trail to Quesnel, thence via Fraser Lake, and Hazleton to the Naas River, the latter point being reached in July, 1866, a distance from New Westminster of 850 miles. The Bulkley River and Bulkley Canyon, in Northern British Columbia are both named after Col. Bulkley. On July 29, 1866, the construction party of 250 men, on receiving news that the field telegraphic cable referred to previously, had on that date been completed and successfully operated, without waiting further instructions, quit their work and left all material and supplies behind. The famous Indian bridge over the Bulkley River was built by Indians from the material left behind by the telegraph construction crew. It consisted of wood and telegraph wire, and the most astonishing thing is that, despite the fact that these Indians so far as it is known had never seen a suspension bridge, and also had not the assistance of white man in the construction, built a bridge conforming to all the standard principles usually

employed in connection with suspension bridges. It is only recently that the bridge was taken down, due to extreme age.

In 1870 the Western Union Telegraph Co. sold the telegraph line between New Westminster and the Naas River, to the British Columbia Government, which in turn transferred it to the Dominion Government when British Columbia came into the confederation in 1871. The Dominion Government subsequently, due to the Klondike rush, extended the line to Dawson and it is in operation today, in fact is in competition part of the way with the telegraph line of which I have charge.

The telegraph was first used in connection with the dispatching of trains on the Erie Rd. in 1861, due to the initiative and vision of Chas. Minot, then General Superintendent, and it sounds almost ludicrous today to read what trouble he had, in connection with the first telegraphic train dispatching order, to make the train crew realize that it was perfectly safe to operate under it and go ahead.

Developments in the telegraph field, after Morse had successfully inaugurated it, were not very great until a few years ago, although there had been developed the duplexing and quadding of wires, enabling 2 and 4 messages to be transmitted over the same wire simultaneously, and also the use of motor generators as against gravity cells for the supply of requisite current.

No progress can be made if people are all absolutely satisfied and contented. The increased speed of communication brought about by the telegraph, after people had become used to it, failed to satisfy, a still more flexible means of communication being desired. This led to the discovery and development of the telephone, which was invented largely as a side line in connection with the study of means for educating deaf and dumb people, undertaken by Alex. M. Bell in Scotland starting in 1849, Dr. Graham Bell, the actual inventor of the telephone, being his son.

Dr. Graham Bell proceeded to develop his ideas, with the result that the first telephone was exhibited at the Centennial Exhibition in 1876, and the first telephone conversation was made over a telegraph wire owned by the Walworth Manufacturing Co., Boston, to its factory at Cambridgeport, two miles distant. This took place on Oct. 9, 1876, and created world-wide astonishment. In passing. simply as an indication of the wonderful development in telephone transmission, I may say that early in 1916 it was my privilege to be the first subscriber of the Bell Telephone Co. of Canada to talk over its long distance wires from Montreal to Vancouver, B.C. Dr. Bell had a tremendously hard time in developing and demonstrating his invention, which was very different from that of today, being extremely cumbersome, and it was operated by only one wire, which limited the distance of conversation possible, and also, due to ground noises, etc., did not permit of a very quiet talking circuit. Instruments have since then been tremendously improved and to eliminate ground noises, etc., telephone companies now erect, in connection with their circuits, two wires, known as metallic circuits.

A most wonderful performance, in the opinion of the public at that time, took place in Montreal in 1878, when five telephones were connected at one end of a circuit, and one telephone at the other end, enabling the party using the latter telephone to talk to five different people at one and the same time. This was the first step probably in demonstrating the feasibility of what today is known as a party line.

The pioneers in the commercial telephone field had quite a hard task, and needed a great deal of courage to hang on, in fact in connection with the Bell patents in Canada, I believe the original holders sold them about 1880 at a ridiculously small sum.

Canada and the United States have, I believe, generally speaking, a telegraph and telephone service unexcelled by any other countries in the world. In 1916, the last figures I have available, there was one telephone to every 14 people in Canada, and in the United States there is a still greater number of telephones per capita in use. In England, where both telegraphs and telephones come under the Government Post Office Department, neither system has ever proved profitable, and the public in connection with both services, has never received service that could begin to compare with that given by the companies on this side of the Atlantic. Anyone who has been in England and has had to use the long distance telephone lines will realize the truth of this statement.

The telegraph and telephone companies, particularly the American Telegraph and Telephone Co., which controls the Bell companies of the United States, and, while it does not control, works very much in harmony with the Western Union Telegraph Co., have always maintained, at tremendous expense, engineering research departments, and it is due to the wonderful work done by the men of such departments and the enterprise displayed by the companies referred to that we have the remarkable facilities we enjoy today.

Up to within 10 years all railways operated their trains by telegraph. It was considered that they could not do so by telephone, due to the fact that they would, at the best, have only one pair of wires available for telephones, and, if 20 stations cut in on the line, code ringing would have been necessary when the dispatcher wished to raise an office, and every receiver would undoubtedly have been taken off the hook and everybody on the line would have been listening in; furthermore the dispatcher would not be sure whether he had got the right office or not. In 1906 and 1907, there was invented what is known as the selector, which, installed on metallic circuits, enables the train dispatcher, by the twisting of a key, to ring the bell of any specific office, and at the same time does not allow the bells in any other office to ring. As a consequence today, all the main trunk lines of railways are equipped with telephone train dispatching apparatus, resulting not only in the more prompt movement of trains, but, what is more important, increasing tremendously the safety, not only of the public, but employes. There was naturally considerable opposition, on the part of the old train dispatchers, to the inauguration of the telephone in connection with train dispatchers, to the inauguration of the telephone in connection with train dispatching, probably due to the thought that such inauguration would result in their losing positions. In practice, needless to say, this is not the case; there are very few dispatchers who, once having used a telephone, would care to go back to straight telegraph train dispatching. As a result of railways adopting telephone train dispatching, and the consequent expense of erecting heavy copper wires, thought was given to the possibility of not only using the two wires for telephone purposes, but at the same time to use them for telegraph transmission. This resulted in the development of a simple apparatus known as the simplex panel, which permits simultaneous operation of telegraph and telephone over the same circuit without conflict.

Both in the telegraph and telephone field we have been very largely dependent upon employe, who, in order to fullfil their duties, had very often to go through quite a lengthy period of training. Some few years ago there was introduced in the telegraph field the printer telegraph, which has since been brought to a high state of development, by means of which I could take stenographers from any office and within a comparatively short time have them sending messages between Montreal and say, Toronto or Winnipeg, faster and possibly just as correctly as the average telegraph operator.

The automatic telephone has been developed and brought to a high state of efficiency and there are several installations in successful operation in Canada, vis. at Edmonton, Regina, Calgary and Saskatoon, and a big installation is contemplated in Winnipeg.

Before discussing very briefly the subject of wireless I would like to say a few words as to what is called "wired wireless." I have, I hope, given some idea as to how the telegraph and telephone companies have endeavored to increase the uses to which existing plant can be put, thereby obviating the necessity for additional heavy capital expenditures, and in this connection I may say that some considerable time ago telephone companies developed and put into use what is known as a phantom circuit. Where a telephone company has copper wires on a pile line erected on the same plane, by a system of what is known as transpositions, it can from those 4 wires obtain 3 telephone circuits, and by means of a simplex at least 2 telegraph circuits. The new wired wireless is simply a still further development of the principles that have been previously put into effect. It has been largely developed by Gen. Squires, of the U.S. army, and also by American Telephone and Telegraph Co. engineers. They have had an experimental line in operation in the U.S. and so far have been able, over one circuit, to get 8 to 10 telephone conversations and 1 or 2 telegraph communications in operation simultaneously without conflict.

In connection with wireless, Marconi, whose mother was Irish, and who was himself a pupil for sometime at Bedford Grammar School and Rugby School in England, secured his first patent in June, 1896, and the first commercial use it was put to was in the autumn of 1897. Since then there have been very great developments. One of the perpetual troubles up to recently in connection with wireless was static, a condition in the atmosphere which completely put the wireless out of commission. This trouble was particularly prevalent during summer, and it may be of interest to know what it has been overcome by a discovery by Chief Engineer Wegeant, of the Marconi Co. in the U.S., and a graduate of McGill University, Montreal.

A recent development in connection with wireless is a device invented by C. A. Hoxey, Engineer of the General Electric Co., whereby wireless messages are visualized and also photographed. One of the troubles in connection with wireless has been the fact that signals heard in the received are often very faint. This invention provides a check on the safe copying of wireless messages by the receiving operator. The signals are recorded by a beam of light being reflected from a small mirror attached to a galvanometer of special design. This galvanometer is placed in parallel with telephone receivers of an ordinary wireless receiving set, a portion of the energy of the incoming signal being used to operate the galvanometer. By this means the mirror is made to vibrate very rapidly, whenever a dot or dash is impressed upon the circuit. The source of light comprises 2 incandescent lamps of special design, the reflection of one being used to make a record on the sensitized tape, the light from the other being projected on a small ground glass screen, thus making the vibrations visible, which enables the operator to properly adjust the machine and also read the message if the rate of sending is not too rapid. The sensitized paper is automatically passed through a developing and fixing bath, and washing and drying tubes, to a basket at the end of the machine, the elapsed time between the time of exposure and its delivery in the basket being about 2 minutes. Whereas heretofore the speed at which a wireless operator could transmit a message was regulated very largely by the capacity of the receiving operator, this machine, it is claimed, will ultimately be capable of recording at a speed of 1,250 letters, or 250 words a minute.

Wireless telephony has made remarkable strides during the last 2 or 3 years, though up to the present most developments have been made in receiving, rather than in transmitting features. One of the great features in the development of wireless communication since 1914 is the invention of the Thermionic or French valve, for the perfecting of which much credit must be given to our Signal Corps in France and Flanders. One of these valves amplifies sound 6 times, 2 valves 36 times, 3 valves 216 times, and so on. The Australian station used 15 valves recently, receiving from Carnarvon, Wales. This number of valves, at a short distance, sounds like a steam whistle, and a signaller remarked that with any more in service he would surely have heard the angels singing.

I have my dreams as to what future developments will be, but I think readers will agree with me that the improvements so far attained have been of tremendous benefit to mankind, and what is more that they will appreciate such developments, and the future developments to be, will result in the closer binding together of the different peoples of the world in different localities, and thereby, by bringing them into closer contact, and a better realization of one another's problems, tend very largely to remove what is a very prolific source of discord and strife, namely, a lack of knowledge of one another.

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Editor's Note—In the foregoing no mention is made of the fact that Dr. A. G. Bell invented the telephone in Brantford, Ont., and that many experiments with it were carried on there. We therefore think it well to give the following synopsis of a letter he wrote, when a memorial was proposed to be erected there to commerorate the event. The following are the facts he stated:

Invention of the telephone at Tutela Heights, Brantford, 1874 (summer). First telephone constructed and speech sounds heard, Boston, Mass., June, 1875. First draft of telephone patent specification prepared, Brantford, Sept., 1875. Complete sentences first clearly understood by telephone, Boston, Mar. 10, 1876. Telephone exhibited at Centennial Exhibition, Philadelphia, June 25, 1876. First attempts to transmit speech over telegraph lines, Boston, July 7, 9 and 12, 1876. First successful attempt to transmit speech over telegraph lines Brantford, Aug. 10, 1876. First public demonstration of ability to speak over a telegraph line, Brantford, Aug., 1876. First transmission of a number of voices simultaneously over a telegraph line, Brantford, Aug., 1876. First conversation by telephone over a telegraph line (reciprocal communication), Boston, Oct. 9, 1876. First long distance conversation over a telegraph line (143 miles), Boston, Dec. 3, 1876. First newspaper dispatch sent by telephone, Salem, Mass., Feb. 12, 1877. First telephone line opened, Boston, April 4, 1877.

Dr. Bell also wrote as follows: "In this way, Brantford became my thinking place; here the telephone was invented, the first draft of the patent specification prepared, the proper relation of the parts of the telephone to enable it to be used on long lines were worked out; and the first transmission of the human voice over miles of telegraph line was actually accomplished. Here also the first public demonstration of this result was given to the world. I think, therefore, that Brantford is fully justified in considering itself as integrally associated with the development of the telephone, and I need hardly say that I am deeply grateful to Brantford for seeking to perpetuate this association by the magnificent memorial you are now establishing in your city."

The following Brantford, Ont., press dispatch of Feb. 12 is of interest, in connection with the foregoing: The death of Norbett Burnett at Ogdensburg, N.Y., recalls the first telephone wire built in this city, by the deceased for Prof. A. G. Bell, when the first sound of the human voice was transmitted by telephone. Burnett was employed by the Montreal Telegraph Co. and erected six poles between Brantford and Tutela, using beer bottles as insulators.

# Freight and Passenger Traffic Notes.

Since the closing of Broad St. station, Ottawa, at the beginning of the year, 36 trains arrive at, or leave, the central station daily.

A U.S. press report states that three shipments of cattle, totalling 110 cars and 3,645 animals, reached Denver, Col., recently, from Cardston, Alta., en route for Texas.

A St. John, N.B., press report states that an office for the transfer of baggage to and from the union station in that city was opened at the station there, Feb. 2.

The Canadian National Railways put in operation, Feb. 20, on the night trains running between Toronto and Ottawa, the club compartment cars, Marmora and Bancroft.

The Canadian National Rys. are opening a ticket office on the upper floor of the building at pier 2, Halifax, N.S. When this office is completed the C.N.R. city ticket office on Hollis St., Halifax, will be refitted.

The Canadian National Rys. put in operation, Feb. 6, a parlor car service between St. John, N.B., and Halifax, N. S., on trains 13 and 14, in addition to the sleeping car and other accommodation provided on them.

The Board of Railway Commissioners has dismissed the application of the Wawota, Sask., for an order requiring better train service on the C.P.R. Reston and Wolseley Branch, with connection at Wolseley with the westbound train.

The Canadian National Rys. has been authorized by the Board of Railway Commissioners to open for freight traffic its line from the junction with the Patricia Bay line, mile 1.80 from Victoria, to mile 26.5 in the direction of Alberni, B.C., the speed of trains being limited to 10 miles an hour.

Victoria, B.C., merchants waited on the B.C. Government recently and asked for equitable freight rates from Victoria to points on the Pacific Great Eastern Ry. on the mainland. The premier replied that he would have a conference with Canadian Pacific and Canadian National Rys. officials.

The C.P.R. is reported to have carried over 4,000 tons of fruit, including 30 carloads of prunes, from the Grand Forks district during 1919, and 3,822 carloads of fruit and vegetables from the Okanagan Valley, between July and Nov., 1919. In the latter case there was an increase of about 1,000 carloads over 1918.

The Ontario Vegetable Growers' Association is reported to have asked the Board of Railway Commissioners to consider the adoption of a protective service under which railways will assume liability for damage to freight due to freezing, or artificial overheating, during transit.

The C.P.R. is reported to have handled on its Lethbridge Division, Alta., between Aug. 1, and Dec. 31, 1919, over 133,000 cattle, representing 5,200 carloads. About one-half went to Chicago, Ill.; one-quarter to Calgary, Winnipeg or other stockyards, and the remainder were shipped from point to point for feeding purposes.

The Fredericton and Grand Lake Coal & Railway Co.'s and New Brunswick Coal & Railway's bylaws authorizing their respective passenger traffic managers and assistant freight traffic managers to prepare and issue passenger and freight tariffs, respectively, have been approved by the Board of Railway Commissioners.

The Dolly Varden Mines Ry., an ore carrying railway line from the Dolly Varden Mines to Alice Arm, B.C., closed down for the winter. A press report states that small quantities of high grade ore are being sent by teams to Alice Arm for shipment, and that large

ore dumps are being accumulated at the mines awaiting the opening of the railway in the spring.

The Premier of British Columbia is reported to have received a letter from D. B. Hanna, President, Canadian National Rys., explaining that under present circumstances, it is not feasible, without the expenditure of a large sum, which the business offering in such a short section does not justify, to put on a train service on the Victoria and Sooke section of the company's line on Vancouver Island.

Traffic in 1919 over the Fraser River bridge at New Westminster, B.C., owned by the B.C. Government, and used for railway traffic by the Great Northern Ry., and the Canadian National Rys., is reported to have been as follows: Passenger trains, 6,720, carrying 32,187 passengers; freight trains, 4,260 with a total of 62,788 cars; mixed trains, 2,326, with a total of 7,854 cars. The auto traffic was heavy, at times as many as 65 cars an hour crossing.

D. C. Coleman, Vice President, C.P.R., Western Lines, in addressing the Western Canada Fruit Jobbers' convention at Vancouver, B.C., recently, is reported to have said that the company's programme for 1920 calls for the building of 500 refrigerator cars at a cost of approximately $1,500,000. The representations of the convention as to the type of car suitable for the fruit trade in western Canada would be given every consideration before the type was finally decided upon.

The G.T.R. was ordered by the Quebec Superior Court, Jan. 18, to pay J. G. Heon, $281.55 damages for delay in transportation of a carload of oats from Richmond to Sherbrooke, Que. The oats were shipped April 15, 1918, and were not delivered in Sherbrooke until May 2, between which time the price had fallen, and Heon claimed that he lost the amount claimed. It appeared from the evidence that the car containing the oats did not leave Richmond until May 2, arriving in Sherbrooke a few hours afterwards. Justice Pouliot held that this was an unreasonable delay, which the company had not attempted to justify or explain. Judgment was given for the full amount claimed with costs.

The Board of Railway Commissioners, sitting in Montreal, Feb. 24, heard a large volume of evidence in support of complaints made by residents along the route of the New York Central Rd. trains into Montreal, as to the service given. The company's officials stated that steps had been taken to remedy the matters complained of, and that it was willing to readjust its time schedule to suit the public. Hon. F. B. Carvell, Chief Commissioner, intimated that it appeared to be a case where a railway secured an entrance for its through traffic into Montreal and paid little attention to the needs of local traffic. As matters were being rectified the board would take into consideration the only remaining question, viz., whether an order should be issued directing the giving of the increased service asked for.

The Canadian National Rys. arranged recently with the G.T.R. for an optional interchange by which tickets issued by either line, and reading from Toronto or points south or west of it, to Winnipeg, or any place beyond, or vice versa, will be accepted for travelling either by Canadian National train 1, which runs via Port Arthur, or G.T.R. National train via North Bay and Cochrane. The former leaves Toronto union station 9.15 p.m., Sunday, Monday, Wednesday and Friday, and the latter at the same hour Tuesday, Thursday and Saturday, so that travellers from Windsor in the west to Halifax in the east, are thus afforded, via Toronto, a daily service between eastern and western Canada, in addition to that given by the C.P.R. Both trains carry full transcontinental equipment, standard and tourist sleeping cars, compartment, observation, library cars, dining cars, first class and colonist cars, etc.

# Telegraph and Telephone Franks Discussed by Board of Railway Commissioners

Hon. F. B. Carvell, Chief Commissioner, prepared the following memorandum, dated Jan. 17: "As the question of telegraph and telephone franks has frequently been brought to my attention during the past two months, owing to certain changes in the Railway Act in 1919, I deem it my duty to give expression to my views on the rights of telegraph and telephone companies, under the provisions of the act. Sec. 375 deals explicitly with these companies and first defines what is a telegraph company, and then sets forth in a general way its chief powers, and as all the telegraph companies in Canada come within the provisions of this section, what will apply to one will apply to all, and also to all telephone companies coming under the board's jurisdiction.

"Subsec. 12 makes, subject to certain reservations, the Railway Act, apply to telegraph and telephone companies, and leaving out the unnecessary portions, would read as follows: 'Without limitation of the generality of this subsection by anything contained in the preceding subsections the jurisdiction and powers of the board, and, in so far as reasonably applicable . . . the provisions of this act respecting such jurisdiction and powers . . . and the other provisions of this act (except . . . shall extend and apply to all companies as in this section defined.'

"Secs. 345, 436 and 347 deal with reduced and free transportation, and therefore, wherever reasonably applicable, the telegraph and telephone companies possess the same rights in issuing free or reduced transportation of messages as the railway companies possess as to reduced transportation of passengers, etc. The provisions for tolls, filing of tariffs, etc., as to these companies is provided for in Sec. 375, subsecs. 2, 3 and 4, and, generally speaking, are entirely subject to the board's approval and may be revised by the board from time to time, and therefore I can find no provision for free carriage of messages, excepting what may be found in secs. 345 and 346 as hereinbefore referred to. Sec. 346 deals with members of the Senate and House of Commons, the members of this board, and such officers and staff of the board as we may determine.

"Sec. 345 gives to the railway companies, and therefore telegraph and telephone companies, the right, if they so desire, of granting free transportation to persons, and certain classes of persons, therein specifically designated, and to such other persons as this board may approve or permit, subject always to the provisions regarding discrimination, and sec. 347 expressly provides the following: 'Subject to the provisions of secs. 345 and 346 of this act, no company shall hereafter, directly or indirectly, issue or give any free ticket or free pass, whether for a specific journey or periodical or annual pass, and no company shall otherwise arrange for or permit the transportation of passengers except on payment of the fares properly chargeable for such transportation under the tariffs filed under the provisions of this act, and at the time in effect.' It also provides that nothing shall affect the furnishing of free transportation where such is specifically provided by any other general act of the Parliament of Canada.

"First, as to those persons who are entitled to free transportation by sec. 346. As they receive their right to free transportation by law, I take it they are entitled to only what is specifically mentioned therein, and in general words this includes free transportation to members of the Senate and House of Commons, with their baggage, and free transportation to members of this board and such officers and staff of the board as we may determine, with our baggage, equipment, and official car, and I am unable to convince myself by any course of reasoning that the provisions of sec. 345, being the section stating what the railway companies may do on their own initiative, could be held reasonably applicable to this section, and, therefore, the persons mentioned therein are not entitled to receive telegraph and telephone franks, but I have not the same view regarding the persons referred to in sec. 345, because, as that provides what the railway companies may do in the granting of free or reduced transportation, I feel it reasonably applicable that telegraph and telephone companies have the same rights of granting free transportation for messages, that the railways would have in granting free transportation to the parties therein referred to.

"The opinion which I have already expressed rgearding the provisions of sec. 345 with respect to express companies applies very largely to franks by telegraph and telephone companies, with the addition that the exchange of telegraph, telephone, and cable franks is expressly provided for with other telegraph and telephone companies, their officers, agents, and employes, and it is my opinion that in carrying out the privileges granted the telegraph and telephone companies by the act, very great care should be exercised in the distribution of franks, because an application is now pending before this board by the telegraph companies, asking for a very substantial increase in their rates, amounting to from 30 to 35% of the rates now in force, and any revenue lost by the giving of franks must be made up by the remainder of the community. Holding these views, I consider it my duty to express them as I have done, and trust that the telegraph and telephone companies will be guided, as far as possible, by the interpretation of the Railway Act as herein set forth."

The foregoing memorandum was concurred in by Hon. W. B. Nantel, Deputy Chief Commissioner and by Commission-

ers Boyce and Goodeve. S. J. McLean Assistant Chief Commissioner added the following: "I agree in the Chief Commissioner's memorandum. At page 1, line 29, after the word 'and,' being the first word in the line, I would suggest the addition of the words 'not being excluded.' This will make the meaning clearer. At the hearing on Jan. 20, the Chief Commissioner made a statement as to this memorandum having been prepared. His intention is that it should issue as an interim judgment, giving an opportunity, within a reasonable time, for hearing, if such is asked for. As what is primarily concerned is the power of telegraph and telephone companies to issue franks, and the types of persons to whom same may be issued, it seems to me that, subject to whatever may be developed in further discussion, telegraph and telephone companies are really the only people who should be given an opportunity to speak to the matter at a hearing. The recipients of franks do not receive them as a matter of right." Commissioner Rutherford concurred.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canada Steamship Lines Ltd.—J. H. B. ADAMS, has been appointed General Agent, Import and Export from Mar. 15. Office, Montreal.

D. D'E COOPER, heretofore Agent, Import and Export, Toronto, has been appointed General Agent, Import and Export from Mar. 15. Office, Toronto.

J. H. EDWARDS, heretofore chief clerk, Claims Department, Montreal, has been appointed Assistant Freight Claims Agent, succeeding J. J. Lynch, deceased. Office, Montreal.

W. J. HUGHES, heretofore agent, Victoria Pier, Montreal, has been appointed District Freight Agent from Mar. 15. Office, Montreal.

W. J. KING, heretofore Division Freight Agent, Montreal, has been appointed General Freight Agent from Mar. 15. Office, Montreal.

W. P. O'BRIEN, heretofore agent at Quebec, has been appointed agent, Victoria Pier, Montreal, from Mar. 15.

JOHN F. PIERCE, heretofore Assistant Traffic Manager, freight and passenger lines, Prescott and east, has been appointed Passenger Traffic Manager, with jurisdiction over all passenger lines. The position of Assistant Traffic Manager is abolished.

Canadian National Rys., Canadian Government Merchant Marine Ltd.—WILLIAM PHILLIPS, heretofore, Canadian Representative, Cunard Line Steamships, Montreal, has been appointed European Manager, C.N.R. and C.G. M.M. Office, Orient House, London, Eng.

Canadian National Rys.—R. N. BLACK has been appointed airbrake instructor, Eastern Lines. Headquarters, Moncton, N.B.

E. BRODERICK, heretofore chief clerk, Right of Way Department, Winnipeg, has been appointed Right of Way and Property Agent, Western Lines. Office, Winnipeg.

T. J. GRACEY, heretofore Auditor Auditor of Disbursements and Accountant, Timiskaming and Northern Ontario Ry., Toronto, has been appointed Auditor of Disbursements, Canadian Northern Ry. System, vice T. R. Ralph, deceased. Office, Toronto.

J. HAWKINS, heretofore Road Foremen of Locomotives, has been appointed Assistant Master Mechanic, Ottawa Division, Ontario District, and his former position has been abolished. Office, Ottawa, Ont.

W. C. HUNTER has been appointed Airbrake Inspector, Eastern Lines. Headquarters, Montreal.

D. W. STEEPER, heretofore Assistant Superintendent, Division 2, Central District, Sioux Lookout, Ont., has been appointed acting Superintendent, Division 4, Central District. Office, Winnipeg.

W. G. STRACHAN, heretofore Road Foreman of Locomotives, has been appointed Assistant Master Mechanic, Superior Division, Ontario District, and his former position has been abolished. Office, Hornepayne, Ont.

Canadian North Eastern Ry.—Lieut.-Col. T. A. HIAM, who, prior to the war, was private secretary to Sir Donald Mann, at Toronto, has been appointed Vice President of this company, of which Sir Donald Mann is President. Office, Stewart, B.C.

Canadian Pacific Ocean Services Ltd.—A. R. DEAN, has been appointed Travelling Passenger Agent, Chicago, Ill.

G. W. WOOD has been appointed Auditor, vice John Leslie, Comptroller, C.P.R. and Auditor C.P.O.S., who has resigned as Auditor, C.P.O.S., to devote his time to C.P.R. duties. Office, Montreal.

Canadian Pacific Ry.—G. BRUCE BURPEE, heretofore General Travelling Passenger Agent, Montreal, has been appointed Agent, Passenger Department, Cleveland, Ohio, vice G. A. Clifford, assigned to other duties.

R. H. ELLIOTT has been appointed Road Foreman of Locomotives, Kenora, Ont., vice J. McFadyen.

F. F. W. LOWLE, heretofore General Agent, Alaska and Yukon Territory, Juneau, Alaska, has been appointed Local Freight Agent, Edmonton, Alta., vice R. F. Richardson, whose appointment as General Agent, Alaska and Yukon Territory, Juneau, was announced in our last issue.

J. McFADYEN, heretofore Road Foreman of Locomotives, Kenora, Ont., has been appointed Trainmaster and Divisional Master Mechanic, Cranbrook, B.C.

J. V. McNAB, heretofore Roadmaster, Maple Creek, Sask., has been appointed Divisional Engineer, Saskatoon Division, Saskatchewan District, Saskatoon, vice C. H. Fox, promoted.

T. MOFFATT, heretofore, chief engineer, s.s. Princess Victoria, has been appointed Machine Shop Foreman, Victoria, has been appointed Machine Shop Foreman, Victoria, B.C., vice E. Scaplen, resigned to enter Consolidated Whaling Corporation's service.

W. M. NEAL, heretofore General Secretary, Railway Association of Canada, Montreal, has been appointed Assistant General Superintendent, Quebec District, C.P.R. Office, Montreal.

G. H. NOWELL, heretofore Master Mechanic, Revelstoke Division, British Columbia District, Revelstoke, has been appointed Master Mechanic, Lethbridge Division, Alberta District, vice G. Twist, transferred. Office, Lethbridge.

B. J. QUILTY has been appointed Trainmaster, Brownville Division, New Brunswick District. Office, McAdam, N.B.

D. M. SMITH, heretofore Master Mechanic, Cranbrook, B.C., has been appointed Master Mechanic, Medicine Hat Division, Alberta District. Office, Medicine Hat.

H. G. STUDD, has been appointed Auditor for Europe. Office, London, Eng.

Grand Trunk Ry.—Upon the release of G.T.R. lines in the U.S. west of Detroit and St. Clair Rivers, and east of Norton Mills, Vt., from Federal control, Mar. 1, the jurisdiction of the company's executive officers will be extended over them.

Upon the release of G.T.R. lines in the U.S. east of Norton Mills from Federal control, Mar. 1, they will revert to and be embraced in the Eastern Lines, G.T.R. System, and the jurisdiction of the general and divisional officers of the transportation, engineering, telegraph, motive power and car departments is extended accordingly.

J. H. BURGIS, heretofore General Agent, Passenger Department, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich., has been appointed General Agent, Passenger Department, G.T.R., there.

R. L. BURNAP, heretofore Traffic Manager, Grand Trunk Western Lines Rd. (U.S.R.A.), Chicago, Ill., has been appointed Freight Traffic Manager, G.T.R. lines in the U.S., west of Detroit and St. Clair Rivers. Office, Chicago.

J. CAMERON, heretofore Chief of Tariff Bureau, Grand Trunk Western Lines Rd., Chicago, Ill., has been appointed Chief of Tariff Bureau, G.T.R., there.

J. D. EDWARD, heretofore Federal Treasurer, Grand Trunk Lines in New England (U.S.R.A.), Portland, Me., has been appointed Local Treasurer of these lines, on their release from federal control, Mar. 1. Office, Portland, Me.

E. C. ELLIOTT, of the Passenger Traffic Manager's office, has been appointed District Passenger Agent, at Bonaventure Station, Montreal, succeeding JOS. QUINLAN, who, after 43 years faithful service, will retire under the provisions of the company's superannuation fund, on Apr. 1, to which date he has been given leave of absence.

R. H. FISH, heretofore Superintendent, Stratford Division, Stratford, Ont., has been appointed General Superintendent, Eastern Lines, vice W. R. Davidson, transferred to Western Lines. Office, Montreal.

E. F. FLINN, heretofore General Western Freight Agent, Chicago, Ill., has been appointed General Freight Agent, Grand Trunk lines in the U.S., west of Detroit and St. Clair Rivers. Office, Chicago.

F. FOSTER, heretofore General Foreman, Ottawa, Ont., has been appointed Assistant to Superintendent, Motive Power, Allandale, Ont., vice J. Vass, transferred.

C. A. GORMALY, heretofore Division Freight Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Chicago, Ill.,

has been appointed Division Freight Agent, G.T.R., there.

H. H. HAMILL, heretofore General Agent, Freight Department, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich., has been appointed General Agent, Freight Department, G.T.R., there.

J. D. McDONALD, heretofore General Passenger and Baggage Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Chicago, Ill., has been appointed General Passenger Agent, also in charge of Baggage Department, G.T.R., there.

A. Z. MULLINS, heretofore Division Freight Agent, Grand Trunk Western Lines Rd., Grand Rapids, Mich., has been appointed Division Freight Agent, G.T.R., there.

G. L. NELSON, heretofore General Freight and Passenger Agent, Grand Trunk Lines in New England (U.S.R.A.), Portland, Me., has been appointed Division Freight Agent, G.T.R., Portland, Me.

C. G. ORTTENBERGER, heretofore General Agent, Passenger Department, Grand Trunk Western Lines Rd. (U.S.R.A.), Chicago, Ill., has been appointed General Agent, Passenger Department, G.T.R., there.

H. W. PLOSS, heretofore General Agent, Freight Department, Grand Trunk Western Lines Rd., Milwaukee, Wis., has been appointed Commercial Agent, G.T.R., there.

W. PULFORD is reported to have been appointed Supervisor of Track, with territory from Guelph to Harrisburg, and Kitchener to Weston, Ont. Office, Guelph, Ont.

W. H. SAMPLE, General Superintendent of Motive Power and Car Department, Montreal, has also been appointed Consulting Engineer, Motive Power and Car Department, G.T.R. lines in U.S., west of Detroit and St. Clair Rivers.

W. H SPICER, heretofore Assistant General Freight Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich., has been appointed Assistant General Freight Agent, G.T.R., Detroit, Mich.

W. C. TOMKINS, formerly Local Treasurer, G.T.R. Lines west of Detroit and St. Clair Rivers, Detroit, Mich., resumes that position, on the release of the G.T.R. lines in the U.S., from federal control, Mar. 1.

JOHN VASS, heretofore Assistant to Superintendent, Motive Power, Allandale, Ont., has been appointed Locomotive Inspector, U.S. lines west of Detroit and St. Clair Rivers. Office, Milwaukee Jct., Wis.

H.E. WHITTENBERGER, heretofore Federal Manager, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich., has been appointed General Manager, G.T.R. Lines in the U.S., west of Detroit and St. Clair Rivers, effective on the release of G.T.R. lines from federal control, Mar. 1. Office, Detroit, Mich.

Grand Trunk Pacific Ry.—O. CARLSON has been appointed Roadmaster, Prince Rupert, B.C., with territory from Pacific to Prince Rupert, vice E. Gunderson, who has returned to his former duties as section foreman, Smithers, B.C. The office of the roadmaster of thsi territory will be moved to Pacific, B.C., in the near future.

P. McGETTIGAN, heretofore acting Roadmaster, has been appointed Roadmaster, Endako, B.C.

C. B. MUTCHLER, heretofore Trainmaster, has been appointed Assistant Superintendent, Melville, Sask.

Guelph Junction Ry.—T. J. MOORE, City Manager, Guelph, Ont., is reported to have been elected Secretary-Treasurer, Guelph Jct. Ry. Co., in succession to the late Col. A. H. Macdonald. The duties of the position are little more than nominal, and in making the present appointment the city, which owns the railway, will save the $500 a year paid as salary to the late Secretary-Treasurer.

Oshawa Ry. — J. E. DALRYMPLE, Vice President (Traffic), G.T.R. and G. T.P.R., Montreal, has also been elected President, Oshawa Ry. (electric), vice E. W. Rathbun.

Railway Association of Canada—C. P. RIDDELL, heretofore Assistant Secretary, has been appointed Secretary, vice W. M. Neal, resigned to re-enter C.P.R. service. Office, Montreal.

G. A. BALFOUR, heretofore Assistant to General Superintendent, Quebec District, C.P.R., Montreal, has been appointed, Assistant Secretary, Railway Association of Canada, vice C. P. Riddell, promoted.

Timiskaming and Northern Ontario Ry.—D. HAMILTON has been appointed acting Auditor of Disbursements and Accountant, Toronto, vice T. J. Gracey, resigned to enter C.N.R. service.

## United States Railways Returned to the Companies by the Government.

The act to provide for the termination of federal control of railroads and systems of transportation, to provide for the settlement of disputes between carriers and their employes, to further amend the act to regulate commerce as approved, Feb. 4, 1887, and as amended, and for other purposes as passed by the U.S. Senate and House of Representatives, was sent to President Wilson on Feb. 25, and having been signed by him went into effect at 12.01 a.m., Mar. 1. It is divided into four parts, the first dealing with definitions. The second opens with the declaration that federal control of the railways and other systems of transportation shall terminate at 12.01 a.m., Mar. 1, and the following sections deal with the manner of the closing out of all matters as between the government control and the private owners.

A section dealing with the guaranty to carriers after the termination of federal control, provides that the companies shall file an acceptance of the terms by Mar. 15, upon filing of which the government guarantees to the railways, for six months, half a year's standard returns, and should there be any excess earnings over the guaranteed amount, one-half of such excess is to be paid to the general railroad contingent fund. During the guaranty period any of the companies concerned may make application to the Interstate Commerce Commission for advances on account of fixed charges and operating expenses in excess of the guaranty, and such advances may be made at 6%. Provision is also made for the ending to the companies for five years on capital account, $300,000,000 to be used as a revolving fund.

Another section deals with the position of labor and provides for the establishment of the Railway Tribunal Board of Appeal to consist of nine members, three to represent labor; three the public, with power to take jurisdiction of disputes between the companies and their employes which threaten interference with interstate commerce.

The headquarters of the board will be in Chicago, Ill., but it may hold sittings anywhere. The members of the board are to be appointed for five years, will be paid $10,000 a year each, and must be approved by the Senate. This section also provides that wages and salaries not less than those in effect at the termination of federal control must be paid by the companies until Sept. 1, next.

The outstanding feature of the act is contained in sec. 4, which directs the Interstate Commerce Commission to establish rates that will yield to the carriers in each rate making group, a net railway operating income equal to 5½% of the aggregate property value of the roads in such group. The commission may add to this rate ½ of 1% for additions, betterments and improvements, which under the commission's accounting rules, are charged to capital account. Earnings in excess of 6% will be divided equally between the railway's reserve fund and the federal general contingent fund, which will be administered by the commission in aiding the development of transportation, by loans to companies and the purchase of equipment to be leased to companies. The section also provides that after 120 days from the act going into effect, it shall be unlawful for any of the companies to issue new capital stock or bonds, or to assume any liability as lessor, guarantor, etc., except with the authority of the Interstate Commerce Commission.

**The Canadian Traffic League**, which was formed in Oct., 1917, consists of commercial traffic managers, and others in charge of traffic for firms shipping in Canada, and has a membership of nearly 100. The officers are A. W. Bell, Traffic Manager, General Motors Ltd., Oshawa, Ont., President; F. W. Dean, Traffic Manager, Steel Company of Canada; Hamilton, Ont., Vice President, and A. H. Thorpe, Traffic Manager, Wm. Davies Co., Toronto, Secretary-Treasurer. Regular meetings are held at the Canadian Manufacturers' Association's offices in Toronto on the first Wednesday of each month, but the meeting on Mar. 3 will be at the Board of Trade offices, Hamilton, Ont.

**Dutch Railways Electrification** — A cablegram from The Hague, Holland, states that a commission of Dutch engineers will visit this continent shortly to study the electrification of railways, with a view to changing the motive power on the Dutch railway systems from steam to electricity.

**The United Brotherhood of Maintenance of Way Employes and Railway Shop Laborers** has opened a retail store in Windsor, Ont., for the sale of gloves, mittens, etc., and has made arrangements with other stores in the city for the supply of goods of various kinds to members at reduced rates.

**The Canadian Brotherhood of Railway Employes** is reported to have elected the following officers at a meeting in Montreal, Feb. 16: Chairman, C. E. Cole, Moncton, N.B.; Vice Chairman; L. E. Leferie, Toronto; Secretary, B. Cummings, Moncton.

U.S. shipbuilders are reported to be building or have under contract for private companies, 93 tank steamships of more than 1,000,000 d.w. tonnage, to cost $200,000,000.

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## Results of Government Control of British Railways.

The Minister of Transport issued a report recently showing the results of working the railways during the periods of government control of railways in Great Britain, from Aug. 5, 1914 to Aug. 31, 1919, and in Ireland from Jan. 1, 1917 to Aug. 31, 1919.

For the period, Aug. 5, 1914 to Mar. 31, 1919, the revenue earned from all sources exceeded expenditure and the guarantee by about £2,000,000 to £7,000,000, according as the lower or higher figure (£10,000,000 or £15,000,000), of the value of the services rendered to the government during the period of control by the "other businesses" (i.e. apart from conveyance by rail) is taken. There are, however, to be set against this margin serious deferred liabilities in respect of replacement of stores and materials, arrears of maintenance and abnormal wear and tear. The amount of these liabilities cannot at present be ascertained.

In the current financial year the results for the first five months show a balance of revenue over expenditure of £12,183,934. The proportion of the guarantee for the same period is £21,226,600, and the deficit is therefore £9,042,666. Two important factors affect the expenditure for the whole year as compared with the first five months: The increased price of coal, which took effect on July 21, 1919, is not reflected fully in the August figures, whereas it will be a heavy item in the later months, and various concessions to railwaymen, not fully operative in the earlier months, will also increase the wages bill. It must further be borne in mind that railway revenue accrues disproportionately in the earlier months of the financial year. The sum of £60,000,000 was taken in the estimates to represent the anticipated cash payments in the financial year ending Mar. 31, 1920, which will include a portion of the liabilities for earlier years, but will not cover the whole of the 1919-20 and other outstanding liabilities.

An estimate of the deficit which will fall on the exchequer in respect of the financial year has been made, based on the latest operating results, and is as follows:

Estmiate of Deficit for Year Ended Mar. 31, 1920.

OPERATING RESULTS.

Receipts.

| | | |
|---|---|---|
| Railway working— | | |
| Public traffic | £157,400,000 | |
| Government traffic | 19,200,000 | |
| | | £176,600,000 |
| Expenditure | | 173,500,000 |
| Net receipts | | £ 3,100,000 |
| Other businesses—Net receipts | | 300,000 |
| | | £ 3,400,000 |

GOVERNMENT LIABILITY.

| | | |
|---|---|---|
| Guarantee of 1913 net revenue | £47,400,000 | |
| Interest on new capital | 1,000,000 | |
| | | 48,400,000 |
| Deduct— | | |
| Net receipts as above | | 3,400,000 |
| Net deficit falling on Exchequer | | £ 45,000,000 |

The figures thus show a probable deficit of £45,000,000. Any improvement in the position is mainly due to the extraordinary increase in passenger traffic last summer, and to the decision to apply, from April 1, 1919, to government traffic the same rates of increase as have been made to the public. The latter results in a credit to the railway account of about £5,000,000, but this credit involves a corresponding charge to other government departments. It should be added that the present estimate of £45,000,000 as the amount of the deficit may prove to be inadequate, if the drop from the summer level of passenger receipts is more marked than usual, as may well be the case in view of the unprecedented height attained, and as a result of the dislocation of business by labor troubles. On the other hand, no allowance is made for any growth of revenue from increases in freight rates which may become operative before the close of the financial year.

## Toronto Viaduct and Union Station

The question of the erection by the C.P.R. and the G.T.R. of a viaduct along the Toronto water front to eliminate level crossings, came before the Toronto Board of Control, Feb. 17, when it was decided to have a conference with the Toronto Harbor Commissioners on the matter. A meeting was arranged to be held Feb. 26 between representatives of the city, the Harbor Commission and the Board of Trade. The mayor of Toronto is reported to have said, Feb. 19:—"Both the harbor commissioners and the city are in favor of the viaduct order and are opposed to any departure therefrom in any particular. We have laid down a policy which I think will be agreeable to the city and the board of trade, that if the railways will buy the right of way of the viaduct, between Scott and Cherry Sts., which will give us ample evidence of their intention to go on with the work, we will be glad to discuss with them the temporary operation on the level of the new union station, but not otherwise. There has been some delay owing to the change of owners of the G.T.R."

## Railway Finance, Meetings, Etc.

New York Central Ry. Co.—There has been deposited with the Secretary of State at Ottawa, an agreement dated Jan. 24, between the New York Central Rd. Co. and others, and the Guaranty Trust Co. of New York as trustee, being supplemental to a lease of June 8, 1910, under the New York Central Lines Equipment Trust of 1910.

**Canadian National Rolling Stock Ltd.** has been incorporated under the Dominion Companies Act, with $500,000 authorized capital, and office at Toronto, to build, own, operate, manager and deal in engines, movable and stationary, and rolling stock of every form and description, rails, ties, machinery, tools, stores and equipment of all kinds for construction, operation and maintenance of railways, and ships of every description. The incorporators are: D. B. Hanna, A. J. Mitchell, G. Ruel, Toronto; E. E. Fairweather, Ottawa, all officials of Canadian National Rys., and G. A. Bell, C.M. G., Deputy Minister of Railways and Canals, Ottawa.

The Canadian Transfer Co.'s directors for the current year as elected at the recent annual meeting at Montreal, are: Hugh Paton, G. R. Starke, Sir Montagu Allan, F. W. Molson and F. M. McRobie.

The Dominion Public Works Department will receive tenders to April 15, for packing of material and supplies for points along the Yukon telegraph line, between Hazelton and Atlin, during 1920, 1921 and 1922.

## The Edmonton, Dunvegan and British Columbia Ry.'s Future.

The present position and future prospects of the Edmonton, Dunvegan and British Columbia Ry. and its two allied lines, the Alberta and Great Waterways Ry., and the Canada Central Ry., have been discussed at great length for the last year or so. The E.D. & B.C.R., which starts at Edmonton, Alta., and its two subsidiaries have a total length of about 756 miles, the present terminals being near McMurray, at the Peace River, at Grand Prairie, and at the Spirit River. There has been some grading done beyond the two latter points, the original intention having been to connect with the Pacific Great Eastern Ry., at the Alberta-British Columbia boundary. The total mileage in operation during 1919 was approximately 594 miles. Some negotiations took place in 1919 with the Dominion Government to have the lines taken over and linked up with the Canadian National Rys., but nothing definite was done. Other reports credited the C.P.R. with being desirous of acquiring these lines, but President Beatty, during his recent visit to the west, is reported to have stated positively that his company does not want them. Early this year negotiations were reported to have resumed with the Dominion Government.

The Premier of Alberta is reported to have made the following statement in the legislature on Feb. 20:

"At various times during the past year, particularly during the feed shortage, complaints have been made to the government as to the unsatisfactory service being rendered by the E.D. & B.C.R. Lack of proper transportation of both passengers and freight had created a situation which in the government's opinion, it was absolutely necessary to remedy. Default had already taken place in payment of interest, on the guaranteed bonds and the government commenced legal proceedings for the appointment of a receiver, under the provision of the trust deed by way of mortgage securing the bondholders and the government. J. D. McArthur then informed the government that negotiations were being carried on between the company and the Dominion Government either for financial assistance or purchase of the road. In informed him that, in order to stay proceedings under the deed of trust, it would be necessary for this government to have documentary evidence of the intentions of the Dominion Government in connection with this matter. In compliance with this request, evidence has been placed in the hands of this government, and at the conclusion of the address in reply to the speech from the throne, I will be pleased to lay copies of the correspondence on the table of the house."

The Premier of Alberta made the following further statement in the legislature, Feb. 23:—"I saw the contents of a letter from Sir Robert Borden to J. D. McArthur, informing him that he had appointed a committee of the government to deal with his request for assistance or purchase, just prior to his leaving Ottawa, in December, and I also saw a letter written by Sir George Foster to J. D. McArthur, copy of which I am placing on the table today. That we were not called upon by the railway company to pay interest on guaranteed bonds, which became due on Feb. 16, is evidence, I think, that the financial interests backing the company feel confident that the arrangement can be consumated between the company and the Dominion Government."

The correspondence laid on the table consisted of the following letters:

From J. D. McArthur to Premier Stewart, Feb. 6, 1920:—"Just prior to the departure of Premier Borden from Ottawa last month, a sub-committee of the Dominion Cabinet was appointed to consider the applications which I had made to the Dominion Government for assistance to the E.D. and B.C.R. by way of subsidy or otherwise. This committee has since had the matter under consideration and I enclose a copy of letter received by me from Sir Geo. E. Foster, acting Prime Minister, which sets forth the government's decision in this matter. Negotiations referred to in Sir George's letter are in progress and in viewof that fact, I trust that your government will see its way clear to withhold any contemplated legal action against the company by reason of any default on its part."

From Sir Geo. E. Foster to J. D. McArthur, Jan. 24, 1920:—"With regard to the application made by you in your letter of Jan. 20, for a subsidy or other assistance to the E.D. & B.C.R., and its branches. I beg to advise you that the government, after due consideration, has come to the decision that it would not be justified, under financial conditions now prevailing, to ask parliament to approve a cash subsidy to these lines. On the other hand, the government recognizes that the railway referred to was projected and constructed to open up, develop and colonize a very large and desirable section of western Canada in which practically all the natural resources are now owned and controlled by the Dominion and that for this reason there would have been justification in the past for granting a subsidy to assist in the construction of the lines mentioned to the extent of some three or four million dollars. The government must, however, take into consideration conditions as they now exist and as they are likely to continue for some years to come. Realizing that owing to the settlement of the Peace River country and its proper further development, the lines of railway referred to must continue to be operated and in all probability extended into new territory, the government has reached the conclusion that negotiations should be forthwith proceeded with for the purpose of ascertaining the possibility of arriving at an agreement whereby the E.D. & B.C.R. and its branches may be acquired and operated by the Canadian National Rys., as a part of its system, upon terms and conditions that the government will feel justified in submitting to parliament for approval at its next session."

## New Brunswick Government and Transportation Interests.

The annual statements of the finances of the Province of New Brunswick for the year ended Oct, 31, 1919, were published in the N.B. Gazette, recently, signed by Price, Waterhouse and Co., chartered accountants, Montreal, who made the following observations thereon: "During the year, $244,807.45, representing interest charges on the bonds and other indebtedness of the St. John and Quebec Ry., less the province's proportions of the railway earnings, has been capitalized."

The statements contain the following information relative to the recepits and expenditures, liabilities and assets in respect of railways and other transportation interests.

The statement of cash receipts and expenditures on current account, includes among receipts, $15,082.01, balance of St. John and Quebec Ry. earnings for the year ended Oct. 31, 1918, and $10,000 deposit by the Railway Passengers' Assurance Co., and among the expenditures, $101,727.91 balance of St. John and Quebec Ry. interest to Oct. 31, 1918.

The statement of revenue and expenditure contains the following items:—Receipts—Taxes from incorporated companies—Express companies, $500; telegraph companies, $1,500; street railways, $2,475.42; railway companies, $57,197; Southampton Ry. earnings, $2,149.69; rent reversing falls bridge, $3,000. Expenditures — Southampton Ry. earnings, previously taken into revenue, not recovered, $2,975.05.

The balance sheet as at Oct. 31, 1919, shows: Assets—Southampton Ry. earnings, $793.47; New Brunswick Power Co., cash and bonds held by province to provide for retirement at maturity of bonds issued by St. John Ry. as required by N.B. Companies Act, 1916, $250,521.08. Liabilities — New Brunswick Power Co., cash and bonds, $250,521,08. A note to this statement says: "A contingent liability exists in respect of bonds guaranteed by the province amounting, as far as can be ascertained, to $1,117,000. In addition to amounts held in trust stocks and bonds of a par value of $176,500 and assignment of certain mortgages were also held in trust by the province. Claims in respect of maintenance and construction work have been filed by certain companies operating railways leased from the province, but in respect of which the liability of the province, if any, has not been determined."

The statement showing the capital assets and liabilities, contains the following as to transportation companies: Assets—St. John and Quebec Ry. investment, balance as at Oct. 31, 1918, $6,488,584.17; construction expenditure to Oct. 31, 1919, less Dominion subsidy, $214,032.04; interest on bonds and other indebtedness, less province's share of the company's earnings, $244,807.45, total, $6,947,423.66. New Brunswick Coal and Ry., taken over and leased by the province, $1,246,431.77. Cash available for future capital expenditures—St. John and Quebec Ry., cash retained by the trustees for the bondholders under the provisions of the trust deed, $388,473.87; amount receivable on account of railway earnings to Oct. 31, 1919, $30,581.28. The capital liabilities specifically incurred for railway companies are—St. John and Quebec Ry. 5½% bonds, $450,000; 4½% bonds, $1,700,000; in addition to these bonds which were issued by the province in aid of construction, the province assumed liability for $4,250,000 of 4% bonds issued sued by the company.

The liabilities on construction account of the St. John and Quebec Ry. are:—Bank overdraft, $770,022.99; construction holdbacks, $12,766.66; contractors' deposit, $75,000; interest accrued on bonds issued by and in aid of the railways, $108,689.16, a total of $966,478.81.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alaska**—A recent report to the United States Government on the government railway from Seward to Fairbanks, Alaska, states that the work to be done to complete the line consists of the completion of the rehabitilation of the Alaska Northern Ry., including construction of snowsheds and enlarging of tunnels, and the building of a line from mile 237, ten miles north of Talkeetna, to unite 365, five miles north of Nanana Canyon. This is the only gap in the line from Seward to Fairbanks, 471 miles, with the exception of the bridge at Nenana, crossing the Nenana River, and a permanent bridge at mile 373, over the Nanana River, The dock at Anchorage also has to be built. (Nov., 1919, pg. 602).

**Alberta Hudson Bay Ry.**—The Alberta Legislature is being asked to extend the time within which this company may build the railway authorized by its act of incorporation. The High River and Hudson Bay Ry., which was incorporated by the Alberta Legislature some years ago, to build a railway from High River to the Alberta-Saskatchewan boundary, obtained authority in 1917 to change its name to the Alberta Hudson Bay Ry., also an extension of time for the construction of line for the railway authorized previously, and power to build a number of branch lines between High River and the International Boundary in Pincher Creek district. The people who hold this charter also hold a Saskatchewan charter in the name of the Saskatchewan Hudson Bay Co., to build a line from the Alberta-Saskatchewan boundary across Saskatchewan. They also have Dominion charters to building railways under the titles of the Calgary and Fernie Ry., and the High River, Saskatchewan and Hudson Bay Ry. (May, 1918, pg. 186, and Sept., 1919, pg. 491).

**Bagotville Ry. Co.**—The provisional directors named in an act passed by the Quebec Legislature recently incorporating a company with this title, are:—J. L. MacDougall, W. Murdock, H. Fitzsimons, C. Watt, B. Moses, Ottawa. Power is asked to build a railway from the Quebec and Saguenay Ry. at Nairn Falls, northerly along the Malbaic River to the Cabanie River, thence south of Lake Ha Ha, and the Mars River, or near either of them to Chicoutimi or as an alternative to follow the Mary's Road, together also branch lines. (Jan., pg. 18).

**Canadian Niagara Bridge Co.**—A press report says that M. C. Spratt, a Buffalo, N.Y., solicitor, stated recently that a sufficient area of land has been acquired on Grand Island, in the center of Niagara River, in connection with the project for building another bridge across the river, and that the New York Central Rd., Canadian Pacific Ry., and the Toronto, Hamilton and Buffalo Ry. are interested in the project. The bridge will, it is said, be a double track one, and will also be available for ordinary traffic. (Jan., pg. 18).

**Dolly Varden Mines Ry.**—A Victoria, B.C., press report says that counsel for the Dolly Varden Mines Co. has advised the B.C. Government that it is proposed to test the validity of the act passed by the B.C. Legislature, at its last session affecting the company's interests, and a later dispatch states that the B.C. Government has been advised that a petition has been sent the Minister of Justice at Ottawa, asking for the disallowance of the act on the ground that it was ultra vires of the legislature.

The Dolly Varden Mines Co. was given power, under the title of the Dolly Varden Mines Ry. Co. to build a railway from the mines to tidewater on Alice Arm, B.C. The Taylor Engineering Co. obtained the contract to build the line and some dispute arose over the cost of the work. When the company applied for further powers at the 1919 session of the legislature, the Taylor Engineering Co. protested and a special committee was appointed to investigate the matter. Upon the committee's report, an act was passed to enforce the terms of a settlement with the Taylor Engineering Co., which resulted in the latter obtaining control of the mines, subject to carrying out certain conditions. (Nov., 1919, pg. 602).

**Dominion Atlantic Ry.**—We are officially advised that tenders have been invited for the erection of a station building at Digby, N.S. It will be 2 stories high and 130 x 30 ft. The foundations and main floor will be of concrete. The floor plan provides for waiting rooms, baggage room, freight room, office, restaurant and lunch counter. The platform will be of concrete.

A press report states that the management is contemplating laying out new yards and shops, but that whether they will be at Kentville or Middleton, N.S., has not been decided. W. E. Boyd, of the C.P.R., Montreal, and M. K. McQuarrie, of the D.A.R., were reported to have been in Middelton, Jan. 12, looking over possible sites. (Dec., 1918, pg. 541).

**Esquimalt and Nanaimo Ry.**—Victoria, B.C., ratepayers, by a vote of 2,986 to 445, carried a bylaw recently to raise $420,000 to build a railway and general traffic bridge across Victoria Harbor at Johnson St., and provide the approaches. Negotiations for building this bridge have been carried on for several years. The E. and N.R. built a bridge across the harbor for its traffic, in connection with which there was some understanding with the city respecting the future erection of a traffic bridge there. When, about three years ago, the company proposed to replace the bridge by a heavier one, for the increased traffic, the city took up the question of carrying out the old understanding. As the result of lengthened negotiations an agreement was signed Dec. 27, 1919, by the Mayor of Victoria and R. Marpole, Vice President, E. and N.R., and a supplementary agreement was entered into on the same date between the city and the B.C. Government with respect to the bridge. The bylaw contains these agreements in full. The agreement between the city and the company, provides for a joint application to the Board of Railway Commissioners for approval of the agreement and for the construction of a railway and general traffic bridge from the foot of Johnson St., to the Songhees Reserve, with approaches. The bridge is to have a clear width of 20 ft., and is to be provided with a single track railway line on the north side, and is to be built of steel on pier of concrete or masonry or both. Plans for the bridge are annexed to the agreement, but the city may substitute truss span construction for plate girder construction, and place the bascule pier on the west side of the harbor channel instead of the east side. The city is to provide at its own expense the approaches to the highway portion of the bridge, and may permit street car or railway traffic on its portion of the bridge, subject to restrictions as to loading. The ties and rails for the present single track railway are to be furnished and laid by the E. and N.R. The agreement also provides for the payment of the cost of the maintenance of the bridge, and for various matters incidental to its construction. The company undertakes to pay the city $100,000 towards the construction of the bridge. The agreement between British Columbia and the city providing for the construction of the bridge, grants the city certain lands necessary for approaches, and also provides for the payment of $200,000 towards the work. The estimated cost of the bridge and its approaches is $720,000.

Application is being made to the Dominion Parliament for an act authorizing the company to build a railway from its present terminus at Courtenay, northwesterly to Duncans Bay on the east court of Vancouver Island.

We were officially advised recently that application would be made forthwith to the Board of Railway Commissioners and the Dominion Government for the approval of the bridge plans and it is expected that tenders for the bridge will be invited by the city early in May. The plans provide for approach spans of 120 ft. each, and a single leaf bascule with one 120 ft. channel. The approximate weight of steel in the superstructure will be 2,800,000 lb., and there will be approximately 10,000 cubic yards of concrete in the piers and abutments.

The city council is reported to have approved of the city engineer's recommendations as to the type of bascule span to be adopted, and to have passed a resolution that each step in connection with the bascule be subject to the approval and inspection of the engineers of British Columbia Government, the city and the E. and N.R. (Jan., pg. 18).

**Kettle Valley Ry.**—The Dominion Parliament is being asked to authorize the company to build a railway from near Coalmount, on the joint section operated by the K.V.R., and the Vancouver, Victoria and Eastern Ry., and Navigation Co., generally southerly to the Granite Creek coal areas, 12 miles. The company is also asking for a further extension of time for building following previously authorized lines: From Grand Forks, 50 miles up the North Fork of the Kettle River, and from near Otter Summit to the Aspen Grove mineral district, 30 miles. Power to issue bonds for $70,000 a mile in respect of these lines is also asked.

The Board of Railway Commissioners has approved plan of standard trestle to be built on the Copper Mountain branch, now under construction. (Jan., pg. 18).

**Lievre Valley Power, Traction and Manufacturing Co.**—The bill introduced in the Quebec Legislature recently to amend the company's charter was withdrawn, and the legislature on Jan. 29,

ordered the return of the fees paid, less cost of printing and translation. The company was incorporated in 1895 as the Buckingham Electric Ry., Light and Power Co., the name being changed to its present one in 1905. It has power to build a railway, to be operated by steam, electricity, or any other motive power, from Hull to the mouth of the Lievre River, and along that river's valley to the National Transcontinental Ry. (Jan., pg. 16).

**New Westminster Bridge**—The British Columbia Railways Department's annual report for 1919, contains the following information with respect to the bridge over the Fraser River at New Westminster, B.C.: New 80 lb. steel rails have been laid across the bridge; the southern highway approach has been refloored, and painting and general repairs have been completed. A painting machine has been bought. Contracts have been let for the renewal of lumber in the southern approach and for sidewalk carried by steel brackets on the upstream side of the bridge.

**Normandin Farmers Ry. Co.**—The provisional directors named in the act passed by Quebec Legislature recently, incorporating a company with this title, are: T. Bassiers, A. Villeneuve, farmers; B. Fraser, merchant, and S. N. Turcotte, notary, all of Normandin. The company's head office is to be at Normandin, but it is proposed to hold meetings at any other place in the county of Roberval, provided a bylaw to that effect is passed. The acpital stock of the company is fixed at $2,000,000. The railway to be built is to run through Roberval, Ashuapmouchouan, Demenles, Dufferin, Normandin, Girard, Albanel, Racine and Dolbean Tps. to deep water on the Saguenay River at Saint Fulgence. Construction is to be commenced in 1920 and a line from Normandin to a connection with the Quebec and Lake St. John Ry. must be completed and put in operation within two years from the passing of the act.

Subparagraph 22, of article 6474 of the Revised Statutes of 1909, respecting the construction of branch lines for certain purposes is repealed and a new subparagraph substituted. With the exception of some verbal changes in the second paragraph of the subparagraph the only change is that the branch lines to be built are not to exceed in any one case 20 miles instead of the 6 miles authorized under the existing subparagraph. (Jan., pg. 18).

**North Ry.**—The Quebec Legislature has granted the company an extension of two years for the commencement, and of seven years for the completion of its projected railway. The North Eastern Ry. Co. was the title under which the company was incorporated in 1906, the provisional directors being: J. C. Heintz, P. Harnischfeger, New York; J. T. Marchand, J. B. Lapointe, Montreal; R. Chevrier, Ottawa, and the company was authorized to build a line from near Ville Marie, on the east shore of Lake Timiskaming, via the Des Quinze, Victoria and Kakabonga Lake to Quebec City, with branches to the National Transcontinental Ry. near Lake Abitibi, from near the crossing of the Gatmean River to Nomining, from Lake Kakabonga to Maniwaki and other branch lines not to exceed in any one case 15 miles. An extension of time for construction was granted in 1909, and also in 1912. The act of 1912 changed the company's name to the North Ry. Co., and it was given power to build a railway from Montreal to a junction with the National Transcontinental Ry., and thence to James Bay. In 1914 the company sold to the Dominion Government for $250,000 its charter rights to build from Montreal to the National Transcontinental Ry. (May, 1915, pg. 171).

**The North West Route Limited**—The Dominion Parliament is being asked to incorporate a railway and navigation company for the general advantage of Canada, with this title, to build a railway to be operated by steam, electricity or other power, from the westerly end of Baker Lake, northwesterly to the easterly end of Schultz Lake, and from the confluence of the Hanbury and Theton Rivers, westerly and southwesterly to old Fort Reliance at the eastern end of Great Stave Lake, from the Hanbury and Thelon Rivers westerly to the northeasterly end of Artillery Lake, and from the southwesterly end of Artillery Lake southwesterly to old Fort Reliance at the eastern end of Great Stave Lake. The applicants desires power to dredge or otherwise improve Thelon River channel to build and operate steam and other ships, to build wharves, docks, elevators, warehouses, etc. Smeltic and Lewis, Ottawa, are solicitors for the applicants. Application was made to the Dominion Parliament at the regular session of 1919, for the incorporation of a company with the same title and similar powers. The bill was passed by the House of Commons, but the Senate's railway committee reported June 6, that the incorporation of the company would not be in the public interest, and the bill was thrown out. (July, 1919, pg. 382).

**Pabos, Amqui and Edmundston Ry. Co.** The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Pabos, Gaspe County, along the valley of the Grand Pabos River, cross Pabos Seigneurie and run through Blais, Lepage, Amqui, Pineau and Jette Tp. in Matane County, Lake Metis Seigneurie in Matane and Rimouski counties; Rimouski County, Timiskaming Seigneurie, Timiskaming County, Que., to Edmundston, N.B., with a branch from Grand Vallee, on the St. Lawrence River to the main line by the shortest possible route. G. L. Dionne, Amqui, Que., is solicitor for the applicants.

**Pacific Great Eastern Ry.**—A report on railway construction in British Columbia has been presented to the legislature in which considerable references are made to the P. and G.E.R. The report states that repairs to the roadbed and bridges of the sections in operation have been made, and cribwork to protect the line from washouts has been built. There have been used in maintenance 21,000 new ties, and the line has been placed in good condition. The Cheakamus bridge, which was burned, was rebuilt, traffic being interrupted for six weeks.

The Newport waterworks system has been acquired for $14,256, and has been extended so as to provide adequate water supply for Squamish Town and the railway. A power wheel and electric generating plant had been installed, providing light and power for the railway works, and machine shop and the town.

Regarding new construction on the extension from Clinton to Fort George, the report states that work was gone on with throughout 1919 and is still in progress. The material assembled at Lone Butte locomotive house and machine shop consisted of 300,000 ties, 3,000 poles, 75 miles of fencing and 24,000 tons of other material. A water tank and temporary buildings were erected; 18.5 miles of new grading was done; bridges were built; 73 miles of track were laid, bolted and spiked to Sept. 15; spur tracks were laid to ballast pits, and 250,000 yards of ballast got out; 102 miles of telegraph line were strung; 49 miles of fencing put up; 15 bridges containing 1,750,000 ft. b.m. built; three 40,000 gall. water tanks were put up, and there were also built 7 stations, and 2 section houses, and 2 stock yards were laid out. Twelve cottages have been built at Squamish for railway workmen at a cost of $18,989. The expenditure on new construction was approximately $1,800,000, and the cost of engineering was 2.25%.

A contract to complete the railway to Fort George has been let to the Northern Construction Co., and the programme for the year is a heavy one. Forty-one timber bridges requiring 8,000,000 ft. b m. and 3 steel bridges, regrading of 13C miles and the construction of 20 miles of entirely new line is required, 3 locomotives, 45 flat and 25 boarding cars additional will be required.

In order to avoid sliding hill sides and excessive cost for regrading and bridging, it was decided to divert the line at Quesnel and the crossing of the Cottonwood River. The Chief Engineer estimates as follows:

| | |
|---|---|
| Cost of completing original line with bridges across Quesnel and Cottonwood (permanent structures) | $1,821,825.00 |
| New line | 1,210,340.00 |
| Difference in favor of new line | $ 611,485.00 |
| Capitalized operating value | 600,000.00 |
| Total saving | $1,211,485.00 |

Besides the above economic saving the diversion will take the railway to the edge of the Fraser River at Quesnel, affording close connection between river steamers and the railway.

Surveys were made during last summer between Ashcroft and Clinton. Sixty-six miles of trial line were run. The projected line is 41.5 miles and with the exception of 6.8 miles at Ashcroft, a 1% line has been obtained without excessive construction cost.

The report says that the West Vancouver ferry will be discontinued and the P.G.E.R. north shore line will handle the West Vancouver passenger traffic. This railway has handled 7,000 passengers in a single day between North Vancouver and Whitecliffe.

The report gives a brief summary of the resources of the country adjacent to the P.G.E.R. and concludes by estimating the cost of completing it to Fort George and supplying necessary equipment at $4,000,000. The cost of the Peace River extension is estimated approximately at $18,000,000.

**Quebec and Chibougaman Ry. Co.**—The provisional directors named in the act recently passed by the Quebec Legislature, incorporating a company with this title, are: J. C. Cote, G. E. Paradis, Quebec; P. C. Costo, Montreal; D. Roy, Beaumont, Que.; W. J. Ewing, Richmond, Que. The company's office is to be in Quebec, its capital is placed at $1,000,000, and it is empowered to build a railway to be operated by steam or electricity, from Quebec northerly through Quebec, Montmorency, Charlevoix and Chicoutimi Counties to Chicoutimi on the Saguenay River, and thence through Chicoutimi and St. John Counties to Lake Chibougaman, and also branch lines. (Dec., 1919, pg. 655).

**Quebec, Que., to St. Stephen, N.B.**—The Quebec Board of Trade passed a resolution recently urging the Dominion Government to study the practicability of building a railway from Quebec City to St. Stephen, N.B. D. F. Maxwell, C.E., of St. Stephen, N.B., is reported to have informed the board that the line suggested would give a route of about 250 miles from Quebec to deep water at St. Stephen, with a 0.4% gradient and would effect a saving of about 300 miles, as against the present route. This projected route was first surveyed in 1832. (July, 1919, pg. 382).

**The Quebec Central Ry.** has, we are officially advised, completed the location for an 8.11 mile extension of its line from Scotts, to connect with the Canadian National Rys. at 2.5 miles west of St. Isidore station, and that construction will be proceeded with in the spring. The company expects to make arrangements by which it will be enabled, by means of this extension, to operate its train service over the Canadian National Rys. lines and the Quebec Bridge into the Champlain St. terminal in Quebec City. (Jan., pg. 18).

**Quebec Colonization Ry. Co.**—The provisional directors named in the act passed by the Quebec Legislature, recently incorporating a company with this title, are: F. C. Harriman, by J. L. Bunnell, attorney, New York; J. S. Morrison, Outremont, Que.; E. de C. Porcheron, L. Saint-Jacques, Montreal. The company has power to build a railway from Mont Laurier, Labelle County, southwesterly to the C.P.R. near Maniwaki, and running through Campbell, Kiawika, Dudley, Pope, Robertson, Boutillier, Kensington, Cameron, Wabasse, Aumond, Egan, Maniwaki and Bouchille Tps., or any of them, or through unorganized territory; then from Maniwaki westerly, in the direction of Lake Expanse and Lac des Quinze, to the C.P.R., near Timiskaming, then southeasterly through Tabaret, Mercier and Gendreau Tps.; also to build a railway from the Coulonge River, in Pontiac County, northerly to near Nottaway on the National Transcontinental Ry., thence northerly to the Bell River north of Lake Shabogama; with connecting lines and branches, the lines to be operated by steam or electricity. It also has authority to develop water powers, to distribute electric energy, to carry on business as hotelkeepers, and to operate ships. (Jan., pg. 18).

**Regina Spur Lines**—A press report states that Regina, Sask., City Council is considering a bylaw authorizing the building of a spur line to serve the T. Eaton Co., and the Wood Vallance Co.'s premises.

**Roberval - Saguenay Ry.**—The Quebec Legislature has passed an act authorizing the building of a line from the Quebec and Lake St. John Ry., near Malbaie "passing by the most advantageous places." The company is also given power to begin building this and other authorized, but unconstructed lines, by Mar., 1922, and to complete them by Mar. 24, 1925. (Jan., pg. 19).

**Salmon River and Northern Ry. Co.**—The Quebec Legislature has confirmed the company's charter rights as given in the statutes of 1905, chap. 59, has extended the time for building the projected railway for 10 years, has given authority to build branch lines not to exceed, in any one case, 15 miles, and has changed the company's office from Montebelle to Fasset, Labelle County. The line authorized in 1905, the time for the construction of which was extended on different occasions, is projected to start at Grenville, and run westerly to Montebello, thence northerly along the Salmon River Valley, to the west side of Lake Papineau; thence northerly on the east side of the North Nation River and Lake Nomining to the Rouge River Valley, where it would turn to the southeast, and along the western valley of the Rouge River to the National Transcontinental Ry. (Jan., pg. 19).

**Sydney and Louisburg Ry.**—The locomotive house at Sydney, N.S., is reported to have been destroyed by fire, Feb. 1; the loss being estimated at $10,000.

**Vancouver Terminal Belt Ry. Proposed**—H. H. Stevens, M.P., in the course of an address before the Vancouver Electrical Club, recently, at which W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., presided, referred to the harbor improvements proposed to be made by the Dominion Government at Vancouver. He is reported to have said that the amount expended during the last seven years for the improvement of the harbor, including the building of the government elevator, dredging, widening the First Narrows, etc., had been over $7,500,000. He also said he believed there was an absolute necessity for a belt railway system which would run along the north and south shores of the harbor and be connected by a bridge, probably at the Second Narrows. Such a railway must of necessity be under public control. All private lines should be granted free access so as to enable their cars to load and unload at the ships and docks. The railway should be built so as to serve every portion of the waterfront. The problem of the amount of trackage required from the piers to deal with freight is one on which the Dominion Government will consult experts.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board fo Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the board are given in full on another page of this issue.

General order 282, Jan. 29.—Amending general order 25, Jan. 25, 1909, respecting lighting systems to be used on trians.

29,283, Jan. 19.—Authorizing G.T.R. to build sidings and spurs for Lake Simcoe Ice Supply Co. and Chapmans Ltd., Belle Ewart, Ont.

29,284, Jan. 17.—Authorizing C.P.R. to build spur for T. Eaton Co., Regina, Sask.

29,285. Jan. 19.—Authorizing Alberta Public Works Department to make highway crossing over C.P.R. in north half of Sec. 2, Tp. 34, Range 1, west 5th meridian.

29,286. Jan. 22.—Relieving G.T.R. from providing further protection at Brenton's crossing, Corbyville, Ont.

29,287. Jan. 22.—Authorizing Canadian Northern Western Ry. to cross 24 highways with its Hanna-Medicine Hat Branch, mile 22.22 to 58.94, Alta.

29,288. Jan. 22.—Dismissing complaint of United Grain Growers, Ltd., Winnipeg, that Canadian National Rys. have refused compensation for loss by delivery to Thunder Bay elevator, instead of Paterson's elevator, of car of grain ex Deepdale, Man., Dec. 5, 1918, consigned to complainants in care of C.N.R. terminal elevator, Port Arthur, Ont.

29,289. Jan. 22.—Authorizing C.P.R. to build spur for Northwestern Milling & Export Co., Moosomin, Sask.

29,290. Jan. 22.—Approving Grand Trunk Pacific Branch Line Co.'s clearances at coal tipple and works to build adjacent to tracks to serve Foothills Collieries, in n.e. ¼ Sec. 24, Tp. 47, Range 20, west 5th meridian, Alta.

29,291. Jan. 19.—Relieving Lake Erie & Northern Ry. from providing further protection at Gilkins St., Brantford, Ont.

29,292. Jan. 19.—Authorizing Essex Terminal Ry. to build siding across Walker Road, Walkerville, Ont.

29,293. Jan. 23.—Approving Toronto Suburban Ry. Standard Freight Mileage Tariff C.R.C. 1.

29,294. Jan. 23.—Authorizing C.P.R. to build temporary flood opening at mileage 92.7, Belleville, Ont.

29,295. Jan. 22.—Authorizing Canadian National Rys. to build spur to freight sheds over Regina Municipal Ry., Fifth Ave., Regina, Sask.

29,296. Jan. 23.—Authorizing C.P.R. to build spur for Gregory Tire and Rubber Co. Ltd., Westminster Jct., B.C.

29,297. Jan. 23.—Authorizing C.P.R. to close and divert road on its Archive-Wymark Branch at mile 16.71 east of s.e. ¼ Sec. 23, Tp. 13, Range 11, west 3rd meridian, Sask., and to close diverted road at mile 16.80 in s.w. ¼ Sec. 24.

29,298. Jan. 19.—Approving extension of Canadian National Rys. St. Rose du Lac Branch, mile 121.04 to 140.19, Man., and to build same across 19 highways.

29,299. Jan. 19.—Relieving Michigan Central Rd. from providing further protection at the crossing east of Aylmer station, Ont.

29,300. Jan. 24.—Ordering C.P.R. to erect station buildings at Islington, Ont., in accordance with plan H22-67, work to be completed by July 31.

29,301. Jan. 22.—Approving location and plans of G.T.R. station to be built at Hawtrey, Ont.

29,302. Jan. 23.—Authorizing G.T.R. to use bridge 174, across Little Trout Creek, near Kingsey, Que.

29,303, 29,304. Jan. 23.—Authorizing C.P.R. to close and divert highway at mile 18.76, to cross at grade and divert road at mile 18.79, to close and divert highway at mile 18.84, to cross at grade diverted road at mile 21.96, and close and divert highway at mile 22, on its Archive-Wymark Branch, Sask.

29,305. Jan. 24.—Authorizing Canadian National Rys. to make highway crossing over its track, between Sec. 3, Tp. 23, and Sec. 33, Tp. 22, Range 29, west principal meridian.

29,306. Jan. 24. — Approving deviation of Grand River Ry. in Waterloo Tp., and Kitchener, Ont., and authorizing it to build diverted line across Maurice and Sydney Sts., Ida Ave., Carl St., Cedar Grove, Dundas and Prince Arthur Aves.

29,307. Jan. 23.—Authorizing Vancouver Power Co. to install gates in lieu of interlocking plant at crossing of New Westminster Southern Ry., at Cloverdale, B.C.

29,308. Jan. 27.—Authorizing Canadian Northern Pacific Ry. to carry traffic from junction with Patricia Bay line, mile 1.80, to mile 52.5, B.C., speed of trains between mile 26.5 and 52.5 not to exceed 15 miles an hour, and over crossings 10 miles an hour.

29,309. Jan. 26.—Authorizing railways operating in western Canada to increase charge from $3 to $4 a car for lining cars used for flaxseed.

29,310. Jan. 26.—Ordering Canadian National Rys. forthwith to appoint station agent at Clair, Sask; additional station accommodation to be further considered by the board.

29,311. Jan. 26.—Authorizing C.P.R. to build spur for Robin Hood Mills, Ltd., Moose Jaw, Sask.

29,312. Jan. 30.—Ordering C.P.R. to provide at least 125 cars and Canadian National Rys. at least 50 cars until otherwise ordered, at elevators at Fort William and Port Arthur, Ont., for receipt, handling, and carriage of grain, other than wheat, also flaxseed, for domestic use in Canada; cars to be allocated in proportion to cars ordered for which the necessary documents have been surrendered.

29,313. Jan. 28.—Approving agreement, Jan. 10, between Bell Telephone Co. and Sydenham Union Telephone Co., Grey County, Ont.

29,314. Jan. 29.—Authorizing Oshawa Ry. to build siding for Pedlar People Ltd., Oshawa, Ont.

29,315. Jan. 29.—Authorizing G.T.R. to build extension of siding for Durham Furniture Co., Durham, Ont.

29,316. Jan. 28.—Authorizing C.P.R. to build its Langdon North Branch, Acme to Empress, at grade across 36 highways in Alberta.

29,317. Jan. 28.—Authorizing G.T.R. to operate siding to be built by Toronto Harbor Commissioners for C.R. Peckover.

29,318. Jan. 29.—Suspending order 18,242, Nov. 19, 1912, which authorized City of Brandon, Man., to carry its municipal railway across Canadian Northern Ry. at First St., for 12 months from Jan. 29, during which, operation as authoribed by order 21,106, Dec. 26, 1913, be continued.

29,319. Jan. 29.—Ordering Canadian National Rys. to build cattle pass on G. H. Dickson's pro-

perty, Redcliff, Alta., mile 127, where C.N.R. contemplates installing drainage culvert.

29,320. Jan. 29.—Approving road diversion at crossing of highways by Canadian National Rys. near Humboldt, Sask.

29,321. Jan. 30.—Approving alteration in Grand Trunk Pacific Ry. right of way plan between mile 452.94 and 453.75, Prince Rupert East, B.C.

29,322. Jan. 30.—Authorizing G.T.R. to rebuild bridge 221, on lot 27, southwest concession of St. Regis, Que.

29,323. Jan. 30.—Approving New Brunswick Coal & Ry. Standard Passenger Tariff C.R.C. 4.

29,324. Feb. 2.—Ordering Grand Trunk Pacific Ry. to provide a one pen stock yard at Lydden, Sask.

29,325. Feb. 2.—Authorizing G.T.R. to build spur for Canadian Wood Products Ltd., Toronto.

29,326. Feb. 3.—Ordering G.T.R. to extend station platform at St. Marys, Ont., at least 200 ft. westward.

29,327. Feb. 3.—Authorizing C.P.R., pending further order, to remove station agent at Cheviot, Sask., caretaker to be appointed to keep station clean, heated and lighted for passengers, and to care for l.c.l. freight and express shipments.

29,328. Feb. 2.—Approving agreement, Jan. 15, between Bell Telephone Co. and New Glasgow Telephone Co., Elgin County, Ont.

29,329. Feb. 3.—Authorizing Town of Walkerville, Ont., to make crossing over Essex Terminal Ry. at Kildare Road.

29,330. Feb. 2.—Relieving C.P.R. from providing further protection at crossing of Howard Road, just east of Lake Shore Jct., Ont., and Windsor, Essex & Lake Rapid Ry.'s diamond.

29,331. Feb. 2.—Ordering Grand Trunk Pacific Ry. to erect shelter at Haysport, B.C., and to continue stopping trains for passengers and mail at Haysport so long as owners of wharf maintain same in such serviceable condition as will permit of reasonable and proper use by steamboat passengers using the wharf.

29,332. Feb. 2.—Authorizing C.P.R. to cross Canadian National Rys. at Watson, Sask., and ordering it to erect station at mile 29, near Watson, north of C.N.R. crossing.

29,333. Feb. 2.—Authorizing G.T.R. to renew overhead bridge at Henry St. over its tracks in Whitby, Ont.

29,334. Feb. 3.—Amending order 29,279, Jan. 16, showing details of C.P.R. proposed subway at mile 28.3, MacTier Subdivision, Ont.

29,335. Feb. 3.—Relieving G.T.R. from providing further protection at first crossing south of Sundridge Station, Ont.

29,336. Feb. 5.—Amending order 29,312, Jan. 13, directing C.P.R. and Canadian National Rys. to provide certain number of cars for loading of grain at Fort William and Port Arthur, Ont.

29,337. Feb. 4.—Authorizing Canadian National Rys. to make highway crossing between Secs. 9 and 10, Tp. 54, Range 23, west 4th meridian, Alta.

29,338. Feb. 3.—Ordering G.T.R. to install automatic bell at crossing of Victoria Road, near Guelph, Ont.

29,339. Feb. 5.—Rescinding order 5,885, Dec. 22, 1908, re diamond crossing of G.T.R. by Kitchener and Waterloo St. Ry., at Kitchener, Ont., in so far as it orders Kitchener Light Commission to pay the G.T.R. 90c a day, and providing that from Aug. 1, 1918, the watchmen's wages be apportioned equally between G.T.R. and Kitchener Light Commission.

29,340. Feb. 5.—Authorizing C.P.R. to build spur for Imperial Oil Ltd., at Carman, Alta.

29,341. Feb. 2.—Ordering Canadian National Rys. forthwith to appoint station agent at Redland, Alta.

29,342. Feb. 7.—Authorizing Canadian National Rys to rebuild bridge over St. Charles River, at mile 8.7 from Quebec, Que.

29,343. Feb. 7.—Relieving Toronto, Hamilton & Buffalo Ry. from maintaining station agent at Vanessa, Ont., station to be kept clean, heated and lighted when necessary, and arrangements made for care of express shipments.

29,344. Feb. 7.—Approving location and plans of C.P.R. proposed station at Braeside, Ont.

29,345. Feb. 7.—Relieving G.T.R. from providing further protection at first crossing east of Canfield station, Ont.

29,346, 29,347. Feb. 6.—Authorizing G.T.R. to build spurs for Manhasset Mfg. Co., St. Hyacinthe, Que., and Westmount Improvement Co., Kitchener, Ont.

29,348, 29,349. Feb. 9.—Authorizing Canadian National Rys to divert and cross the highways at mile 64.54, and 69.03, Division B, Okanagan Branch, B.C.

29,350. Feb. 6.—Authorizing Canadian National Rys. to remove station agent at Cap Sante, Que., caretaker to be appointed to keep station clean, heated and lighted for accommodation of passengers.

29,351. Feb. 10.—Authorizing G.T.R. to build spur for Empire Cotton Mills, Welland, Ont.

29,352. Feb. 10.—Authorizing Canadian National Rys to divert and cross highway at station 1045-00, mile 64.73, Division B, Okanagan Branch, B.C.

29,353. Feb. 9.—Authorizing C.P.R. to cross road allowance at mile 1.33, Lac du Bonnet Subdivision, Man.

29,354. Feb. 10.—Authorizing Canadian National Rys. to divert road at mile 65.37, Division B, Okanagan Branch, B.C.

29,355. Feb. 9.—Ordering G.T.R. to erect building at least 75 x 30 ft., 80 ft. west of station at West Toronto, Ont., for Canadian Express Co., with sheltered platform at least 30 ft. wide, at east end for empty trucks; to be completed by Aug. 31.

29,356. Feb. 4.—Relieving G.T.R. from providing further protection at crossing of Elmhurst Ave., Montreal West, Que.

29,357. Feb. 10.—Approving agreement Jan. 27, between Bell Telephone Co., and Brougham and Grafton Telephone Co., Renfrew County, Ont.

29,358. Feb. 9.—Authorizing Canadian Northern Saskatchewan Ry. to cross 5 highways on its Peebles-Lampman Branch, mile 0 to 32.39.

29,359. Feb. 9.—Authorizing Saskatchewan Government to carry highway over C.P.R. in s.w. ¼ Sec. 17, Tp. 38, Range 27, west 3rd meridian.

29,360. Feb. 10.—Approving agreement Jan. 27, between Bell Telephone Co. and East Woodville Telephone Co., Victoria County, Ont.

29,361. Feb. 12.—Authorizing Canadian National Rys. to cross and divert highway at mile 63.35, Division B, Okanagan Branch, B.C.

29,362. Feb. 11.—Approving route map showing general location of C.P.R. Rosemary Northerly Branch, mile 0 to 25.03, Alta.

29,363. Feb. 12.—Authorizing Saskatchewan Government to build highway across C.P.R., in Sec. 1, Tp. 14, Range 18, west 3rd meridian.

29,364. Feb. 12.—Authorizing Canadian National Rys. to cross and divert the road in s.w. ¼ Sec. 16, Tp. 27, Range 28, west 3rd meridian, Sask.

29,365. Feb. 4.—Approving British Columbia Telephone Co. bylaw authorizing W. Farrell, President, and G. Farrell, Secretary, to prepare tariffs of tolls, and other charges, both local and long distance.

29,366. Feb. 10.—Ordering Canadian National Rys. to maintain regular station agent at Dropmore, Man.

29,367. Feb. 13.—Authorizing C.P.R. to rebuild bridge over St. Maurice River, at mile 1.8, Cap de la Madeleine Subdivision, Que.

29,368. Feb. 10.—Ordering G.T.R. to maintain watchmen at crossings of Metcalfe and Caradoc Sts., Strathroy, Ont., between 6 a.m. and 10 p.m., two watchmen in each case working eight hours a day.

29,369. Feb. 12.—Authorizing Lake Erie and Northern Ry. and G.T.R. to operate over crossing at station 7.23, Brantford, Ont., without first stopping.

## Proposal to Revalue the Canadian National Railways.

Hon. T. A. Crerar, M.P., ex Minister of Agriculture, who resigned from the Dominion Government some months ago, in speaking at Winnipeg recently, said that the public administration of 20,000 miles of railway is made more difficult by the fact that Canada's railway policy in the past has not been sound in all its aspects. Lines have been duplicated and railways built at enormous cost through territory not sufficiently settled to provide profitable business. Faced with these handicaps he favors a revaluation of the whole Canadian National Railway system. He asked: "What does a business man do if he finds he has got into business difficulties, if he finds that he has expended money that is useless? In fact, what do his bankers insist that he do? He has got to re-establish his position by revaluing his assets and putting them down at a proper worth. That, to my mind, is one of the first things that should be done with our national system of railways. Their worth should be put down to a sound value and the difference written off to the debt of Canada. When this has been done these roads will be placed in the position where they can have a fair chance to compete in the public business of the country."

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and Public Elevators in the East.

| Week ended Feb, 6, 1920. | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William— | | | | | | |
| C.P.R. | 113,855 | 24,082 | 110,705 | ..... | 43,063 | 291,705 |
| Empire Elevator Co. | 368,292 | 288,406 | 217,118 | 15,892 | 37,544 | 927,252 |
| Consolidated Elevator Co. | 439,230 | 73,288 | 62,907 | 40,297 | 10,280 | 627,002 |
| Ogilvie Flour Mills Co. | 251,359 | 76,612 | 89,743 | ..... | 45,082 | 462,796 |
| Western Terminal Elevator Co. | 374,439 | 38,715 | 15,021 | 19,589 | 7,854 | 455,618 |
| G. T. Pacific | 686,067 | 338,443 | 40,104 | 24,507 | 31,454 | 1,120,575 |
| Grain Growers' Grain Co. | 988,516 | 417,161 | 170,653 | ..... | 65,004 | 1,641,334 |
| Fort William Elevator Co. | 276,857 | 380,248 | 47,305 | 14,272 | 12,042 | 730,724 |
| Northwestern Elevator Co. | 554,859 | 20,075 | 26,866 | 44 | 69 | 601,913 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 1,302,794 | 725,322 | 214,863 | 2,181 | 52,171 | 2,297,331 |
| Sask. Co-op. Elevator Co. | 1,459,939 | 359,473 | 44,601 | 38,304 | 21,258 | 1,923,575 |
| Canadian Government Elevator | 164,549 | 92,787 | 26,581 | 68,920 | 15,317 | 368,154 |
| Account Imperial Government | | | | 7,207 | | 7,207 |
| Thunder Bay | 335,511 | 499,384 | 90,993 | 8,879 | 17,124 | 951,891 |
| Davidson and Smith | 384,463 | 42,782 | 13,204 | ..... | 1,081 | 95,530 |
| Eastern-Richardson | 313,153 | 169,450 | 36,164 | 8,502 | 33,848 | 561,117 |
| Vancouver Can. Gov't. Elevator | 1,588 | 32,192 | 6,190 | ..... | *1,425 | 41,395 |
| Total public terminal elevators | 7,669,471 | 3,579,420 | 1,213,018 | 248,594 | 394,616 | 13,105,119 |
| Saskatoon Can. Gov't. Elevator | 391,814 | 361,580 | 2,338 | ..... | ..... | 755,732 |
| | | | | | *2,740 | |
| Moose Jaw Can. Gov't. Elevator | 260,912 | 179,755 | 6,056 | 7,825 | 1,270 | 458,558 |
| | | | | | *1,644 | |
| Calgary Can. Gov't. Elevator | 1,186,836 | 827,317 | 54,121 | 182 | 13,066 | 2,083,166 |
| Total Interior Terminal Elevators | 1,839,562 | 1,368,652 | 62,515 | 8,007 | 18,720 | 3,297,456 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 4,500 | 177,822 | 121,767 | ..... | ..... | 304,089 |
| Midland Elevator Co. | 31,071 | 346,521 | 24,561 | ..... | 71,557 | 473,710 |
| Tiffin, G.T.P. | 292,998 | ..... | ..... | ..... | 31,751 | 1,370,983 |
| Port McNicoll | 414,413 | 854,366 | 70,453 | ..... | 31,751 | 1,370,983 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 627,644 | 76,400 | ..... | ..... | ..... | 704,044 |
| Toronto— | | | | | | |
| Campbell Flour Mills Co. | 111,642 | ..... | ..... | ..... | ..... | 111,642 |
| Kingston— | | | | | | |
| Commercial Elevator Co. | ..... | 25,363 | ..... | ..... | ..... | 25,363 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 156,602 | 298,509 | 28,868 | ..... | 3,439 | 487,418 |
| Montreal Warehousing Co. | 441,323 | 28,471 | ..... | ..... | ..... | 469,794 |
| Ogilvie Flour Mills Co. | 314,309 | ..... | 7,492 | ..... | ..... | 321,801 |
| Quebec Harbor Commissioners | ..... | 1,943 | ..... | ..... | ..... | 1,943 |
| West St. John, N.B., C.P.R. | 585,616 | 9,103 | 206,729 | ..... | ..... | 801,448 |
| St. John, N.B., Can. Nat. Rys. | 139,460 | ..... | 34,940 | ..... | ..... | 174,400 |
| Halifax, N.S. | 468,569 | ..... | ..... | ..... | ..... | 468,569 |
| Total Public Elevators | 3,588,147 | 1,818,498 | 494,810 | ..... | 106,747 | 6,008,202 |
| Total Quantity in Store | 13,097,180 | 6,766,570 | 1,770,343 | 256,601 | 520,083 | 22,410,777 |

†Corn.

# Traffic Order by Board of Railway Commissioners.

**C.P.R. Weyburn-Lethbridge Line Rates and Extension.**

29,230. Jan. 2.—Re application of Associated Board of Trade and Saskatchewan Grain Growers' Association for a reduction in rates to stations on the C.P.R. Weyburn-Lethbridge line, and for the construction of the uncompleted portion of the line. Upon hearing the application at Regina, Mar. 1, 1919, the applicants, the Shaunavon Board of Trade, and the railway company being represented at the hearing, John George appearing in person, and what was alleged, it is ordered that the application be dismissed.

**Fredericton and Grand Lake Coal & Ry.'s Freight Tariff.**

29,263, Jan. 10. This order, as issued originally, and published in Canadian Railway and Marine World for February, pg. 71, has been changed to read as follows: Re application of Fredericton & Grand Lake Coal & Ry. Co., under sec. 330 of the Railway Act, 1919, for approval of its Standard Mileage Freight Tariff, C.R.C., no. 84. Upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that said tariff of maximum mileage freight rates, to apply between stations on the Fredericton & Grand Lake Coal & Ry. Co.'s railway, be approved, the tariff, with a reference to this order, to be published in at least two consecutive weekly issues of the Canada Gazette.

**New Brunswick Coal & Ry. Freight Tariff.**

29,264, Jan. 10.—This order, as issued originally, and published in Canadian Railway and Marine World for February, on pg. 71, has been changed to read as follows: Re application of New Brunswick Coal & Ry., under sec. 330 of the Railway Act, 1919, for approval of its Standard Mileage Freight Tariff C.R.C. no. 51. Upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff of maximum mileage freight rates, to apply between stations on the New Brunswick Coal and Railway, be approved; and that the tariff, with a reference to this order, be published in at least two consecutive weekly issues of the Canada Gazette.

**Supply of Grain Cars at Port Arthur and Fort William.**

29,312. Jan. 30.—In pursuance of the powers conferred upon the board by the Railway Act, 1919, sec. 312, and order in council 1,589, July 31, 1919, as continued in full force and effect by act of the Parliament of Canada, 10 George V., chapt. 9, and of all other powers possessed by it in that behalf, it is ordered as follows: That on Monday, Feb. 2, 1920, and on each succeeding Monday until otherwise ordered by the board the C.P.R. provide at least 125 cars and the Canadian National Rys. at least 50 cars at the elevators at Fort William and Port Arthur, Ont., for the receipt, handling, and carriage of grain, other than wheat, also flaxseed, for domestic use in Cnada; the said cars to be allocated in proportion to the cars ordered for which the necessary documents have been surrendered.

This order was amended by order 29,336 Feb. 5, as follows: Upon its being represented to the board that the effect of the order allocating the cars upon the surrender of the necessary documents is to exclude users of private elevators which do not issue warehouse receipts from any benefit thereunder, it is ordered that order 29,312 be amended by striking out the words "for which the necessary documents have been surrendered," at the end thereof.

**New Brunswick Coal & Ry., Passenger Tariff.**

29,323. Jan. 30.—Re application of New Brunswick Coal & Ry., under sec. 334 of the Railway Act, 1919, for approval of its Standard Passenger Tarff, C.R.C. 4. Upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff, to apply between stations on the New Brunswick Coal and Railway, be approved; and that the tariff, with a reference to this order, be published in at least two consecutive weekly issues of the Canada Gazette.

**Fredericton Grand Lake Coal & Ry. Co.'s Passenger Tariff.**

29,370. Jan. 30.—Application of Fredericton & Grand Lake Coal & Ry. Co., under sec. 334 of the Railway Act, 1919, for approval of its Standard Passenger Tariff C.R.C. 4. Upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff, to apply between stations on the Fredericton & Grand Lake Coal & Ry. Co.'s railway be approved; the tariff, with reference to this order, to be published in at least two consecutive weekly issues of the Canada Gazette.

**Free Time for Ordering and Paying Freight Charges.**

29,389. Re application of Saskatchewan Supply and Fuel Co., for consideration by the board of the question of free time allowed for ordering and paying freight charges. Upon hearing the application at Saskatoon, Nov. 29, 1919, the applicant, the Canadian Freight Association, and the C.P.R., being represented at the hearing, and what was alleged, it is ordered that the application for a modification of rule 2 (b) of Canadian Car Demurrage Rules to afford free time for alternative placement orders for unloading cars, also far an allowance of free time for payment freight charges be refused.

**Passenger Commutation Rates Tariffs Suspended.**

29,407. Re complaints of City of Toronto; residents of Oakville, and stations between Oakville and Toronto; residents of Laval des Rapides, Que.; Gatineau Residents Association; E. N. Brown, of Montreal; the Town of Weston, Ont., and residents of the Town of Lasalle, Que., against proposed increase in commutation rates published by railway companies to become effective March 1. Upon hearing the complaint of the residents of the Town of Lasalle at Montreal, Feb. 25, the Town of Lasalle and the railway companies interested being represented at the hearing, and what was alleged and upon reading the submissions filed on behalf of the other parties interested, it is ordered that the following tariffs be suspended, pending hearing by the board, viz.: Tariffs C.R.C. 139, G.T.R. Tariff C.R.C. no. E-2822. Canadian National Rys. Tariffs C.R.C. no. W-90 and no. E-114. Toronto, Hamilton and Buffalo Ry. Tariffs C.R.C. 1,279, 1,281, 1,284. New York Central Rd. Supplement 4 to Tariff C.R.C. 9. Central Vermont Ry. Supplement 1 to Tariff C.R.C. 525.

## Regulations for Car Lighting Systems.

The Board of Railway Commissioners passed general order 282, Jan. 29, as follows: Re general order 25, Jan. 25, 1909, prescribing lighting systems to be used on each and every car requiring lighting on the railway, or portion of railway, operated by every railway company, subject to Dominion jurisdiction. Upon reading what is filed on behalf of the Canadian Pacific, Grand Trunk, Grand Trunk Pacific, Canadian National Railways and the Wabash and Michigan Central Railroads, and the report and recommendation of the board's Mechanical Expert, concurred in by its Chief Operating Officer, it is ordered that general order 25, be amended by adding after sub clause (3) of clause (h), paragraph 3, the following, viz.: "4. That in all cases of derailment or accidents to passenger cars lighted with Pintsch gas or Commercial acetylene, the supply of gas must be shut off, if possible, by closing the stud valves in storage tanks underneath the body of the car. Arrangements must be made to place a key securely in the gauge box underneath the car, where it will readily be accessible. Instructions must be issued to train and wrecking crews to govern this matter, so that there will be no misunderstanding in case of accident."

## Grain Inspected at Western Points.

The following figures, compiled by the Dominion Bureau of Statistics, show the number of cars of grain inspected at Winnipeg and other points on the Western Division, during January, and during five months ended Jan., 1920 and

| | Jan., 1920 | 5 mons. to Jan., 1920 | 5 mons. to Jan., 1919 |
|---|---|---|---|
| C.P.R. | 5,564 | 50,363 | 51,662 |
| C.N.R. | 4,010 | 30,781 | 33,513 |
| G.N.R. (Duluth) | 20 | 475 | 709 |
| G.T.P.R. | 1,817 | 14,328 | 12,116 |
| Totals | 11,411 | 95,947 | 98,000 |

A Concordance of the Railway Act, statutes of Canada, 1919, chap. 68, by A. H. O'Brien, M.A., ex House of Commons Law Clerk, and counsel of the House of Commons Speaker, being a new edition of Currier's Concordance, has been issued. It contains the full text of the act, an analytical index of it, a table of reference from the old act to the new, a list of other acts affecting railways, and the Board of Railway Commissioners' rules and regulations, with index. It is published by Canada Law Book Co., Toronto.

**Railway Lands Patented**—Letters were issued during January for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia as follows:—

| | Acres. |
|---|---|
| Canadian Northern Ry. | 1602.00 |
| Canadian Pacific Ry., roadbed and station grounds | 1.09 |
| Central Canada Ry. | 3.77 |
| Total | 1606.86 |

W. B. Way, Superintendent, Canadian National Rys., Cochrane, Ont., in sending Canadian Railway and Marine World some suggestions, says: "I consider the circulation of your paper is of value to railways and railway men."

## C.P.R. Scholarships in McGill University.

Grant Hall, Vice President, C.P.R., has issued the following circular:—A free scholarship, covering four years tuition in architecture, chemistry, civil, mechanical or electrical engineering at McGill University, Montreal, is hereby offered, subject to competitive examination, to apprentices and other employes enrolled on the company's permanent staff and under 21 years of age, and to minor sons of employes. The competitive examination, which will be the regular entrance matriculation examination provided for in the university's annual calendar, will be held at the university, and at other centers throughout Canada, in June, 1920. The candidate making the highest average, and complying with the requirements of admission, will be awarded the scholarship and have the option of taking any of the above courses. Scholarships will be renewed from year to year, to cover a period not exceeding four years, if, at the close of each session, the holder thereof is entitled, under the rules, to full standing in the next higher year. In case a scholarship holder finds it necessary to interrupt his course for a year or more, notice must be given at the close of the session to the C.P.R. Co., and to the Dean of the Faculty of Applied Science of the University, in order that the scholarship may be open to other applicants. In order to establish prior claim to the next available scholarship, notice of the student's intended return must be given to the C. P.R. Co. and to the Dean of the Faculty of Applied Science, not later than Jan. 1, preceding the opening of the session in which such scholarship will be available. Applications for certificates entitling eligible persons to enter the competition should be addressed to C. H. Buell, Staff Registrar and Secretary, Pension Department, C.P.R., Montreal. Copies of the annual calendar containing the conditions of admission and announcement of courses may be obtained upon application to the Registrar, McGill University. Certificate holders should, not later than May 10, 1920, apply to the Registrar of the University, for admission to the examination, and such application must be accompanied by the company's certificate of eligibility.

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**Esquimalt and Nanaimo Ry. Land Grant**—Replying to a question asked in the British Columbia Legislature, Feb. 10, as to the amount contributed by the E. and N.R. to the provincial revenue under the E. and N.R. Co.'s Land Grant Tax Exemption Ratification Act, 1912, the Finance Minister said: "The sum of 1½c in respect of each acre of the company's land grant remaining vested in the company and exempt from taxation on June 30 in each year, the payments made on this account to date being as follows: 1913, on 1,101,725 acres, $16,-525.87; 1914, on 1,087,118 acres, $16,-307.77; 1915, on 1,063,254 acres, $15,-948.81; 1916, on 1,059,270 acres, $15,-890.55; 1917, on 1,057,992 acres, $15,-869.88; 1918, on 1,056,030 acres, $15,-840.45; 1919, on 1,054,302 acres, $15,-814.53."

Promoters of a railway to connect Antofogasta, Chile, and Buenos Aires, Argentine, at a cost of $25,000,000, are said to be seeking capital for construction in North America.

## Snow and Cold Paralyze Newfoundland's Transportation Facilities.

St. John's, Nfld., press dispatch, Feb. 10.—Owing to continuous snowstorms, the Reid Newfoundland Co. was unable to run any trains in January, and it is certain that all railway traffic will be abandoned utnil spring opens. The intense cold, reaching 38 degrees below zero, has made matters still more serious, the whole island having been for four weeks in a state of natural blockade by ice. Every bay is frozen over sufficiently to drive horses from side to side, a state unknown for 100 years.

The coastal service has collapsed and sealing steamships are powerless to carry food and coal to sections, suffering from the hardest deprivations. The steamships Prospero, Diana and Eagle, carrying foodstuffs north, are frozen in off Fogo, and will be unable to prosecute the seal fishery this year. This means that only seven ships will endeavor to face the Arctic floe. Sealing crews must walk from the northern districts to St. John's, distances ranging from 120 to 200 miles. A serious coal shortage intensifies the situation. Food shortage is so great in the lumber camps that horses have been killed for want of food, trains being snowbound.

The railway problem is the most serious the new government must face. The railway has run down, it lacks rolling stock and motive power, and only the expenditure of many millions can remedy the situation. Under the Reid railway contract, the Reid Newfoundland Co. is supposed to repair the line, but it is evident that it is not in financial position to do so, the railway, it contends, being a losing concern. A government expenditure of $10,000,000 to repair the railway will place a heavy financial burden on the country.

To ease the situation the government has invited tenders for four steamships for the north and west coasts, and the press urges that the present bay service be doubled.

The ice blockade had seriously interfered with the export of fish to the Mediterranean, and fish exporters fear that the half million quintals of fish yet unshipped will reach Latin countries too late for the Lenten season, in which case a serious slump in prices may result.

## Among the Express Companies.

The Canadian National Ex. Co. has opened offices at Neuville and Cap Rouge, Que., and Cronyn, Ont.

H. A. Fairborne, heretofore at Winnipeg, has been appointed agent, Dominion Ex. Co., Portage la Prairie, Man., vice A. W. Hodgson, transferred.

A. W. Hodgson, heretofore agent, Dominion Ex. Co., Portage la Prairie, Man., has been appointed agent, same company, Maple Creek, Sask., vice R. Fennell, given leave of absence on account of ill health.

The Canadian Ex. Co. has granted increases in wages to its employes, ranging from 10% to 20%, effective from Feb. 7. The negotiations between the company and the employes were conducted by the Canadian Brotherhood of Railway Employes, and it is stated that the agreement affects indoor clerks as well as outdoor employes.

The G.T.R. has been directed by the Board of Railway Commissioners' order 29,355, Feb. 9, to construct a building, at least 75 x 30 ft., at a point 80 ft. west of the station at West Toronto, Ont., for the Canadian Ex. Co. A sheltered platform, at least 30 ft. wide is to be provided at the east end of the building, for empty trucks, and the work completed by Aug. 31.

## Telegraph, Telephone and Cable Matters.

John Stanton, Agent, Great North Western Telegraph Co., Port Dalhousie, Ont., for about 30 years, died there, Feb. 13, aged 69.

Representatives of Canadian telegraph employes will, it is announced, meet in Winnipeg during March, to revise and standardize wage agreements.

The Great North Western Telegraph Co. has closed its offices at Pokemouche, N.B.; Ameson, and Bala, Ont.; and Victoria Beach Man., and has opened offices at Kabina and Savoff, Ont.

Glyn Osler, Troonto, and G. D. Milne, New York, have been elected directors, Bell Telephone Co. of Canada, succeeding the late . A. Lash, and the late N. C. Kingsbury, respectively.

The new cable line connecting Santos and Rio de Janeiro, Brazil, with the cable system at Montevideo and Buenos Aires, thus providing direct communication between the United States and Brazil, will be in operation about March 20.

The following transfers in the Pacific Cable Board's staff have been announced: H. Baxendale, from Sydney, New South Wales, to Bamfield, B.C.; R. S. M. McCombie, from Bamfield, B.C., to Fanning Island; T. F. Price, from Halifax, N.S., to Auckland, New Zealand, and H. K. Balcombe, from Montreal to Calgary, Alta.

A further development in the possibilities of commercial wireless telephone business, took place early in February, when W. Marconi, G.C.V.O., spoke between London and Canada by that system. He is reported to have stated that conversations across the Atlantic, will be more or less common in the near future, at a cost of not more than 24c for one minute.

The Mackay Companies' annual meeting was held Feb. 16, when it was reported that notwithstanding all the troubles due to the war, and to government operation, the gross receipts of the ocean and land line systems since the return of the properties to the companies' control on Aug. 1, 1919, have steadily increased, and the net profit is satisfactory. Sir Vincent Meredith, President, Bank of Montreal, resigned as one of the trustees, the vacancy not being filled.

The Farmers' Telephone Co., Hartland, N.B., at its annual meeting recently, passed its annual dividend, "on account of the extraordinary advance in the cost of supplies and operating expenses, without corresponding increases in rentals and tolls." It was announced that in order to keep the property in the present hands, additional capital would have to be forthcoming, and that rentals must be increased, in accordance with the increases in the cost of operating. It was also hinted that the company may pass under the New Brunswick Telephone Co.'s control.

# Electric Railway Department

## Increases in Electric Railway Freight and Passenger Rates.

British Columbia Electric Ry.—The Board of Railway Commissioners issued order 29,237, Jan. 10, dismissing complaint by Broadview Ratepayers' Association, Burnaby, B.C., against fares charged by B.C.E.R. in Burnaby district. Victoria City Council has applied to the B.C. Legislature for an act to amend its act of incorporation in various details. One of the sections of the bill provides for the passing of regulations by the city council as to jitney traffic, which would have the effect of prohibiting it within certain areas. The introduction of this section is the result of an understanding arrived at with the British Columbia Electric Ry., as a preliminary to an agreement for an increase of fares on the city lines. The proposed new contract between the city and the company is reported to contain the following sections: The company shall put into effect a fare schedule making the regular fare on all lines 6c with transfer privileges; 6 tickets being sold for 35c; special tickets for children under 12, at all hours, and for school children, during school hours, to cost 25c for strip of 10; children under 5 being carried free of charge. The same rates for electric lights to be in force in Victoria as in Vancouver. This would probably make the rate per kilowatt 6c, abolish meter rent and make the minimum per month 50c. That the company undertake to maintain the strip of roadway between the tracks within 18 in. of both sides of the rails.

Calgary Municipal Ry.—The Calgary, Alta., City Council's wage committee is reported to have recommended, after a consultation with representatives of employes of the various departments, the granting of increases in wages, estimated to amount to $225,000. City Commissioner Graves is reported to have expressed the fear that these increases cannot be met without increasing the fares on the Calgary Municipal Ry., and the rates charged for other public utilities. The rate of wages recommended to be paid the motormen is reported to be 72½c an hour. The present rate is 65c and the men asked 75c.

London and Port Stanley Ry.—A London, Ont., press dispatch stated recently that the L. & P.S.R. management had served the required six months notice on the Michigan Central Rd. that rates for hauling the latter's freight and passenger traffic between London and St. Thomas must be advanced next summer, it being claimed that the L. & P.S.R. is losing money on the Michigan Central business, because of the sharp advance in operating costs since the agreement was made in 1914, and that provision is made for rate adjustments in five-year periods, and for arbitration by the Board of Railway Commissioners in the event of failure to agree.

We were officially advised by the L. & P.S.R. management Feb. 20, that no such notice had been served, that under the agreement, it is impossible to advance rates for hauling freight next summer and that passenger rates are not controlled by the agreement.

Montreal and Southern Counties Ry.—Application has been made recently to the Board of Railway Commissioners for an increase of 20% in the commutation fares between points on the Montreal and Southern Counties Ry. and Montreal. Following is a comparison between the present rates and those for which approval is asked:

| | Present. | Proposed. |
|---|---|---|
| 55 trip books | $3.15 | $3.80 |
| 46 trip books | 2.65 | 3.20 |
| 10 trip slips | 85 | 1.00 |

The company gave the following facts in support of its application. The financial results of the company's operations between 1914 and 1917 are set out in the board's judgment of July 10, 1918. The results of operations during 1918 and the first 10 months of 1919, are as follows:

| | Jan. to June, 1918 | July to Dec., 1918 |
|---|---|---|
| Gross revenue | $144,702.78 | $180,290.43 |
| Operating expenses (including rentals) | 168,173.81 | 160,442.67 |
| Taxes | 2,700.00 | 3,400.00 |
| Interest on unfunded debt at 5% | 32,600.97 | 20,584.60 |
| | Jan. to June, 1919 | July to Oct., 1919 |
| Gross revenue | $183,907.65 | $143,368.94 |
| Operating expenses (including rentals) | 179,509.34 | 131,528.82 |
| Taxes | 4,300.00 | 4,000.00 |
| Interest on unfunded debt at 5% | 38,463.76 | 25,165.36 |
| Deficit | 38,365.45 | 17,325.24 |

The advances made to the company by the G.T.R. Co. for capital expenditure up to June 30, 1919, amounted to $1,534,827.74. The increased rates authorized by the board's judgment above referred to became effective Aug. 11, 1918, and the total passenger revenue for the year ended June 30, 1919, was $313,787. This figure, however, includes revenue for July and the first part of August before the increase became effective, amounting to $45,540. The increase, therefore, is included in the balance of the total receipts for the year, viz: $268,247.

The road has been properly and carefully operated and its affairs has been administered with a due regard for economy. The increase in operating expenses, evidenced by the above figures, is largely due to the increased wages which it has been necessary for the company to pay its trainmen. The following are the rates of pay for trainmen, in effect July 1, 1918; Oct. 1, 1918, and Aug. 1, 1919, in cents per hour:

| Year | July 1, 1918 | Oct. 1, 1918 | Aug. 1, 1919 |
|---|---|---|---|
| 1 | 28—30 | 30—32 | 37—38 |
| 2 | 29—31 | 31—33 | 39—40 |
| 3 | 29—31 | 31—33 | 42—44 |
| 4 | 30—32 | 32—34 | 44—46 |
| 5 | 30—32 | 32—34 | 46—48 |
| 6 | 31—33 | 33—35 | |
| 7 | 31—33 | 33—36 | |
| 8 | 33—35 | 35—37 | |
| 9 | 33—35 | 35—37 | |
| 10 | 35—37 | 37—39 | |

The increases granted on Oct, 1, 1918, to shopmen, substation operators, station agents, trackmen, linemen, supervisors, dispatchers, and office forces, as well as to trainmen, produced an increase of 26% over the wages paid in 1917, and for 9 months ended June 30, 1919, amounted to $32,917. The wage schedule effective Aug. 1, 1919, entails an increase of 30% over the rates previously in force, and as the amount paid for wages for the year ended June 30, 1919, was $161,139.82, the increase will amount to $48,341 a year.

The total passenger revenue for the year ended June 30, 1919, was $313,787 on which a 20% increase would amount to $62,757, assuming that the same traffic would continue. The proposed increase probably could not be made effective before Jan. 1, 1920. The proportion of this, which could be collected during the present fiscal year would not exceed $30,000. The applicant's present maximum mileage rate is 2.875c a mile, whereas steam roads, operating in the same territory, have a maximum rate of 3.45c a mile, except the Quebec, Montreal & Southern Ry., which has recently been authorized to charge 4c a mile. The results of the applicant company's financial operations show that upon the present rates charged it has been unable to pay the interest on its fixed charges, to say nothing of earning any return upon the amount invested in the road.

The New Brunswick Power Co., owning the electric railway and gas and electric light and power plants in St. John, N.B., is applying to the New Brunswick Legislature for power to vary its rates for electric, gas and railway service to meet changes in their cost to make its charter conform to the recommendations of the Currier commission, and to give the company further relief. The Currier commission sat in the early part of 1919, and presented a report, a summary of which was given in Canadian Railway and Marine World for May, 1919, pg. 269. The legislature passed an act bringing the report into effect, provision being made for a reference to the N.B. Supreme Court as to the justice of the award. The court's decision has not yet been given.

Ottawa Electric Ry.—The arguments before the Supreme Court of Canada upon the three questions submitted by the court in the appeal to it on the pro-

### Canadian Electric Railway Association.

Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.

Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.

President, A. Gaboury, Superintendent, Montreal Tramways Co.

Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

Executive Committee, The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

Official Organ—Canadian Railway and Marine World, Toronto.

posed raising of fares on the Britannia lines, were concluded Feb. 5. The company desired to put an increased schedule of fares in operation on its suburban line to Britannia, and being refused permission by the Board of Railway Commissioners, an appeal was taken to the Supreme Court. The court heard arguments at the end of 1919, and subsequently submitted three questions upon which it invited further argument. The parties to the appeal were Nepean Tp., the City of Ottawa and the Ottawa Electric Ry.

**Toronto Suburban Ry.** — Standard Freight Tariff C.R.C. 1, has been approved by the Board of Railway Commissioners, by order 29,293, dated Jan. 23. It is governed by Canadian Freight Classification on file with the Board of Railway Commissioners, and subject to the general rules and conditions of carriage published by the company; also by the car service, warehouse storage, switching rates and regulations in effect at shipping point and destination, and published in tariffs relating thereto, which are on file with the Board of Railway Commissioners.

| Distances, miles. | | Classes in cents per 100 lb. | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Not Over | Over | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 25 | | 24 | 21 | 18 | 15 | 12 | 11 | 9 | 10 | 10 | 7½ | |
| 30 | 25 | 25½ | 23 | 20 | 16½ | 13 | 11½ | 10 | 11½ | 10 | 9 | |
| 35 | 30 | 29 | 25½ | 22 | 19 | 14½ | 13 | 10 | 11½ | 11½ | 9 | |
| 40 | 35 | 32 | 27½ | 24½ | 20 | 16½ | 14½ | 11½ | 13 | 11½ | 10 | |
| 45 | 40 | 34½ | 30 | 25½ | 22 | 17½ | 15½ | 11½ | 13 | 11½ | 10 | |
| 50 | 45 | 34½ | 30 | 25½ | 22 | 17½ | 15½ | 13 | 14½ | 13 | 10 | |
| 55 | 50 | 37½ | 33 | 29 | 23 | 19 | 17½ | 14½ | 14½ | 14½ | 11½ | |
| 60 | 55 | 37½ | 33 | 29 | 23 | 19 | 17½ | 14½ | 14½ | 14½ | 11½ | |
| 65 | 60 | 40 | 36½ | 30 | 25½ | 20 | 19 | 15½ | 15½ | 15½ | 13 | |
| 70 | 65 | 40 | 36½ | 30 | 25½ | 20 | 19 | 15½ | 17½ | 15½ | 13 | |
| 75 | 70 | 43 | 37½ | 33 | 27½ | 22 | 20 | 17½ | 17½ | 15½ | 14½ | |

The order was published in full in Canadian Railway and Marine World for February, pg. 71.

**The Toronto and York Radial Ry. Co.** —"On all railways subject to the jurisdiction of the board," submitted on Jan. 26 to the Ontario Railway and Municipal Board for its approval, Supplement 13 to Canadian Freight Classification 16.

**United States Advances**—The Illinois, U.S., Committee of Public Utilities is reported to have given out a statement, Feb. 16, that street car fares have been increased in 460 cities throughout the United States. In 59 cities the fare had been increased to 10c. As an indication of the financial plight of the electric railway industry, the committee asserted that in 1919 forty-eight companies, with a total of 3,781 miles of track, went into the hands of receivers, while during the past three years 98 companies, representing approximately one-sixth of the mileage in the U.S., had become involved in bankruptcy courts.

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Henry Ford is reported in discussing his new gasoline street car, to have said that practical fuel can be obtained by extracting alcohol from straw or fruit, in case of oil shortage.

# Ottawa Electric Railway's Proposal for Service at cost.

Some information about this matter was given in Canadian Railway and Marine World for Feb. on pg. 79, in the form of a statement issued by the company's Superintendent, F. D. Burpee. Following is a copy of the letter sent to the Mayor and Board of Control of Ottawa, by the company:—"The franchise held by the Ottawa Electric Ry. Co. to operate a street railway in Ottawa expires in 1923, when the city will have the option of buying the property and operating the street railway, or of granting the company an extension of franchise. The company needs no spur of public demand to realize what Ottawa's growth necessitates in the way of increased street railway transportation. During the rush hours the cars are crowded, and, as the population of Ottawa is steadily increasing, this crowding can only be relieved by adding to the rolling stock and extending the system. As far as the company knows today, it goes out of business in 1923. It is therefore, not reasonable or advisable to make large capital expenditures upon extensions, rolling stock, car barns, additional power house equipment, etc., without knowledge whether an extension of the franchise is to be granted or the systems is to be taken over and operated by the city.

"There exists a simple and equitable plan now in operation in many cities, including Montreal and St. John, N.B., which, if applied to Ottawa, would afford almost immediate relief from existing conditions, and would also leave the city free to purchase the street railway properties upon the expiration of the franchise in 1923, or at any time thereafter. This plan is known as service at cost, and provides for the operation of a street railway, or any public utility, at the actual cost of producing the service. Included in that cost is a fair rate of interest on the actual value of the property. The method of ascertaining the value of the property under the service at cost plan is exactly the same as that provided for in the agreement between the Ottawa company and the city, if the latter assumes possession of the system at the expiration of the franchise, viz., by arbitration. To purchase the street railway the city would borrow the amount fixed by the board of arbitration as being the actual value of the property, and would pay for the money borrowed a rate of interest, depending upon the price which the city's bonds could be sold for at the time.

"The service at cost plan provides that the city shall become a partner of the company without any capital expenditure upon the part of the city. The plan provides for commissioners to be appointed by the city to act as joint controllers of the street railway. The commissioners shall have no financial interest in the company, and must be free from the influence of municipal politics. They shall have access to the company's books at all times, and the company cannot make expenditures without their authority. The plan further provides that if, at the end of year, the revenue has been greater than the cost of operation, the surplus shall be set aside to provide a fund which, in the course of time, will cause a decrease in the rate of fares. If extensions are made that are unprofitable, or if greater service is called for than is justified, and the receipts are therefore inadequate to pay the costs of operation, then the fares are increased for the following year sufficiently to absorb the deficit. The plan therefore, provides a possibly fluctuating fare dependent upon the costs of operation; and it rests with the city through its commissioners to decide what those costs shall be. In other words, the cost to the riding public is based upon the actual cost of providing the service, no more and no less.

"The adoption of the plan in Ottawa would mean that instead of waiting four years, during which time the congestion on the cars will get steadily worse, the company could at once provide such additional rolling stock for the existing lines, and such extensions as the city considers necessary. The plan would ensure joint control by the city, through its commissioners, and the company, of the street railway system, without any investment by the city. The operation of the street railway would be continued under its present management, and, most important of all, the public would be assured of the best service for the least money. The company is ready to discuss this matter with the city's representatives, and respectfully suggests that no harm can come from a careful and immediate investigation of the suggested plan, and that no good can come from postponing its consideration."

The city council decided on Feb. 3 that a letter be sent to the company on the following lines:—The council is not prepared to enter into any service at cost scheme such as suggested and, therefore considers it unnecessary to discuss general principles of this method of operating a railway. The council is disposed to entertain any reasonable proposition by which the O.E.R. Co. may be secured against loss due to any fall in prices in new equipment, plant or road bed acquired or constructed between now and the expiration of its franchise in 1923. That with a view to reaching a basis of discussion, the company be asked to forward a statement showing what new equipment or plant it deems necessary in order to ensure the efficient operation of the railway for the remainder of its franchise, with an approximate estimate as to the cost of the different kinds of equipment or plant. That the board of control be authorized, if it seems advisable, to meet representatives of the company with a view to discussing arrangements as to new equipment and plant.

As it is quite evident that the present city council is not in favor of service at cost, the company will probably drop the matter, at least as far as this year is concerned, but it continues to point out, through its weekly O.E.R. News, which is distributed on its cars, the excellent features which it claims for the plan.

The Ottawa City Council on Feb. 23 approved a draft bill to be introduced in the Ontario Legislature to enable the city to take over, extend and operate the Ottawa Electric Ry. system, and to provide for its management. The bill provides that the council may at any time, after the passing of the act, pass a by-law establishing a commission under the

name of the Ottawa City Railway Commission. The council also resolved that it is in favor of the city taking over the Ottawa Electric Ry. in 1923, under the terms of the agreement, and that notice be given the company in ample time to carry this into effect."

## The Hydro Electric Power Commission of Ontario's Railway Projects, Etc.

In the voting by York Township ratepayers on Jan. 17 on a bylaw to raise $381,587 towards the purchase completion and equipment of the Toronto Eastern Ry., from Bowmanville to Toronto, while there were 252 votes for and only 10 against, the total number of votes cast did not bear the proportion to the total number of voters required by the act. The council, when giving the bylaw its final reading on Feb. 17, was advised by the Hydro Electric Power Commission of Ontario that it is proposed to apply to the Ontario Legislature to amend the act of 1914, which requires bylaws granting aid to railways to be approved, not only by a majority of votes cast, but that one-third of the total electorate elegible must vote, so as to permit such bylaws to be carried by a majority of votes cast.

During February several meetings were held in the Niagara Pennisula to discuss the linking up of the whole of the electric railways in that area. This would involve taking over Niagara, St. Catharines and Toronto Ry. from the Canadian National Rys., and linking it up with the same local lines in the vicinity of Welland, on the one hand, and the taking over of the Dominion Power and Transmission Co.'s lines in Hamilton and vicinity. Negotiations are reported to have been in progress in connection with the two larger lines for some time past, and according to a recent statement in Hamilton, action is expected to be taken in regard to one or both during March.

Guelph, Ont., City Council is reported to have signed the agreement for the transfer of the Guelph Radial Ry. to the Hydro Electric Power Commission of Ontario, the transfer to be made on July 1. The commission is to put the line in first class condition and to provide a 10 minute service. The cost of the work is estimated at $150,000.

The Sandwich, Windsor and Amherstburg Ry. will, it is reported, be taken over in the near future by the Hydro Electric Power Commission of Ontario under the agreement approved of recently.

The survey of the Sarnia, Ont., St. Ry. by the Hydro Electric Power Commission of Ontario's engineers, was reported on Feb. 13, to be completed. The report is being prepared and, it is expected that it will be presented to the Sarnia City Council at an early date.

**Votes on Hydro Radial Railway Bylaws**—The Hydro Electric Power Commission of Ontario has announced that it will ask, at the Ontario Legislature's forthcoming session for an amendment to the Hydro Radial Railway Act, to provide that a majority of the votes polled, and not a majority of the possible votes, will carry any bylaw relating to the construction of radial railways under the commission's scheme.

# Electric Railway Employes' Wages, Working Conditions, Etc.

**Hamilton St. Ry.**—A press report states that the company's employes have asked that a new wage schedule be put in operation upon the expiration of the present agreement in April. The present schedule has a minimum of 34c an hour and a maximum of 41c. The new demand is as follows: First six months, 50c; second six months, 55c; second year, 60c; and third year and over 65c per hour. Men operating snowplows and sweepers 5c an hour extra, and free overalls. They also want one week holiday a year, with full pay. All employes to operate on an 8-hour day straight, no runs to be less than 8 hours daily.

**Niagara, St. Catharines and Toronto Ry.** (Canadian National Rys. System—The board of conciliation and investigation which was appointed by the Labor Department in connection with the dispute between the Niagara, St. Catharines and Toronto Ry. and its conductors, motormen, barn, shop and power house men and members of Amalgamated Association of Street and Electric Railway Employes of America Division 846 and which consisted of County Judge C. C. Snider, Hamilton, Ont., Chairman; J. D. Kelley, K.C., Ottawa, representing the company, and Jno. McAninch, representing the men, presented a unanimous report to which was attached a schedule of wages and rules drafted as an agreement to be signed by both parties to the dispute. The articles in the draft agreement submitted by the employes which were not included in the schedule were omitted on the ground that they were "of a character as should be in the control of the management of the employer."

The following are the principal provisions of the draft agreement:—Nine hours to constitute a day's work for all passenger trainmen, to be completed within 11 consecutive hours. Overtime to be paid 15c an hour for first hour, or part thereof, over 9 hours, and at time and a half for all time served over 10 hours. The rates of wages to be paid passenger trainmen per hour are as follows, to which we have added a column showing the rates paid hitherto:

| | New | Old |
|---|---|---|
| First six months | 36c | 39c |
| Second six months | 39c | 39c |
| Second year | 41c | 41c |
| Third year and afterwards | 45c | ..... |
| Third year | | 43c |
| Fourth year and afterwards | | 45c |

A bonus of 2c an hour to be paid after 10 years continuous service. Conductors or motormen to be paid 25c a day, or any part of day, extra for training a student. The company to pay half cost of uniform for each trainman who has been in its employ for not less than a year and to provide one uniform a year if required for each trainman thereafter paying one-half its cost. Cap to be supplied free by company.

The hours of trainmen employed in freight service shall be a minimum of 10 hours a day, 6 days a week, to be completed in the least number of hours possible. On week day wages of freight conductors and freight locomotive men during the first, second and third years of their service shall be 47c; after the third year, 48c, after 10 years of continuous service a bonus of 2c an hour will be allowed Brakemen and polemen's wages shall be for first 6 months, 41c, and after first year, 43c. Freight trainmen will receive extra pay at rate of 15c an hour for the first hour, or part of an hour, after 10 hours service, and time and a half for all time after 11 hours service. All freight motors without cars shall be operated by at least 2 freight trainmen. The crews of all freight trains consisting of one or more cars, in addition to the motor, shall consist of not less than three men, and a fourth man shall be supplied in other cases where the freight is heavy enough to require it. Freight train conductors and locomotive shall receive 25c a day, or any part of a day extra, for training a student. The company will pay for meals of all trainmen who are kept out over 10 hours on snowplow work.

Hours of barn and shop men to be the same as existing heretofore. Time and a half to be paid for all overtime, including all time worked on Sundays and legal holidays when they shall be paid double time.

Baggagemen, watchmen and ticket agents to receive $100 a month, hours remaining as heretofore. Substation operators to be increased $5 a month. Linemen to be paid 45c to 50c an hour; groundmen, 37c to 42½c an hour, hours remaining as heretofore. Time and a half for overtime. Company to supply rubber boots and gloves for line cars. Towerman to be paid, 1st class, $80 a month; 2nd class, $90 a month, hours as heretofore. Section foremen, $100 to $110 a month; section men, $35 to $40 a month, hours as heretofore. Time and a half for overtime.

All employes to get double time for Christmas Day and Labor Day. The agreement to be in force from Aug. 31, 1919 to Feb. 1, 1921.

We have been informed that some mistakes were made in some figures in the board's report as sent to the Labor Department, but up to Feb. 25, no corrections had been received by the department.

A St. Catharines press dispatch of Feb. 26 said the men had decided not to accept the board's award, and had voted to strike, if an appeal to the Minister of Labor should not be successful.

**Grand Valley Ry. Financing**—The investigation by the official referee at Toronto into the Standard Reliance Mortgage Corporation's affairs, has again brought into prominence the financing of the old Grand Valley Ry. from Brantford to Galt, Ont. The official liquidator stated that investigation had shown that the amount shown by C. S. Dinnick's books to have been invested in Grand Valley Ry. securities was, as a matter of fact so invested. The transaction, it was brought out, involved over $600,000 in cash and securities belonging to the Standard Reliance Mortgage Corporation, being put in the project eventually to be written off as a complete loss. The loss was transferred to the Dovercourt Land Co., because Mr. Dinnick said the Standard Reliance could not afford to show such a loss on its own books.

**The Nova Scotia Power Commission** has been authorized to proceed with the development of an 8,000 h.p. unit at Margarets Bay, about 20 miles from Halifax. K. H. Smith is the engineer in charge.

# Toronto Railway Co's Annual Report and Meeting.

Following are extracts from the report for the calendar year, 1919, presented at the annual meeting in Toronto on Feb. 4:

The gross revenue increased over 1918 by $708,593.01, while there remained only $13,274.49 of such increase to be carried forward. The higher wages paid to employes and increased cost of materials, account for this very small balance.

| | | |
|---|---|---|
| Gross earnings were | | $7,234,895.38 |
| Charges for operating, maintenance, etc. | | 5,655,658.57 |
| Net balance from operation | | $1,579,236.81 |
| Distributed as follows:— | | |
| Bond interest, etc. | $128,432.85 | |
| War and Ontario Government taxes | 39,059.51 | |
| | | $ 167,492.36 |
| Payments to city— | | |
| Percentage on earnings | $1,152,515.43 | |
| Pavement charges | 98,793.60 | |
| General taxes | 147,160.93 | |
| | | 1,398,469.96 |
| Balance carried forward | | 13,274.49 |
| | | $1,579,236.81 |

The gross earnings were $7,234,985.38, an increase of $708,593.01 over 1918. The payments to the city were $1,398,469.96, an increase of $97,203.78 over 1918.

The agreement with the employes expired in June, 1919, when new demands were submitted which the company could not grant, and negotiations for an amicable settlement being fruitless, the company applied for a conciliation board under the Labor Act. The board was appointed by the government, but while it was sitting the men resorted to a strike which continued for 12 days. During the strike, the conciliation board made unsuccessful efforts to effect a settlement and the Ontario Railway and Municipal Board, under its powers, took over the property, making two offers to the men, both of which were refused. The conciliation board then made an interim report, suggesting an increase in wages, and changes in operating conditions, contingent upon an increase in fare being granted by the city. The Ontario Railway and Municipal Board thereupon made an offer to the men of these rates of wages and conditions, but stated that they had no power to change rates of fare. The men accepted the offer and returned to work. There was then no course open to the company but to carry out the undertaking of the Ontario Railway and Municipal Board. The obligations imposed upon the company by the action of the conciliation board and the Ontario Railway and Municipal Board involved an increase of 16c an hour in wages, together with a reduction in the working day to 8 hours; overtime after 8½ hours and special rates for Sundays and holidays; the cost to the company amounting to approximately $1,500,000 a year. We have paid the increased rates for only half the current year, or, to be exact, from July 4, 1919, when, the strike ended, the men returned to work. For 1920 the increases will have to be paid for the full year.

The reason why dividends have not been declared this year is due entirely to the abnormal increase in wages during the past few years, combined with a rapidly increasing cost of materials. In 1916 we were paying a maximum rate of wages of 27½c an hour. In 1917 an arbitration board increased this rate to 37c an hour; and before the agreement had expired, the men sought a conciliation board and secured a war bonus of 2c an hour, bringing the rate up to 39c. In 1919, under the action of the conciliation board and the Ontario Railway and Municipal Board, the maximum rate was fixed at 55c and the length of the working day reduced from 10 to 8 hours, with provision for overtime rates as above mentioned. Thus, in three years, the rates of wages of employes have doubled, making the additional annual cost to the company approximately $2,500,000. During the same period, materials have increased in price from 100 to 300%. In consequence, the money that would otherwise have gone towards improvement of the property and into dividends, has been swallowed up by increases in wages and increased cost of materials. And it must be remembered the company has had to face these expenditures with revenues drawn from rates of fare fixed 28 years ago, the average fare being 3.9c per revenue passenger, the lowest rate of fare on the continent for a city of Toronto's size. With the object of meeting the increase in wages, the company applied to the city council for permission to increase the fare, pointing out that about 400 roads in North America, many of them with agreements similar to ours, had obtained increases in rates of fare, but the city refused to alter the agreement. Your directors also approached the Ontario Government, seeking relief, but secured no assistance. The company then offered to make an immediate sale of the property to the city, upon the terms set forth in the franchise agreement for sale in Sept. 1, 1921, but council would not favorably consider the offer.

The ninth drawing of the company's currency and sterling bonds, under the terms of the mortgage deed, dated Sept. 1, 1892, took place on June 24. Under said terms the company draws annually during the last 10 years of its franchise, 5% of the amount of bonds issued, thus reducing, during the 10 years mentioned, the outstanding bonds to 50% of the original issue, and all bonds so drawn are to be redeemed on or after Aug. 31, following the date of drawing, from which date no interest is payable on bonds so drawn. There has been drawn to date a total of $2,047,413.30.

**Revenue Statement, Year Ended Dec. 31, 1919.**

| | | |
|---|---|---|
| Gross earnings | | $7,234,895.38 |
| Operating, maintenance, etc. | $5,655,658.57 | |
| Interest on bonds, etc. | 128,432.85 | |
| Percentage on earnings | 1,152,515.43 | |
| Pavement, taxes | 285,014.04 | |
| | | 7,221,620.89 |
| | | $ 13,274.49 |

**Profit and Loss Account, Dec. 31, 1919.**

| | |
|---|---|
| Balance from 1918 (all re-invested in the company's property) | $5,565,252.67 |
| Surplus earnings after payment of all expenses, interest, taxes, etc. | 13,274.49 |
| | $5,578,527.16 |

**Comparative Statement, 1919-1918.**

| | 1919 | 1918 |
|---|---|---|
| Gross income | $7,234,895.38 | $6,526,302.37 |
| Operating, maintenance, etc. | 5,655,658.57 | 4,509,651.33 |
| Net earnings | 1,579,236.81 | 2,016,651.04 |
| Passengers carried | 182,377,494 | 166,510,326 |
| Transfers | 70,446,128 | 63,176,397 |
| Percentage of charges, etc., to passenger earnings | 79.5 | 71.7 |

At the annual meeting on Feb. 4, the President, in response to a question as to whether the company had discontinued attempts to secure an advance in fares, said that nothing had been done for several months, and seeing that the end of the franchise was so near, he did not think there was much possibility of getting any relief.

H. H. Pitts, of Ottawa, one of the directors, in commenting on the report, mentioned the difficulties encountered during the year, in regard to labor and high cost of materials, and complained of the refusal to the company of the right to increase fares, which he considered was unfair and immoral. He spoke strongly against the present sentiment favoring the municipalization of public utilities, and considered that there would be a change on this question before long. He mentioned that a year ago he said the Toronto city hall officials were "a lot of fakers" and he would not take back a single word of it.

The directors were re-elected as follows: Sir William Mackenzie, President; Senator F. Nicholls, Vice President; Sir Henry M. Pellatt; Senator C. P. Beaubien, E. R. Wood, G. H. Smithers, H. Mackay, K.C., H. H. Pitts and F. W. Ross.

## The Manitoba Public Utilities Act's Validity Questioned.

The question of the validity of the Manitoba Public Utilities Act has been raised in an action before Justice Curran in the Manitoba High Court. The Winnipeg City Council appealed to the Court to set aside the Public Utilities Commissioner's interim order fixing the fare to be charged by the Winnipeg Electric Ry. at 6c, until such time as a final order was made. Argument was begun Jan. 26, when the city's counsel aruged that the commission had no power to raise fares, and that the whole Public Utilities Act was unconstitutional. The Deputy Attorney General argued that all the workings of the act were at stake, whereupon the city's counsel asked that the arguments be limited to the case of the electric railway, but Justice Curran held that the whole of the acts brought under the Public Utilities Act should be included. The company's counsel asked for the dismissal of the action on the ground that the order appealed against was merely an interim one; that sec. 29 of the act provides that no action of the commission can be questioned by an injunction action, and that sec. 70 prescribes the course to be taken to have the commissioner's acts reviewed. The arguments were continued on subsequent days, and a large amount of documentary evidence was put in, covering the whole period lapsed since the appointment of the commissioner in 1912. In the course of the putting in of the documents the judge remarked that the carrying out of the orders applied for by the city had caused the expenditure by the company of very large sums and had been a big factor in forcing the company to seek higher fares. On another occasion the judge intimated that if he upheld the city's contention he would not dream of interfering with the present rate of fares until time had been given to enable the company to carry the case to a higher court. Judgment has not yet been announced.

# Electric Railway Projects, Construction, Betterments, Etc.

The British Columbia Electric Ry. is, we are officially advised, preparing to spend more than $1,000,000 on extensions and improvements around Vancouver. Among the extensions planned is the double tracking of Hastings St. East, in addition to the extension of Granville St. south to Kerrisdale, which is now under way. The latter line will be in operation in March. Changes in the electrical equipment along the Fraser Valley line will cost $500,000, and $200,000 more is proposed to be spent on the equipment of other interurban lines. These expenditures are necessary, to take care of increased population and increased travel.

A press report states that Vancouver City Council is asking for the construction of a side track where cars could await the rush from the Coughlan ship yards every afternoon; the extension of the Broadway West line; the extension of the Nanaimo Road line to 22nd Ave., and the laying of tracks over the Georgia St. viaduct.

A press report states that the company will extend its Mount Tolmie line on Vancouver Island, down the hill, provided Saanich Municipal Council will regrade Mount Tolmie Road, eliminate the jitney traffic, and authorize the charging of a 6c fare to the terminus at Bay Road intersection. The proposition is under consideration by the council. (Feb., pg. 81).

Calgary Municipal Ry.—A press report states that a contract has been let for the supply of 8 tons of railway bolts at $1,047.20, and that no tenders were submitted for the supply of track ties. (Feb., pg. 81).

Grand River Ry.—We are officially advised in reference to the proposed sale of the company's steam plant at Preston, Ont., that this power unit is now obsolete for the operations of the company's lines. This plant has not been used since 1911. The company has under consideration the question of the provision of a modern steam plant, but no definite decision has yet been reached in regard to it. (Jan., pg. 34).

Hamilton St. Ry.—The Hamilton, Ont., City Council's street railway committee is, a press report states, considering the advisability of asking the company to lay new tracks on its York St. line. (Sept., 1919, pg. 501).

Hull Electric Co.—A press report states that the alterations of the company's substation on Main St., Hull, Que., at a cost of $30,000 will be completed shortly. Two new transformers, each with a capacity of 1,500 h.p., are being installed, increasing the power available from 200 to 300 h.p. The rearrangement is being made to provide for additional power, better facilities for the handling of railway loads, and improved light and power service. (June, 1919, pg. 324).

Kitchener and Waterloo St. Ry.—A press report states that the Dominion Tire Co. has asked the Kitchener Light Commissioners to extend the Kitchener and Waterloo St. Ry. to its plant, and that plans and estimates are being prepared by Superintendent McIntyre. In connection with the increase of traffic between Kitchener and Waterloo, a 5 minutes service is recommended, to make which possible it is said that a second track will be required from Union St. to William St., Waterloo.

London and Port Stanley Ry.—About three years ago the London, Ont., City Council voted $100,000 to the London Railway Commission to build a grain elevator at Port Stanley, the terminus of the line. Owing to war conditions, the work was not gone on with, and it is now proposed to undertake it. An elevator with a capacity of 20,000 bush. an hour, would, it is estimated, cost $200,000 as against the original estimate of $100,000. A press report states that the co-operation of the municipalities and boards, trade of the district will be asked to put the matter before the Dominion Government with a view of obtaining financial aid towards the project.

A press report states that the London Railway Commission proposes to erect a slip dock at Port Stanley, at an estimated cost of $8,500. (Feb., pg. 81).

London St. Ry.—A London, Ont., City Council's committee has approved of the street paving programme for this year. It involves work on seven streets on which there are street railway tracks, on some of which, a press report, states, new track will have to be laid. (Nov., 1919, pg. 612).

Moncton Tramways, Electricity and Gas Co.—We are officially advised that the car barn and machine shop at Moncton, N.B., which were destroyed by fire Dec. 25, 1919, will be rebuilt in the spring. It is expected to put up a concrete building, but the plans have not been decided on. (Feb., pg. 81).

Montreal Tramways Co.—The Montreal Tramways Commission is reported to have had under consideration recently a plan for building a line to the top of Mount Royal to replace the disused incline railway. The proposal is to build a line from the Cote des Neiges Road to the mountain top, starting from the Shakespeare Road. These would be a 5% gradient, and a possible tunnel at the Outremont incline. The matter was left over for further consideration, and in the meanwhile engineers will prepare plans and estimates not only of the above route, but of a possible on via Guy St. (Feb., pg. 81).

New Brunswick Power Co.—The St. John, N.B., City Council is reported to have been advised that the city solicitor and council for the New Brunswick Power Co. have arranged to file briefs before the New Brunswick Public Utilities Commission, respecting the city's application for an order to compel the company to operate its main line cars down Rodney wharf. (Jan., 1919, pg. 40).

Nipissing Central Ry.—A press report of Feb. 21, states that the Liskeard, Ont., Board of Trade has been advised by the acting Chairman of the Timiskaming and Northern Ry. Commission, which operates the line, that as soon as the M. J. O'Brien interests begin the construction of the projected pulp and paper mill at North Timiskaming the railway will be extended there. The projected extension would be about 13 miles long and would run easterly from Liskeard.

The Ontario Premier was reported, Feb. 27, to have announced that an extension of about 17 miles extending from Liskeard, Ont., to the Des Quinze River Falls, Que., will be built as soon as the government receives a guarantee from the M. J. O'Brien interests that they will build a paper mill at the latter point. (Jan., pg. 34).

The Oshawa Ry. is, we are officially advised, completing 9 new sidings for the General Motors of Canada, in Oshawa, Ont. The company contemplates building about half a mile of second track on its freight line, and putting in 2 new spur tracks at the Pedlar People's plant. It also has under consideration the addition of a 500 k.w. motor generator to take care of the increased business. (Feb., pg. 81).

Ottawa Electric Ry.—Application is reported to have been made to the Hull, Que., City Council for permission to build a loop at the terminus in Hull. The present line is a stub one, on which 2 two way operated cars are run. They are the oldest cars owned by the company, and, therefore, the least reliable. Nothing can be done to improve the service to Hull, until a loop, round which the one way cars could be operated, is built. (Jan., pg. 24).

Toronto Civic Ry.—Offers for the construction of the projected St. Clair-Mount Pleasant car line, were invited to be sent in by Feb. 17, but with the exception of some bids for roadway work in connection with it, no tenders were received. Whether the city will proceed with the construction by day labor is under consideration. (Feb., pg. 81).

## Cars for Toronto Civic Railway.

The Toronto Works Department will receive tenders to March 16, for 13 double truck, double end, semi convertible electric cars, complete, with plain arch roofs, deliverd at Toronto. Following are the general dimensions:

| | |
|---|---|
| Length over body corner posts | 31 ft. 8 in. |
| Length over each platform | 7 ft. 8 in. |
| Length over bumpers | 47 ft. |
| Width at drip rail | 8 ft. 6 in. |
| Height, top of rail to top of trolley board | 11 ft. 8½ in. |
| Truck centers | 19 ft. 8 in. |
| Truck wheel base | 4 ft. 10 in. |
| Wheels, cast iron | 33 in. |
| Seating capacity | 48 |
| Motors, per car | 4 |
| Top of rail to first step | 14 in. |
| First step to platform floor | 12¼ in. |
| Platform floor to body floor | 10¼ in. |
| Weight of car body | 20,890 lb. |
| Weight of trucks | 12,750 lb. |
| Weight of electrical truck equipment | 14,360 lb. |

The motors specified are Canadian Westinghouse Co.'s type 533-T-4, to be interchangeable with those now in Toronto Civic Ry. service, and the controllers are to be type K-35, and equipped with an automotoneer. The motor driven air compressor specified is Canadian General Electric Co.'s type C.P.-27-A.

Australian Motor Bus Traffic — The Canadian Government Commercial Agent at Sydney, Australia, reports as follows: "Traffic by motor bus between Sydney and the suburbs is becoming increasingly popular and many new lines have been opened recently. The chief cause of this is the congested state of tram traffic, which is controlled by the state government, and the heavy increase in fares which has taken place recently. Many of the chassis of these vehicles are of a well known Canadian make."

# British Columbia Electric Railway Company's Annual Report

The following report for the year ended, June 30, 1919, was presented at the annual meeting in London, Eng., Feb. 3:—The following charges have been made against the revenue account for the year:—

| | | | | | | |
|---|---|---|---|---|---|---|
| Provision for depreciation, sinking fund and renewals | £154,727 | 5 | 8 | | | |
| Addition to capital amortization fund | 1,818 | 6 | 11 | | | |
| | £156,545 | 12 | 7 | | | |
| Ordinary net revenue for year from all sources, after making above deductions | £224,600 | 15 | 9 | | | |
| To which is added— | | | | | | |
| Profit on exchange in remitting earnings from Vancouver to London and moneys formerly set aside for contingencies and now no longer required for such | 138,419 | 1 | 7 | | | |
| Balance brought forward from last year | 6,085 | 0 | 11 | | | |
| | | | | £369,104 | 18 | 3 |
| Deduct— | | | | | | |
| Interest on debenture stock to June 30, 1919 | £132,447 | 4 | 10 | | | |
| Dividend paid on 5% cumulative perpetual preference stock for the year ended June 30, 1919 | 72,000 | 0 | 0 | | | |
| Interim dividend of 2½% on preferred ordinary stock stock, paid June 30, 1919 | 36,000 | 0 | 0 | | | |
| | | | | £240,447 | 4 | 10 |
| Leaving available for further distribution | | | | £128,657 | 18 | 5 |
| From this the directors have decided to recommend the payment of a final dividend on preferred ordinary stock of 2½%, making 5% for the year ended June 30, 1919 | £ 36,000 | 0 | 0 | | | |
| A dividend on deferred ordinary stock of 3% for year ended June 30, 1919 | 43,200 | 0 | 0 | | | |
| A bonus on deferred ordinary stock of 3% | 43,200 | 0 | 0 | | | |
| | | | | 122,400 | 0 | 0 |
| Leaving, to carry forward to next account | | | | £ 6,257 | 13 | 5 |

In recommending the distribution of a bonus of 3% upon the deferred ordinary stock, the directors desire to point out that it must be regarded as an exceptional distribution, and not as an indication of a similar distribution in future years. The bonus is rendered possible this year, by profit on exchange in remitting moneys from Vancouver to London, and by the appropriation of certain moneys held for contingencies, which, under the altered conditions, the directors consider may now be safely distributed. It is also possible to recommend the distribution of a dividend of 3% on the deferred ordinary stock, and in this case the directors consider that the improvement in local conditions, as reflected in the current earnings shown below, is such as to justify reasonable hope that a distribution on the deferred stock may be maintained. The net earnings for the current year, as compared with the year under review, are as follows:—

| | 1918. | 1919. |
|---|---|---|
| July | *$ 19,165 | $149,109 |
| August | 88,436 | 166,808 |
| September | 130,548 | 181,811 |
| October | 124,326 | 183,415 |
| | $362,475 | $681,143 |

*Strike in progress for 11 days during July, 1918.

In last year's report it was stated that the Province of British Columbia had introduced a bill to establish a public utilities commission, which would have an important bearing upon your company. The bill became law in March, 1919, and provided for the appointment of a single commissioner with very wide powers over public utilities. Subsequently Major J. L. Retallack was appointed commissioner. Both the terms of the act and the commissioner's decisions have shown every indication of a desire to treat your company with justice.

British Columbia is the last of the Canadian provinces to establish a public utilities commission, and such commissions exist in all the other Canadian provinces and in nearly all the United States cities. The commissioner has power under the act to regulate the rates to be charged and the services to be rendered by the company, whether such rates or services are the subject of agreement or otherwise, and to this extent the act overrides the company's franchises and agreements. The commissioner is directed, in fixing any rates to have due regard on the one hand to giving the public utility company a fair and reasonable return upon the appraised value of the company's property, and, on the other hand, to the protection of the public from rates that are excessive as being more than a fair and reasonable charge for the service rendered. The commissioner is empowered to make an appraisal of the company's property for the purpose of ascertaining the value upon which the company is entitled to earn a fair return, and in making such appraisal the act provides that he "may enquire into every fact which, in his judgment, has any bearing on that value, including the condition and value of the company's undertaking as a going concern, and the amount of money actually and reasonably expended in that undertaking in order to furnish service reasonably adequate to the requirements of the community." The act gives a right of appeal from the commissioner's decision subject to leave being first obtained from the commissioner, and in the event of his refusal, from the Lieutenant Governor in council.

There is a special clause in the act relating to the 6c fare now being charged on the Vancouver city lines. As stated in last year's report, the Vancouver City Council in July, 1918, granted the company the right to charge a 6c fare for 9 months. The Public Utilities Act was passed before this period expired and provided for the continuance of the 6c fare, subject to the company being able to satisfy the commissioner that such rate is just and reasonable. The act also provides that until such proof is furnished to the commissioner's satisfaction, the amount received by the company in excess of the 5c fare charged previously, is to be deposited in a special account in a chartered bank in Vancouver, and that if the rate should be fixed at less than 6c the excess amount is to be handed over to the Vancouver General Hospital. Owing to an amendment of the Dominion Railway Act, the company's railways passed from the jurisdiction of the Province of British Columbia and of the Public Utilities Commission to that of the Dominion of Canada and of the Dominion Board of Railway Commissioners, but it is anticipated that amending legislation will be passed early in 1920 which will place the company's railways again under the public utilities commission, and the company has joined with the local authorities in petitioning for this to be done. When this has been done it is expected that an investigation, which was commenced by the commissioner some time ago to ascertain the correct fare to be charged in Vancouver City, but which, owing to the circumstances reported above, has been temporarily adjourned, will be resumed, and that an appraisal of all the company's property on the mainland will be made.

In June, 1919, the employes of the company and of most other industries in Vancouver went on strike, not for any increased wages, or any improved conditions, but in sympathy with the general unrest which was then prevalent in labor circles throughout Canada, particularly in Winnipeg. This strike, the longest in the company's history, lasted from June 5 to 29, when the men returned to work on the old terms. The company's revenues on the mainland from its railway system were reduced to almost nothing during the 24 days that this strike lasted. In Aug., 1919, a request was received for a further increase in wages, which was submitted to arbitration, and under the arbitration award increases were granted which will cost the company a large sum. The replacing of returned men has been a task of considerable difficulty, but the management have been able to reinstate all men who returned to the company from active service.

The directors consider that the improved conditions warrant a return to the practice of paying the dividend on the 5% cumulative perpetual preference stock half-yearly as before the war, and a half year's dividend of 2½% has been declared payable on Jan. 15, 1920. The end of the war and the gradual return to normal conditions is having a good effect upon the company's revenues. In addition to the return of the men who left British Columbia for overseas service, it is stated that a large number of men who enlisted in other parts of Canada went to British Columbia on being demobilized. Whether all of these men will find immediate employment in the province it is impossible to say. At present there is a great shortage of houses in Vancouver, but comparatively little building has yet been undertaken on account of the high prices of labor and materials. The shipbuilding industry, which employed several thousands of men during the last two or three years, is expected to be gradually reduced in extent as the contracts in hand are completed; but, as apart from shipbuilding, Vancouver did not benefit to any appreciable extent by war industries, it is likely that the adjustment to normal conditions will be made without very serious dislocation.

In Sept., 1919, John Davidson, at the board's request, kindly consented to visit

British Columbia to confer on the spot with the management on several important questions and inspect the company's properties. The visit proved eminently satisfactory and successful. The directors desire to record their very great appreciation of the valuable services rendered by the management and staff during the past year. Sir William Mackenzie and John Davidson, who are due to retire, offer themselves for re-election.

**Expenditure on Appropriations on Capital Account, Year Ended June 30, 1919.**

| | |
|---|---|
| Rolling stock | $ 3,948.93 |
| Track extensions and improvements | 58,598.66 |
| Lighting and power extensions | 113,931.21 |
| Steam plant (credit) | 82.27 |
| Lands and buildings and bridges | 20,376.08 |
| Electrical machinery | 40,366.81 |
| Transmission lines (credit) | 917.64 |
| North Vancouver — Rolling stock, meters, transformers, and initial installations | 247.33 |
| Sundries | 5,552.29 |
| Railway feeders | 5,008.90 |
| Automobiles | 18,280.48 |
| Machinery, tools and loose plant | 9,506.94 |
| Crossings, fences, cattleguards and signs | 3,196.61 |
| Extending l. and p. system under municipal charter | 10,703.44 |
| | $288,717.77 |

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry. and allied companies—**

| | Dec., 1919 | Dec., 1918 | 6 mons. to Dec. 31, 1919 | 6 mons. to Dec., 31, 1918 |
|---|---|---|---|---|
| Gross | $783,324 | $691,065 | $4,221,916 | $3,418,095 |
| Expenses | 522,079 | 451,760 | 3,065,409 | 2,644,178 |
| Net | 266,245 | 239,305 | 1,156,507 | 773,917 |

**Kitchener and Waterloo Railway—**

| | 1919 | 1918 |
|---|---|---|
| Receipts | $81,203.11 | $58,788.55 |
| Expenditures | 77,154.97 | 57,473.69 |
| Net profits | $ 4,048.14 | $ 1,314.86 |

The profits are divided between the City of Kitchener and the Town of Waterloo in the proportion of 75% to 25%.

**The Pictou County Electric Co.**, which operates the electric railway line in New Glasgow, and connecting the mining towns of Stellarton and Westville and Trenton, N.S., some time ago obtained permission to issue $130,000 in 3 year coupon notes. It found these were not easily marketable and it applied recently to the Nova Scotia Public Utilities Commission, asking that the notes be changed to short term debentures for the same period. The greater security of the debentures, with the charge on the company's assets which they carry, was needed to enable it to find purchasers except at too heavy a discount. The interest on both securities was the same, 7%. The funds are required for paving the tracks and improving the rails.

**Toronto Civic Railway—**

| | Jan., 1920 | Jan., 1919. |
|---|---|---|
| Passenger revenue | $41,989.44 | $32,232.12 |
| Passengers carried | 2,493,296 | 1,950,461 |

**Winnipeg Electric Ry.**—According to a report submitted to the Winnipeg City Council's finance committee, the Winnipeg Electric Ry.'s total earnings for 1919, on which are based the payment to be made to the city, were $2,706,703.09, made up as follows: Cash fares, $932,684.05; ticket sales, $1,844,161.25; Sunday earnings, $19,857.79. These figures show an increase of $633,000 in 1918. The city is entitled to 5% on this amount, viz.: $139,825. The number of cars in service was reported as 328.

# Mainly About Electric Railway People.

**Thos. Ahearn**, President, Ottawa Electric Ry. has been re-elected President, Ottawa Light, Heat and Power Co.

**O. E. Baldwin**, who was appointed Manager, Guelph Radial Ry., recently, at a yearly salary of $1,800, has resigned to enter a Guelph manufacturing company's service. We are officially advised that as the Hydro Electric Power Commission of Ontario is to take over the railway on July 1, it is not likely that the city will appoint a manager for the short time that it will retain possession of the railway.

**Sir Adam Beck**, Chairman, Hydro Electric Power Commission of Ontario, and Lady Beck, whose departure from England has been delayed, were, it was announced recently, expected back in Canada about Mar. 15. It has since been reported that Lady Beck has had to undergo an operation.

**W. J. Brunless** is acting temporarily as Superintendent, Edmonton Radial Ry., Edmonton, Ont. J. H. Moir having resigned, as stated in Canadian Railway and Marine World previously.

**L. A. Cherrier**, heretofore timekeeper, Dominion Power and Transmission Co., Hamilton, Ont., who has been in the company's service for over 20 years, has been appointed chief clerk, succeeding N. S. Cumming, who resigned on his appointment as Superintendent, Niagara, St. Catharines and Toronto Ry.

**G. Comba** is, according to a press report, acting as Superintendent, Calgary Municipal Ry., pending the appointment of a successor to T. H. McCauley.

**J. E. Dalrymple**, Vice President, Traffic, G.T.R., Montreal, has been elected President, Oshawa Ry. (electric), vice E. W. Rathbun, Deseronto, Ont.

**G. Gordon Gale**, Vice President and General Manager, Hull Electric Co., has been re-elected on the Royal Ottawa Golf Club's executive committee.

**H. M. Hopper**, heretofore General Manager and Secretary, New Brunswick Power Co., St. John, N.B., continues as Secretary, and has also been appointed Treasurer, succeeding G. M. O. Peters. Mr. Hopper has also been appointed General Manager, Eastern Electric Co. Ltd., a N.B. Power Co. subsidiary.

**W. O. LeBer**, heretofore Chief Dispatcher, Montreal and Southern Counties Ry., has been appointed Superintendent, Transportation and Maintenance Departments, vice A. F. Laberge, who has been appointed temporarily as Chief Dispatcher. Office, St. Lambert, Que.

**J. B. Mack**, who has had charge of the Calgary Municipal Ry.'s advertising and publicity department, is reported to have resigned to enter the New Brunswick Power Co.'s service at St. John.

**T. H. McCauley**, heretofore Manager, Calgary Municipal Ry., Calgary, Alta., has been appointed General Manager, New Brunswick Power Co. (street railway, gas, electric light, and power), St. John, N.B., succeeding H. M. Hopper, whose new appointments are referred to above.

**John Murphy**, Electrical Engineer, Railways and Canals Department, and Board of Railway Commissioners, addressed the Engineering Institute of Canada's Montreal branch, on Feb. 12, on ice formation.

**Paul Paradis**, Engineer, Montreal Tramways Commission, died in Montreal, Feb. 10, after a long illness.

**C. U. Peeling**, Manager, Cornwall St. Ry., Light & Power Co., Cornwall, Ont., has resigned to enter the Illinois Traction Co.'s service.

**J. S. Shepherd**, for the past 10 years an accountant in the British Columbia Electric Ry.'s supply, died in North Vancouver Hospital, Feb. 18, following an operation for peritonitis.

**Warren Y. Soper**, Vice President, Ottawa Electric Ry., has been re-elected a director of the Ottawa Light, Heat & Power Co., and has also been re-elected Vice President, Royal Ottawa Golf Club.

**Russell Stephens**, who has been appointed assistant to City Manager Moore, at Guelph, Ont., will, it is reported, take over the office work in connection with the Guelph Radial Ry., heretofore handled by O. E. Baldwin, until the line is transferred to the Hydro Electric Power Commission of Ontario on July 1.

**W. N. Warburton**, General Manager, London and Lake Erie Ry. and Transportation Co., has been confined to his house at London, Ont., for some time, is reported to be in a serious condition.

## The London Street Railway Situation.

The questions at issue between the London Street Ry. and the London, Ont., City Council have been discussed at length from various angles since the beginning of the year, but nothing definite seems to have been evolved in the direction of a settlement. A suggestion has been made that the operation of one man cars on the city lines would enable the company to give a more frequent service, and continue without the necessity for an increase in fares. The company is said to be favorable to adopting one man car operation as far as possible provided the city will sanction the use of the cars for a term of years. Another suggestion is said to favor the placing of the whole matter before the Ontario Railway and Municipal Board, and leaving the board and the company to agree to terms.

**Niagara Falls, Wesley Park and Clifton Tramway Co.**—A Niagara Falls, Ont., press dispatch of Feb. 24 says that C. U. Fairlie, of the Hydro Electric Power Commission of Ontario's Railway Department, had arrived there, with other members of the staff, and that they were going over the Niagara Falls, Wesley Park and Clifton Tramway Co.'s line in the city, which is owned and operated by the Niagara, St. Catharines and Toronto Ry. The dispatch also stated that the Niagara Falls City Council requested the Hydro Electric Power Commission to have the line examined, and report on it, as the ratepayers had voted in favor of its acquisition by the city, the franchise expiring Mar. 31.

**Montreal Tramways Co. and Cost of Sewers.**—The Quebec Legislature has passed an act adding a new section to the Montreal Tramway's Co's Act, providing that the company shall be relieved of paying taxes on its right of way for the construction of sewers, etc. Heretofore the company has had to pay one-half of the cost of sewers built on highways along its right of way.

# Electric Railway Notes.

Peterborough, Ont., trade unions are reported to favor a Sunday street car service there.

The Levis County Ry. has received a snow sweeper from Ottawa Car Manufacturing Co.

The Windsor, Essex and Lake Shore Rapid Ry. is in the market for a passenger car.

The Oshawa Ry. is having a 50 ton electric freight shunter built by Ottawa Car Manufacturing Co.

British Columbia Electric Ry. shareholders have, for the first time in five years, received a dividend of 3%, with a bonus of 3%.

The Nelson, B.C., City Council is reported to have decided against the operation of one-man cars on Nelson Electric Ry.

The Saskatoon, Sask., City Council is reported to be considering a project for building cars for Saskatoon Municipal Ry.

The St. Thomas, Ont., City Council is reported to be considering changing the cars on its electric railway for one-man operation.

The Fort William, Ont., Municipal Ry. is reported to have put in service, Feb. 8, two of the cars bought recently in Cleveland, Ohio.

The Niagara, St. Catharines and Toronto Ry., has placed an order for the remodelling of 12 local line electric cars with Ottawa Car Manufacturing Co.

The Montreal City Council arranged with the Montreal Tramways Co. recently for the use of 3 flat cars in the removal of snow from the streets.

The London, Ont., public utilities hydro department is reported to have notified the London St. Ry. that the power supplied for the operation of the railway will be reduced by one-half.

During January the cost of snow removal from the streets in Montreal on which the Montreal Tramways Co., operates was $12,269.12 against $26,835 for Jan., 1919. Half the cost of this work is paid by the company.

The Moncton Tramways, Electricity & Gas Co., Moncton, N.B., which had a passenger car and sweeper destroyed by fire on Dec. 25, 1919, advised us Feb. 6, that it expected to give an order to replace the same, in the near future thereafter.

An exceptionally severe snow storm struck St. John, N.B., Feb. 7 and 8, stopping street car service for several days. The New Brunswick Power Co.'s loss through the tying up of traffic and damage to property is estimated at $20,000.

The Regina, Sask., City Council, has been asked by its special committee, which has been considering the question of operating one-man cars on the Regina Municipal Ry., to send a delegation to Edmonton and Calgary to make a personal investigation.

North Vancouver, B.C., has assessed the B.C. Electric Ry.'s three bridges and sub-station in the municipality. An amendment of the Assessment Act, passed by the legislature in 1919 has, it is claimed, rendered these properties subject to municipal taxation.

J. G. Glassco. Manager of Winnipeg's City Light and Power Department, is reported as expressing the opinion that within seven years motor omnibusses will be the prevailing system of transportation there, that the present street railway system will be obsolete and that the tracks will be removed.

The Toronto Ry. proposed to the Toronto Board of Control, Feb. 19, that the city take over the railway at once, instead of in 1921, or buy the additional cars, which it desires the company to provide, and allow the company to operate them. The Board of Control has since declined to consider the company's proposals. In the meantime, the city is pressing an application to the Ontario Railway and Municipal Board, for an order on the company, with penalty attached, for the supply of additional cars immediately.

The Board of Railway Commissioners is reported to have called the attention of Edmonton, Alta., City Commissioners, to the fact that the Edmonton Radial Ry. was authorized in 1908 to operate its cars over the low level bridge until the completion of the high level bridge. The city solicitor is reported to have been instructed Feb. 2, to apply to the commissioners for a further order to permit the continuance of the operation of street cars over the low level bridge.

The Ottawa Board of Trade is reported as proposing to ask the Dominion Government to rearrange the hours at which civil servants go to and leave their offices, to do away, to some extent, with the crowding of Ottawa Electric Ry. cars. The board has expressed the opinion that it is unfair to expect the company to keep up a sufficient number of cars to transport 10,000 people at the same hour four times a day, and carry but a few people the remainder of the time.

R. Savignac, a former Montreal Tramway Co.'s employe was awarded $9,000 damages and costs recently in an action which was carried to the Imperial Privy Council. The plaintiff, in order to secure his money, seized the company's movables and put a saise of conservatoire into the hands of the Royal Bank against any of the company's funds it might have on hand. The amount of the damage was paid, but the amount of the costs, which was stated in sterling, was tendered in currency at the rate of exchange prevailing on the date of the judgment. This latter amount was accepted as on account, and a court is being asked to decide whether it, or the statutory basis of the English pound, $4.86 2-3 should be paid. The amount in dispute is said to be $411.

London, Ont., ratepayers having defeated a bylaw to raise $200,000 for London and Port Stanley Ry. purposes, the commissioners are without funds to buy additional rolling stock for which they were negotiating to take care of the increasing traffic. In order to finance the purchase, the commission was reported, Feb. 25, to have applied to a London City Council Committee for a line of credit of $75,000 in addition to an increased credit of $50,000 granted a year ago. The committee passed a resolution recommending that the commission be authorized to borrow $125,000 from the Bank of Montreal to be applied for purchase of equipment and for working capital; the repayment of which is to be met out of the earnings of the L. & P.S.R. It is said the commissioners propose to buy an electric locomotive and 6 cars.

## New Brunswick Power Co.'s Annual Report and Meeting.

Following are extracts from the report for the calendar year 1919 of this company, which owns and operates the electric railway in St. John:—

A bill, drafted by the Currier commissioners and giving effect to their recommendations, was introduced at the last session of the legislature. Among other objections to the bill the city contended that the company's assets did not warrant a rate base of $2,800,000 as established by the Currier commission and at the city's instance this matter was referred by the legislature to the Court of Appeal for consideration. It is expected that the court will make a finding before the legislature meets early in March.

| | |
|---|---|
| Railway receipts | $390,587.89 |
| Light and power | 443,459.11 |
| Gas earnings | 101,189.87 |
| Merchandise and nonoperating income | 5,687.78 |
| | $940,924.65 |
| Operating expenses | $731,339.74 |
| Interest on bonds | 87,500.00 |
| Other interest | 6,904.12 |
| Net earnings to surplus account | 115,180.79 |
| | $940,924.65 |
| Dividends due Sept. 1, 1918, paid, May 24, 1919 | $ 23,625.00 |
| Other dividends paid in 1919 | 82,541.67 |
| Accrued on first preferred for December | 5,833.33 |
| Transferred to profit and loss | 3,180.79 |
| | $155,180.79 |

The following special report was presented by President L. R. Ross at the annual meeting, Feb. 23:—The company regrets that, owing to the severe storm and extremely cold weather of the present winter, it is compelled to pass the dividends on its preferred stocks. In December and January certain of the city water mains were frozen, and burst, flooding the company's gas pipes, causing them to freeze and burst, thereby entailing a loss of several million feet of gas and putting the company to great expense in repairing the damage. The heavy February storms completely interrupted the street railway service for several days. Notwithstanding the utmost effort of our employes, and the employing of a large force of extra labor night and day, the full service has not yet been resumed. In addition to the loss of earnings, due to interrupted service, in consequence of the storm, very considerable damage was done to the electric light and power distributing systems. After the last storm a heavy rain flooded portions of the streets, in some places to a depth of several feet, burning out the motors of all the company's cars with the exception of 8. The total losses will aggregate upwards of $40,000. The narrow margin afforded by the rates allowed, prevent the company from accumulating a surplus adequate to car for such contingencies.

The directors and officers were re-elected as follows: President, L. R. Ross; other directors: F. R. Taylor, H. P. Robinson, W. E. McGregor, P. W. Thomson, R. B. Emerson, and L. C. Gerry. H. M. Hopper, heretofore Secretary and General Manager, was appointed Secretary-Treasurer; T. H. McCauley, heretofore Superintendent, Calgary Municipal Ry., having been appointed General Manager.

# Marine Department

## Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

**Orders for Steamships**—In addition to the 60 steel cargo steamships, particulars of which were given in Canadian Railway and Marine World for February, we are advised that the Marine Department has ordered 3 more ships as follows:

Port Arthur Shipbuilding Co., Port Arthur, Ont., one, approximately 3,890 d.w. tons, at $182,50 per long d.w. ton, $709,925, builder's yard nos. 15 and 16.

J. Coughlan & Sons, Vancouver, B.C., two, approximately 8,390 d.w. each; at $167.50 per long d.w. ton; $1,405,325 each.

The Marine Department has under consideration the placing of further orders, and it is said to be probable that at least 7 more steel cargo steamships will be ordered, which will bring the total number up to 70. Harbour Marine Co., Victoria, B.C., is endeavoring to obtain orders for 2 more ships.

The Minister of Marine is reported to have stated in Ottawa, Feb. 27, that the government will ask the Dominion Parliament for a further vote of $20,000,000 to complete its present shipbuilding programme.

**Passenger Steamships** — Information in regard to the government's policy for adding passenger steamships to Canadian Government Merchant Marine Ltd., will be found under government building of 18 knot passenger steamships opposed by Quebec Board of Trade, on another page of this issue. The question of providing passenger services for trans-Atlantic and trans-Pacific traffic is undoubtedly being seriously considered by the Minister of Marine and will be discussed at a conference he will have with D. B. Hanna, President, Canadian National Rys., during the first week in March.

**Launchings of Steamships** — Since Canadian Railway and Marine World for February was issued, we have been advised of the following launching of a ship for Canadian Government Merchant Marine Ltd.

Feb. 24, s.s. Canadian Prospector; Marine Department contract 37; builder's yard no. 14; approximately 8,390 d.w. tons; J. Coughlan & Sons, Vancouver, B.C.

If weather conditions are favorable the steel cargo steamship, Canadian Miner; Marine Department contract 41; builder's yard no. 6; approximately 2,800 d.w. tons; which is being built by Nova Scotia Steel & Coal Co., New Glasgow, N.S., for Canadian Government Merchant Marine Ltd., will be launched early in March.

The steel cargo steamship, Canadian Otter; Marine Department contract 44; builder's yard no. 4; approximately 4,575 d.w. tons; which is being built by the British American Shipbuilding Co., Welland, Ont., for Canadian Government Merchant Marine Ltd., will probably be launched towards the end of March.

The steel cargo steamship Canadian Armourer; Marine Department contract 29; builder's yard no. 1; approximately 8,390 d.w. tons, which is being built for Canadian Government Merchant Marine Ltd., by Harbour Marine Co., Victoria, B.C., will probably be launched about the middle of April.

The steel cargo steamship Canadian Observer; Marine Department contract 47; builder's yard no. 66; approximately 3,990 d.w. tons; which is being built for Canadian Government Merchant Marine Ltd., by Collingwood Shipbuilding Co., Collingwood, Ont., will not be launched until the weather is more favorable, the heavy snow and ice making it altogether too difficult and costly to launch at present.

**Deliveries of Steamships**—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following were delivered to Canadian Government Merchant Marine Ltd., on the dates mentioned.

Feb. 5; s.s. Canadian Importer; Marine Department contract 34; builder's yard no. 11; approximately 8,390 d.w. tons; J. Coughlan & Sons, Vancouver, B.C. This ship was loaded with general cargo and sailed Feb. 23 for Australia and New Zealand.

J. Coughlan & Sons, Ltd., Vancouver, B.C., advised us Feb. 13, that it expected to deliver the s.s. Canadian Exporter; Marine Department contract 35; builder's yard no. 12; approximately 8,390 d.w. tons; to the Marine Department about Feb. 26.

**Officers of Steamships**—The following officers have been appointed by Canadian Government Merchant Marine, Ltd. The first column contains the names of the ships, the second those of the captains, and the third those of the chief engineers:

| | | |
|---|---|---|
| Canadian Exporter | W. Bradley | ..... |
| Canadian Importer | ..... | J. D. Robertson |
| Canadian Navigator | E. C. Sears | ..... |
| Canadian Raider | ..... | M. Honour |

**Steel cargo steamship Canadian Adventurer, approximately 3,400 d.w. tons, for Canadian Government Merchant Marine Ltd., built by Port Arthur Shipbuilding Co., and launched by the Prince of Wales, Sept. 8, 1919.**

**Steamship Services**—W. A. Cunningham, Export and Import Freight Agent, Montreal, issued the following notice to shippers, Jan. 30: "Effective with our next sailing from Halifax for the Argentine, we propose sending our steamships into one or more Brazilian ports on the southbound passage. At present the ports chosen are Pernambuco, Rio de Janeiro and Santos, and as a basis for the ocean rates we are following those in effect from New York. This is really the first opportunity Canadian shippers have had for a Canadian service to Brazil, and it is expected full advantage will be taken of it. The steamships are about 8,300 d.w. tons, and should make the passage during the winter from Halifax to the first Brazilian port in about 20 days."

**British American Shipbuilding Co.**, Welland, Ont., which has contracts from the Marine Department for 2 steel cargo steamships, approximately 4,575 d.w. tons each, advised us that the s.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4; will probably be launched about the end of March.

**Collingwood Shipbuilding Co.**, Collingwood, Ont., which is building a steel cargo steamship, Canadian Observer; Marine Department contract 47; builder's yard no. 66; for Canadian Government Merchant Marine Ltd., will not launch it until the weather is more favorable, the heavy snow and ice making launching at present too difficult and costly. This company also has orders from the Marine Department for 2 other steel cargo steamships of approximately 3,890 d.w. tons each.

**J. Coughlan & Sons, Ltd.**, Vancouver, B.C., has received additional orders from

the Marine Department for 2 steel cargo steamships, for Canadian Government Merchant Marine Ltd., of 8,390 d.w. tons each, at $167.50 per long d.w. ton, the approximate cost of each ship being $1,405,325.

This company delivered the s.s. Canadian Importer; Marine Department contract 34; builder's yard no. 11; approximately 8,390 d.w. tons; to the Marine Department, Feb. 5. She was transferred to Canadian Government Merchant Marine Ltd., and loaded with a general cargo for Australia and New Zealand.

This company launched, on Feb. 24, the steel cargo steamship, Canadian Prospector; Marine Department contract 37; builder's yard no. 13; approximately 8,390 d.w. tons for Canadian Government Merchant Marine Ltd.

This company advised us Feb. 13 that it expected to deliver the s.s. Canadian Exporter; Marine Department contract 35; builder's yard no. 12; approximately from the Marine Department, for a steel cargo steamship for Canadian Government Merchant Marine Ltd., approximately 3,890 d.w. tons, at $182.50 per long d.w. ton, $709,925. The builder's yard no. will be 45. This makes the seventh ship ordered from the company by the Marine Department.

This company expects to launch 2 steel cargo steamships, approximately 4,375 d.w. tons each, which it is building for Canadian Government Merchant Marine Ltd., as follows: Canadian Runner; Marine Department contract 32; builder's yard no. 43; about April 24. Canadian Carrier; Marine Department contract 33; builder's yard no. 44; about May 1.

Wallace Shipyards Ltd., North Vancouver, B.C., which was given orders by the Marine Department recently for 2 steel cargo steamships of approximately 8,390 d.w. tons each; builder's yard nos. 103 and 104; in addition to the 4 ships ordered previously, and delivered, ad-

**Steel Cargo Steamship, Canadian Importer; approximately 8,390 dw. tons; for Canadian Government Merchant Marine Ltd.; built by J. Coughlan & Sons, Vancouver, B.C.**

8,390 d.w. tons; to the Marine Department for Canadian Government Merchant Marine Ltd., about Feb. 26.

This company, which launched the s.s. Canadian Inventor; Marine Department contract 36; builder's yard no. 13; approximately 8,390 d.w. tons; on Jan. 24; expects to deliver her to the Marine Department early in March.

Harbour Marine Co., Victoria, B.C., which has orders from the Marine Department for 2 steel cargo steamships, approximately 8,390 d.w. tons each, Canadian Armourer and Canadian Composer, the keels of which were laid July 14, 1919, and Aug. 9, 1919, respectively, expects to launch Canadian Armourer about the middle of April. It is proposed to install the boilers and engines before launching the hull, if approved by the Marine Department. This company is endeavoring to secure contracts from the department for 2 more ships.

Nova Scotia Steel & Coal Co., New Glasgow, N.S., advises us that if weather conditions are favorable, the steel cargo steamship Canadian Miner; Marine Department contract 41; builder's yard no. 6; approximately 2,800 d.w. tons; for Canadian Government Merchant Marine Ltd., will be launched early in March.

Port Arthur Shipbuilding Co., Port Arthur, Ont., has received another order vised us Feb. 18 of being unable to give any approximate date as to when the keels would be laid, owing to the fact that the Dominion Steel Corporation could not advise when it expected to roll the steel.

## Great Lakes Seamen's Wages.

Detroit, Mich., press dispatch, Feb. 15. —With the approach of the opening of navigation on the Great Lakes, ship owners are beginning to hear rumors of renewed demands from various classes of marine labor. Among the requests to be made of the Lake Carriers' Association by members of the Seamen's Union is the granting of an 8-hour day, a 25% wage increase, and possibly a 3 shift system. Last season sailors and firemen on lakes were paid $100 a month, including quarters and meals. Men doing similar work on ocean-going ships received only $90 to $95, but they also had an overtime allowance, which brought the average pay up to about $125 a month. The lake sailors are preparing to demand the same rate of pay as their salt water brethren. The Seamen's Union will formulate their demands, which include some minor concessions in working conditions. Ship owners last year paid their employes the highest wages in the history of the Great Lakes trade, but, notwithstanding, there was more or less labor trouble both ashore and afloat, and many lines considered themselves fortunate to break even at the end of the season.

**Details of the Different Types of Steamships for Canadian Government Merchant Marine Ltd.**

The following are comparative details of the seven different types of steamships being built for Canadian Government Merchant Marine Ltd.:

| | 2,800 ton. | 3,400 ton. | 3,750 ton. | 4,300 ton. | 5,100 ton. | 8,100 ton. | 10,500 ton |
|---|---|---|---|---|---|---|---|
| Length, overall | 280 ft. | 260 ft. | 260½ ft. | 333 ft. 7 ins. | 344 ft. | 413 ft. 1 in. | 445 ft. |
| Length, bet. perpendiculars | 270 ft. | 251 ft. | 251 ft. | 320 ft. | 331 ft. | 400 ft. | 430 ft. |
| Breadth, moulded | 38 ft. | 43½ ft. | 43½ ft. | 44 ft. | 46½ ft. | 52 ft. | 56 ft. |
| Depth, moulded | 20½ ft. | 23 ft. | 26 ft. | 25 ft. | 25½ ft. | 31 ft. | 38 ft. |
| Draft, loaded | Tri-compound | 20 ft. | 22 ft. 2 in. | 21 ft. 2 ins. | 21 ft. 8 ins. | 25 ft. 1 in. | 29 ft. |
| Type | S.d., p.b. & f'c's'le | S.d., p.b. & f'c's'le | Lake, s.d., p.b. & f'c's'le | S.d., p.b. & f'c's'le | S.d., p.b. & f'c's'le | 2d., p.b. & f'c's'le | 3d., p. & f'c's'le |
| Engines—Type | Triple expansion | Triple expansion | Triple expansion | Triple expansion | Triple expansion | Triple expansion | Triple expansion |
| Cylinders, diar. | 17½ x 28¾ x 47 ins. | 20½ x 34 x 56 ins. | 18 x 30 x 50 ins. | 25 x 41 x 67 ins. | 25 x 41 x 68 ins. | 27 x 44 x 73 ins. | 29½ x 50 x 80 ins. |
| Stroke | 33 ins. | 40 ins. | 36 ins. | 45 ins. | 45 ins. | 48 ins. | 54 ins. |
| Ind. h.p. | 875 | 1,300 | 1,200 | 1,800 | 2,500 | 3,000 | 4,000 |
| Boilers—Type | Single ended | S.d., p.b. & f'c's'le | Single ended | Single ended | Single ended | Single ended. | Single ended |
| No. | 2 | 2 | 2 | 2 | 3 | 3 | 4 |
| Diar. and length | 12¾ x 10¾ ft. | 15 x 11 ft. | 14 x 10¾ ft. | 15½ x 11½ ft. | 14 x 11½ ft. | 15½ x 11½ ft. | 15½ x 11¾ ft. |
| Working pressure | 185 lbs. | 190 lbs. | 180 lbs. | 180 lbs. | 180 lbs. | 180 lbs. | 180 lbs. |
| Furnaces—No. | 2 | 6 | 6 | 6 | 9 | 9 | 12 |
| Grate surface | 80 sq. ft. | 135 sq. ft. | 100 sq. ft. | 132 sq. ft. | 156 sq. ft. | 198 sq. ft. | 270 |
| Heating surface | 3,000 sq. ft. | 4,670 sq. ft. | 3,900 sq. ft. | 5,162 sq. ft. | 7,275 sq. ft. | 7,743 sq. ft. | 10,500 sq. ft. |
| Speed | 8½ knots | 9 knots | 9 knots | 11 knots | 11 knots | 11 knots | 12 knots |
| Classification | Lloyd's | Lloyd's | Brit. Corp. | Lloyd's | Lloyd's | Lloyd's | Lloyd's |

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The following contractions are used in the column giving the type of the vessels to be built:—s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | 4,575 | $207. | $ 947,025 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " | 67 | 8,390 | 180. | 1,510,200 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbuilding Co. | 61 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd. | 100 | 4,485 | 207. | 928,395 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | 4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9, 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbuilding Co. | 62 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | June 3, 1918 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | Dec. 27, 1919 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | ..... | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 11, 1919 | Oct. 9, 1919 | ..... |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 28, 1919 | ..... | ..... |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | 3,400 | 205. | 697,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 9, 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | 3,400 | 210. | 714,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | 3,400 | 205. | 697,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | 3,400 | 210. | 714,000 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18, 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8, 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Armourer | Harbor Marine Co. Ltd. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | ..... | ..... |
| 30 | Jan. 24, 1919 | Canadian Composer | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | ..... |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Lloyd's | 10½ | Aug. 29, 1919 | ..... | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10½ | Aug. 29, 1919 | ..... | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Apr. 26, 1919 | Dec. 6, 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | ..... |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan. 24, 1920 | ..... |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | Feb. 24, 1920 | ..... |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8, 1919 | Dec. 20, 1920 |
| 41 | Mar. 31, 1919 | Canadian Miner | " " | 6 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | ..... | ..... |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Bri. Corp. | 10 | Mar. 29, 1919 | ..... | ..... |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10 | July 14, 1919 | ..... | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbuilding Co. | 65 | 3,990 | 180. | 718,200 | Lake, s.d., p. b., and f'c's'le | Lloyd's | 11 | Sept. 3, 1919 | Dec. 27, 1919 | ..... |
| 47 | Sept. 11, 1919 | Canadian Observer | " " | 66 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | ..... | ..... |
| 48 | Sept. 2, 1919 | Canadian Artificer | Dominion Shipbuilding Co. | 10 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | ..... | ..... |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 54 | Feb. 26, 1920 | ..... | Midland Shipbuilding Co. | 10 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Wallace Shipyards Ltd. | 103 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Collingwood Shipbuilding Co. | — | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Collingwood Shipbldg. Co., Kingston | — | 3,890 | 185.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Nova Scotia Steel & Coal Co. | 8 | 2,800 | 190. | 532,000 | 2.d. p., b. and f'c's'le | " | 8½ | ..... | ..... | ..... |
| — | ..... | ..... | Davie Shipbuilding & Repairing Co. | — | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Port Arthur Shipbuilding Co. | 45 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b, and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | J. Coughlan & Sons | 15 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | " | 16 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 383,615 | | $73,042,835 | | | | | | |

# Steel and Wooden Cargo Steamships Built in Canada for British Government.

It was announced early in February, that the steel cargo steamships War Magic and War Vixen, built by Canadian Allis-Chalmers Ltd., Bridgeburg, Ont., for the British Government, under orders from the Imperial Munitions Board, had been delivered to the owners at Halifax, N.S., during January. As announced in Canadian Railway and Marine World for Dec., 1919, these vessels were scheduled to sail from Bridgeburg for the coast on Nov. 20 and 13, 1919, respectively. This delivery marked the completion of the orders placed in Canada for steamships, both steel and wood, by the Imperial Munitions Board on behalf of the British Government. As soon as this was accomplished, some of the daily newspapers in Canada, or the agencies responsible for the dissemination of news amongst the daily newspapers, seemed to have awakened to the fact that Canadian shipyards had actually been building steamships, and in placing the "facts" before, what it apparently anticipated would be an astounded public, made the following astonishing statement:

"In the building, great secrecy had to be maintained, and this survey of the operations of the Imperial Munitions Board in Canadian shipyards is the first that has been made public."

A more absurd claim than that a survey of the shipbuilding carried out in Canadian yards since 1917, published on Feb. 10, 1920, is the first that has been made public, could not have been made. With regard to the alleged secrecy of the work, we may say that in the early stages of the building, some attempt was made by some of the officials concerned, to withhold information as to orders placed, specifications, etc., but on Canadian Railway and Marine World taking the matter up with the higher officials of the Imperial Munitions Board at Ottawa, and with the British Ministry of Shipping in England, it was clearly shown that the "secrecy" was purely a local folly and was not endorsed by the heads.

Towards the end of 1916, Canadian Railway and Marine World published a statement covering the condition of shipbuilding in Canada, and announced that the Dominion Government had prohibited the export of ships without its consent, and again that it had granted permission for the building of 21 steel cargo steamships, by several Canadian shipbuilders, for export to allied or neutral powers, which, it was hoped would pave the way for the placing of shipbuilding in Canada on a permanent basis. In April, 1917, we stated that J. P. Esplen, as representing the British Controller of Shipping, had arranged with the Imperial Munitions Board, at Ottawa, to secure all cargo steamships which might be available in Canada for delivery by May 31, 1918, and also that it was probable that the majority, if not all, of the steamships then building in Canada for export under permission, were to be taken over by the British Government. Details were also published of the building of a number of trawlers and drifters in Canada, for British use, and of the preparation of a number of shipbuilding plants, for further ship construction. In Aug., 1917, we announced that the Imperial Munitions Board had placed contracts for about 30 wooden steamships, and published plans and specifications of the hulls, which had been adopted as standard for steamships of this class, the plans and specifications of the propelling machinery being published in our issue of Feb., 1918. Our issue of Aug., 1917 also contained the first complete list to that date of all orders placed for steel and wood steamships in Canada by the Imperial Munitions Board, and also details of steamships which were under contract for neutral owners, and which were to be relinquished to the British Government. This list was added to, from time to time, and information as to the building progress, launching, equipping, completion, trials and delivery, was published each month in Canadian Railway and Marine World, until the completion of the contracts.

The number of steel steamships built in Canada under these orders, was 42, with an aggregate d.w. tonnage (approximate), of 243,100 tons; and of wood steamships, 46, with an aggregate d.w. tonnage (approximate) of 141,680 tons, a grand total of 88 steamships and 384,780 tons. Contracts were actually placed for 43 steel steamships, one steel steamship, named Alaska, built by J. Coughlan and Sons, Vancouver, B.C., for Norwegian interests, being taken over, and 2 steel steamships, out of an order for 4, placed with Canadian Allis-Chalmers Ltd., Bridgeburg, Ont., being cancelled. The recent daily press review of the British Government shipbuilding in Canada, includes the car ferry Leonard, which was bought by the Imperial Munitions Board, but as this was not built in Canada, we have not included it in our figures. The first steel steamship, War Dog, was launched by Wallace Shipyards Ltd., North Vancouver, B.C., May 18, 1917, and the first wood steamship, War Songhee, was launched by the Foundation Co. of British Columbia, Victoria, B.C., Dec. 28, 1917.

The collection, classification and dissemination of news at the proper time, is the first duty of a newspaper to the public, and in this present instance, we feel, that having regard to all the difficulties which had to be contended with during the war period, Canadian Railway and Marine World, not only carried out a particular service to its immediate clientele, but also to Canada as a whole, in keeping the shipbuilding position and possibilities well to the front, and bringing the matter before all who are interested in the establishment of Canadian shipbuilding on a firm and lasting foundation. From the earliest stages of the shipbuilding revival, we have spared no pains in the collection and tabulation of such information as relates to the work, and this is being continued in the case of the shipbuilding for the Canadian Government Merchant Marine Ltd. In fact, we can safely assert, that in this matter of shipbuilding, no such classification of information has ever been carried out by any other paper, either in Canada or elsewhere.

### Dominion Marine Association.

President, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

Second Vice President, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

Executive Committee, E. H. Beazley, Union Steamship Co. of British Columbia, Vancouver; W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

General Counsel, Francis King, M.A., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

## Assistant Engineer for Quebec Canals Staff.

The Civil Service Commission has given notice that applications will be received for appointment as an assistant engineer, at an initial salary of $2,100 a year, which will be increased on recommendation for efficient service at the rate of $120 a year until a maximum of $2,580 has been reached. This initial salary may be supplemented by such bonus as is provided by law. Candidates must possess the following qualifications: Education equivalent to graduation in engineering from a school of applied science of recognized standing, with at least 4 years of engineering experience in canal work, one year of which shall have been in a position of professional responsibility; firmness, tact, ability to manage men and ability to speak and write fluently both English and French. While a definite age limit has not been fixed for this position, age may be a determining factor when making a selection. The successful candidate must be able to take responsible charge of canal design and construction work and be proficient in hydraulic and structural engineering work, reinforced concrete work, and roadway building, and be able to take charge of survey work. Candidates will be examined in the following subjects, which have the relative weights indicated: Education, training and experience, 300; oral interview, if necessary in the commission's opinion, 100. A written examination will be held to test the competency of technically suitable applicants in both languages.

German Marine Plant for Canada—Ottawa press dispatch, Feb. 16.—In the material which the allies are requiring Germany to deliver as compensation for the loss of German battleships at Scapa Flow are several floating docks, dredges, hydraulic cranes, etc. It is said that the British Government has asked the Canadian Government if it would like to acquire any of these on account of Canada's reparation claim, and the matter is now being considered by the government at Ottawa.

Oil fuel will, it is said, be used on 70% of the ships now building in Swedish yards.

# Shipbuilding in Scotland in 1919 and 1920

A Glasgow correspondent writes: The shipbuilding returns for the United Kingdom for 1919 are somewhat disappointing. It was anticipated that after the war there would be a great and rapid advance in shipbuilding, but there has been practically none so far. In 1918, 1,244 ships of 1,840,029 tons were built; in 1919, 1,268 ships of 1,931,769 tons. It has to be remembered, however, that in 1918 a considerable volume of the work was naval. The department of the Controller-General of Shipbuilding, now demobilized, did its best to speed up the building of merchant steamships, but was tremendously handicapped by the amount of naval work on the stocks, and by refitting and repairing of the ships of the fleet which had to be given first place.

Neither does the output of the United Kingdom compare very favorably with that of the United States, where 1,337 ships were built of, approximately, 4,700,000 tons, and developing, approximately 2,590,000 i.h.p., while in the United Kingdom 1,268 ships of 1,931,000 tons and 3,210,000 i.h.p. left the stays. These figures show the U.S. tonnage to be more than twice that of the United Kingdom; but it consists of many ships for the lakes traffic and a very large number of wooden ships. The sea going value of the ships is fairly well represented by the indicated horse power, which is considerably greater in the case of the United Kingdom.

The Clyde production of 646,154 tons is an advance over 1918 of 114,000 tons, and is the second highest on record. It has been gradually recovering since 1915, when it dropped to 306,400 tons, the lowest output since 1897; but it has some little way to go before it reaches the record year of Clyde shipbuilding, 1913, when the output was 756,976 tons. The output on the Clyde compares favorably with that of the other large British rivers. Four hundred and twenty-two ships were built in 1919 on the Clyde of a tonnage of 646,154 and 1,479,771 i.h.p., while on the Tyne, Wear, Tees, and Lagan, together, 239 ships were built of a total tonnage or 968,174 and 1,164,081 i.h.p. Following is a comparison of the building on the different Scotch rivers:

| | Ships. | Tons. | I.h.p. |
|---|---|---|---|
| Dee & Moray Firth | 68 | 13,488 | 20,640 |
| The Clyde | 422 | 646,154 | 1,479,771 |
| The Forth | 42 | 51,280 | 33,963 |
| The Tay | 13 | 17,765 | 27,520 |
| | 545 | 728,687 | 1,561,894 |

On the Clyde the increase in tonnage over 1918 was only about 114,000 tons. There was no corresponding increase, however, on the horsepower, which fell to an extent of almost 400,000. Several reasons may be given to account for the comparative failure in output in this area. First of all, labor remained in an unsettled state throughout the year, although recently it has become more stabilized, at any rate on the surface. Second, the working week had been shortened, without adequate compensation in an increase of numbers of workmen. Third, besides the usual repair work, there had to be done a great deal of work on the refitting of steamships which had been on war service. Lastly, many contracts which had been partially completed for the Admiralty, were cancelled. For example, one firm had contracts cancelled for a battle cruiser, a light cruiser, 2 torpedo boat destroyers, and 3 submarines, on which a considerable amount of work had been done on the hulls and machinery.

The rescinding of the contracts for naval ships freed many of the stocks for ocean going craft; and 1919 may be said to have been the premier year of the tramp steamship. Of the total of 422 ships built on the Clyde, 96 were cargo steamships of a total of 378,512 tons; and only seven were passenger steamships of an aggregate of 28,142 tons. When it is taken into account that one of the vessels was the Cameronia of 16,500 tons, the tonnage of the other six must have been very small. Twenty-six war ships of 91,676 tons were launched and 10 oil tankers of 55,491 tons. Of the total of 422 ships, 235 aggregated only 30,537 tons. The Cameronia, the first liner laid down after the declaration of the armistice, was completed in the record time of 9½ months.

It is said that a considerable number of transocean liners have been placed on order with the big shipbuilding concerns so that as 1919 has been the year of the tramp steamship, 1920 may turn out to be the year of the liner. These liners will replace those torpedoed during the war. Many of them will be fitted with geared turbines, and oil fuel will be almost universally used, to the saving of bunker space. The accommodation for passengers should in consequence be improved; there will be economy in respect of the labor employed in firing the boilers; and a greater efficiency in driving power should result, making itself manifest in the rate of going. It should not be long either before more than a few vessels of the Lusitania type are crossing the Atlantic, and that within the five days. The prospects of shipbuilding in 1920 are right; and, perhaps especially so in the Clyde area.—Christian Science Monitor.

## Government Merchant Marine Operations Criticized.

W. J. Noble, President of the United Kingdom Chamber of Commerce, said in a recent address: "The rise of the United States merchant fleet is one of the world facts arising from the war. It would be a profound mistake to underestimate its growing strength. It probably will not continue at its recent rate of progress, but the ship building potentialities of the U.S. justify its people in hoping ultimately to occupy the supreme position. They are now, as in the middle of the last century, following closely upon Great Britain's heels.

"I have faith in my own countrymen as shipbuilders and shipowners. Britain is prepared to meet any fair competition. But no one can regard the present policy of the U.S. Shipping Board and that of our own dominions as fair competition. The policy of each is to build up a mercantile marine at any cost, relying upon the national purse to make good any deficiency, which is a serious menace to private enterprise."

In voicing his fear that the U.S. might capture the world's coal trade, Mr. Noble said: "The U.S. is now putting coal aboard steamships at 30 shillings a ton, as against England's present figure of 100 shillings. The discrepancy is due largely to the fact that only 8% of British coal is cut by machinery, while the U.S. is cutting 50% of her output by machinery. The U.S. miner is producing two and a half times the quantity put out by the British miner."

## The United Kingdom's Shipbuilding Position.

The most noteworthy feature of the shipbuilding returns for the quarter ended Dec. 31, 1919, from a British point of view, is that on that date the gross tonnage of merchant ships under construction in the United Kingdom, for the first time for several years, exceeds the total United States figures, atlhough the margin is a small one, the totals being respectively 2,994,249 tons against 2,966,515 tons. The detailed table of construction in the United Kingdom is as follows:

| | Dec. 31, 1919. | | Sept. 30, 1919. | | Dec. 31, 1918. | |
|---|---|---|---|---|---|---|
| Steamships— | No. | Gross tonnage. | No. | Gross tonnage. | No. | Gross tonnage. |
| Steel | 722 | 2,980,938 | 723 | 2,796,154 | 414 | 1,975,962 |
| Ferro - concrete | 5 | 1,700 | 8 | 2,482 | ..... | ..... |
| Wood and composite | 7 | 2,502 | 8 | 2,293 | 2 | 1,240 |
| Total | 734 | 2,985,140 | 739 | 2,800,929 | 416 | 1,977,202 |
| Sailing— | | | | | | |
| Steel | 14 | 3,388 | 29 | 6,749 | 8 | 2,750 |
| Ferro - concrete | 8 | 5,571 | 13 | 9,095 | .. | ..... |
| Wood and composite | 1 | 150 | .... | ..... | .. | ..... |
| Total | 23 | 9,109 | 42 | 15,844 | 8 | 2,750 |
| Total (steam and sail) | 757 | 2,994,249 | 781 | 2,816,773 | 424 | 1,979,952 |

The total for the empire is increased by the 251,480 tons being built in the Dominions, of which 188,375 tons are Canadian. It is also satisfactory to learn from the table reproduced above, that while the United Kingdom figures mark a very large advance upon those of a year ago, there is an encouraging increase over the previous quarter. The shipbuilding work of the United Kingdom during the past three months was as follows:

| | Steam. | | Sail. | |
|---|---|---|---|---|
| During quarter ended Dec. 31— | No. | Gross tonnage. | No. | Gross tonnage. |
| Ships commenced | 159 | 601,572 | 9 | 2,060 |
| Ships launched | 137 | 451,915 | 16 | 7,439 |

The figures of the merchant ship construction in the whole world, show that the total production of other countries still largely exceeds that of the United Kingdom, the chief contributors, outside of the United States, already noted, being Holland, 328,338 tons; Italy, 314,547 tons; Japan, 309,474 tons, and France, 216,775 tons; while Norway, Spain and Sweden each have about 100,000 tons under construction.

# The United States Shipping Board's Work and Future Policy

By John Barton Payne, Chairman, U.S. Shipping Board.

The shipping board has felt and now feels the keenest interest in bringing South America so close to the United States that we may shake hands almost daily, and we keenly realize that this can only be done by ships, and more ships. Indeed, the board's great desire to inaugurate and establish an adequate service to the important cities of South America has sometimes manifested itself in an optimism which the cold logic of fact has not justified.

This has not always been the board's fault. For instance, our great desire inspired Chairman Hurley to plan the inauguration of this service by sending the s.s. Mount Vernon to South America with a passenger list of representative business men. It was then assumed that the Mount Vernon and other ships would speedily be delivered to the board for use. In this we were disappointed. The Mount Vernon is still in the War Department's possession, and is out on the Pacific, and the government has found it necessary to retain the use of others of these ships for a much longer time than was then supposed necessary.

Prior to our entrance in the war in April, 1917, we had few ships, few shipyards, and only a small number of people in the business of shipping, and it is interesting to know our actual progress since then, for, by our actual accomplishment we can best show that, while we have been slow in starting, when the U.S. enters upon the business of shipping as it now has, it will go forward and establish a permanent merchant marine service.

In April, 1917, there were in the U.S. only 61 shipyards with 234 ways in which ships of 3,500 d.w. tons could be constructed. In Nov., 1918, when the armistice was signed, this number had increased to 223 yards with 1,099 ways. In 1917, the U.S. Shipping Board Emergency Fleet Corporation launched 106 ships, totalling 708,970 d.w. tons. Of these it delivered complete 49 ships, amounting to 302,115 d.w. tons. In 1918, the Emergency Fleet Corporation launched 812 ships, amounting to 4,244,126 d.w. tons, and delivered to the Shipping Board 532 of these ships completed, representing a tonnage of 3,026,006 d.w. In 1919, we launched 1,065 ships, representing 5,982,277 d.w. tons, and actually delivered 1,181 ships with a tonnage of 6,385,123 d.w. There remains of the war construction programme 534 ships of 3,661,767 d.w. tons. These will be completed and delivered by Aug., 1920. Besides this, we purchased or contracted with Japan for the building of 45 ships of 372,023 d.w. tons. The total of these Japanese ships actually received and in service is 18, of 148,323 d.w. tons.

These activities and the taking over of German and Austrian cargo tonnage have given the U.S. 8,700,917 d.w. tons of steel ships; 1,799,123 d.w. tons of wooden ships; 63,000 d.w. tons of composite and 10,000 tons of concrete ships, a total tonnage of 10,573,040 d.w., excluding the 3,661,767 tons to be completed in 1920. We have lost, reconveyed to former owners or sold 194 ships, representing 1,274,371 d.w. tons. Some of the ships now in operation we will sell for use by foreign flags, but the fleet as a whole, representing 1,688 ships of 9,298,669 d.w. tons, will be operated under the U.S. flag as a permanent merchant marine, and will be available to serve the trade routes to South America and other countries.

The demand for ships to win the war —ships to carry men and food to France —was so imperative and so pressing, that passenger ships, as such, were not considered. Questions of this kind, however important, were compelled to wait. The result is we have much less passenger tonnage than we need, and much less than we could have had, had our fleet been built under peace conditions. It is not, of course, possible to inaugurate a passenger service to South America without an adequate number of passenger ships. We are building 26 passenger ships for delivery this spring, the War and Navy Departments have turned over to us 27 ex-German passenger ships, but these having been made into troop ships, are not in condition to be used for a passenger service until reconditioned. The first of these was the Moccasin, a small ship of only 4,630 d.w. tons. This was placed immediately under contract service, is now completed, and on its way to South America, and will be followed by other and larger ships as fast as they can be made ready for service.

It may be wondered why we inaugurate our South American service with so small and modest a beginning. This was not so much due to our modesty, as to the fact that we could not do better in the present circumstances. Our present plans for the passenger service to the East Coast of South America are: Five steamships, maintaining a two weekly service between New York, Rio de Janeiro, Santos, Montevideo and Buenos Aires. Southbound, these ships will proceed directly to Rio de Janeiro; northbound, they will call at St. Thomas for fuel. The 5 ships selected for this service are all ex-German steamships of 15 knots speed—the Aeolus, Huron, Pocahontas, Dekalb, and Princess Matoika. The Huron, Dekalb and Aeolus have been returned from the army and are being reconditioned. The Huron is expected to be ready for service in April, and the Dekalb and Aeolus in May. The Princess Matoika and the Pocahontas will be returned from the army shortly. They are all being completely remodeled, and will be converted to burn fuel oil. Their accommodations will be first-class in every respect, and part of their cargo holds will be refrigerated to care for the movement of perishable products.

The board regards the passenger service to South America as of paramount importance, and, pending the reconditioning of the 5 steamships mentioned above, is doing what it can to provide a temporary service. The Moccasin, a 12½ knot ship, sailed from New York, Dec. 29. The Callao will follow early in March, and it is hoped to secure temporary use of one of the vessels now in the army transport service to fill the gap and maintain for the present at least a monthly sailing. It is recognized that vessels of the Moccasin and Callao type are not suitable for this service, but it seemed to us wise to begin by even a temporary expedient. Our friends would at least know we are thinking of them.

For the year 1919, 100 Shipping Board steamships were dispatched from U.S. ports to Brazil, carrying 444,400 tons of cargo. To the River Plate, 129 steamships with 689,600 tons of cargo. Of these steamships 21 proceeded from the Plate to Europe on their homeward voyages, carrying approximately 160,000 tons of cargo, and the remainder to the U.S., with homeward cargoes totalling 588,000 tons. We inaugurated a regular monthly service between the River Plate, Antwerp and other European ports in February, and will place on this run refrigerated cargo steamships capable of lifting approximately 3,000 tons of frozen beef, loading such general cargo as may be available. Further, cargo steamers will be added to this service from time to time, there being an ample reserve to care for cargo offerings.

Following its policy of encouraging established U.S. steamship companies rather than competing with them, the board will place in service under the management of W. R. Grace & Co., the Santa Theresa and the Santa Elisa, both 13 knot ships, now reconditioning after release from army service. These, together with the Santa Luisa and the Santa Ana, now operated by W. R. Grace & Co., are combination freight and passenger ships built especially for this trade. They will call at Callao, Arica, Iquique, Valparaiso, and will furnish a sailing every two weeks from New York. A sister ship, the Santa Leonora, still in the army service, will be added to these as soon as possible.

During 1919, 62 Shipping Board steamships loaded from U.S. ports to the west coast, carrying 179,000 tons southbound and 196,000 tons northbound. Such additional cargo steamers as this business requires will be allocated as needed. We are asked why we do not allocate the ocean greyhounds like the Leviathan to this service. There are certain physical difficulties, such as the fact that at Rio the depth of water is only 26 ft., that makes this impossible. Our friends in South America will know from this frank statement that if our own ability to supply this service could keep pace with our desire, they would have nothing to desire, and if they have any suggestions which they desire to have us consider, they will find the members of the board receptive and appreciative.

The question of national policy involved in the ownership and operation of passenger and cargo steamships constituting a merchant marine is one now occupying the earnest attention of the President and the Congress. It is hoped that the merchant marine may be owned and operated by private persons and corporations rather than by the government. As a step in this direction, we have advertised for sale 30 of our ex-German passenger ships and if these are sold, we hope to follow this by the sale of our remaining passenger vessels. This, however, will not affect the shipping programme which is here discussed. It is provided that the ships, if sold, are to be sold with reference to the particular routes selected and assigned by the Shipping Board, and whether we sell the ships to private persons or operate them by the board, the service here indicated will be carried out, and the board will see to it that the growing needs of South America are served by the U.S.

# Canada Steamship Lines' Annual Report.

Following is the report for the calendar year, 1919:—The net earnings were $4,580,272.96 and the net profit $2,336,679.12 after deducting all fixed charges, including depreciation, making ample provision for government war taxes and providing reserves for all possible liabilities. Your directors are pleased to advise that both freight and passenger earnings have been eminently satisfactory during the past year. Considering that this is the first year that the company has operated its enlarged system under peace conditions, these results must be regarded as gratifying, and on this account there is every justification for looking to the future with confidence.

In conformation with our announced policy of extending the company's field of operations abroad, thus co-ordinating Great Lakes, river and ocean traffic, your directors have inaugurated several new services between Canada and Europe, and between New York, West Indies and South America, through the purchase of modern steamships. Some of these ships have passenger accommodation, as it is the belief of your directors that the immigration business will assume large proportions. The results obtained have already justified the policy adopted. The ocean services, besides enjoying a substantial revenue, have contributed to the increased earning power of all branches of the company's operations. The increase in the 1918 vessel property is $5,619,247.83; the increase in fixed assets indicated under the heading "Real estate, buildings, docks and wharves" is $296,872.57, and the increase in other fixed assets, etc., is $398,343.27, the last two increases being attributable very largely to extensions made to our shipbuilding plant at Three Rivers.

After careful consideration, your directors have decided to place the common shares on a 7% per annum basis, payable quarterly.

All the company's properties have been thoroughly maintained and are in good condition.

The following statements include Canada Steamship Lines Ltd., and subsidiary companies.

**Assets:**

| | | |
|---|---|---|
| Fixed assets: | | |
| Ships at Dec. 31, 1918 | | $20,078,575.98 |
| Add net additions for year, being excess of additions to fleet, over ships lost and sold | | 5,619,247.83 |
| | | $25,697,823.81 |
| Real estate, buildings, docks and wharves, as at Dec. 31, 1918 | $6,054,144.53 | |
| Add net additions for year | 296,872.57 | 6,351,017.10 |
| Other fixed assets as at Dec. 31, 1918 | 1,034,649.21 | |
| Add net additions for year | 398,343.27 | 1,432,992.48 |
| | | $33,481,833.39 |
| Less depreciation reserve | | 4,564,921.29 |
| | | $28,916,912.10 |
| Current and working assets: | | |
| Cash in banks and on hand | $ 565,515.65 | |
| Cash in hands of debenture stock trustees (since released to company) | 733,607.18 | |
| | $1,299,122.83 | |
| Canadian and U.S. war loan bonds | 175,000.00 | |
| Accounts receivable, less reserve for doubtful accounts | 1,936,755.53 | |
| Adjusted losses due by underwriters | 370,479.17 | |
| Insurance and other claims, estimated amount recoverable | 1,223,505.02 | |
| Interest receivable accrue | 45,190.32 | |
| Inventories of stores and supplies and shipyard work in progress | 816,820.64 | 5,866,873.51 |
| Charges deferred to future operations: | | |
| Insurance unexpired | $ 602,476.51 | |
| Repairs, etc., applicable to 1920 | 122,464.05 | |
| Miscellaneous | 33,578.93 | 758,519.49 |
| Investments | | 551,709.32 |
| Funds deposited with trustees for mortgage bonds and debenture stock | | 38,517.79 |
| | | $36,132,532.21 |
| Leases, contracts and goodwill | | 8,424,646.79 |
| | | $44,557,179.00 |

**Liabilities:**

| | | |
|---|---|---|
| Capital stock: | | |
| 125,000 shares 7% cumulative preference stock of $100 each | | $12,500,000.00 |
| 120,000 shares common stock at $100 each | | 12,000,000.00 |
| | | $24,500,000.00 |
| Funded debt: | | |
| 5% debenture stock | $7,120,506.66 | |
| Less amount held in treasury | $598,400.00 | |
| Amount retired by operation of sinking fund | 763,373.98 | 1,361,773.98 |
| | | $5,758,732.68 |
| First mortgage bonds | 2,220,886.70 | 7,979,619.38 |
| Current and accrued liabilities: | | |
| Bank loan | $ 700,000.00 | |
| Accounts payable | 2,647,327.39 | |
| Bond interest accrued | 155,828.55 | |
| Government war tax reserve | 1,215,668.86 | |
| Preference dividend declared (payable Jan. 2, 1920) | 218,750.00 | 4,937,574.80 |
| Balances of uncompleted voyages | | 232,629.98 |
| Reserves: | | |
| For freight and other claims | $ 10,000.00 | |
| For premium on redemption of Richelieu and Ontario Navigation Co. bonds | 1,557.76 | |
| Surplus arising from sinking fund purchases of debenture stock | 130,886.17 | 142,443.93 |
| Surplus | | 6,764,910.91 |
| | | $44,557,179.00 |

Contingent liabilities—None ascertained.

**Operating Account for year ended Dec. 31, 1919.**

| | | |
|---|---|---|
| Operating revenue: | | |
| Ships | | $14,495,657.82 |
| Docks and wharves | | 238,426.45 |
| Miscellaneous | | 305,192.45 |
| | | $15,039,276.72 |
| Other revenue | | 201,137.37 |
| Total revenue | | $15,240,414.09 |
| Expenses | | 10,660,141.13 |
| Net earnings | | 4,580,272.96 |
| From which deduct: | | |
| Interest on mortgage bonds | $ 64,658.94 | |
| Interest on debenture stock | 293,305.15 | |
| Other interest | 2,980.69 | |
| Special bonus to employes | 47,687.95 | |
| Reserve for depreciation | 1,371,286.11 | |
| Reserve for doubtful debts and claims | 30,000.00 | |
| Directors' fees | 33,675.00 | |
| Reserve for government war taxes | 400,000.00 | 2,243,593.84 |
| Profit for year | | $ 2,336,679.12 |

**Surplus Account, Dec. 31, 1919.**

| | | |
|---|---|---|
| Balance at Dec. 31, 1918 | | $ 5,009,630.64 |
| Profit for year ended Dec. 31, 1919, as per account | $2,336,679.12 | |
| Net profit on sales, etc., of fixed assets | 773,601.15 | 3,110,280.27 |
| | | $ 8,119,910.91 |
| Deduct: | | |
| Dividends for year ended Dec. 31, 1919: | | |
| Preference stock 7% | $ 875,000.00 | |
| Common stock 4% | 480,000.00 | 1,355,000.00 |
| Surplus as per balance sheet | | $ 6,764,910.91 |

The total revenue, an increase of about $1,150,000 over 1918, was the largest in the company's history. Operating expenses, however, increased $903,828, the ratio of these to revenue being approximately 70% against 70.3% in 1918 and 71.1% in 1917.

The net profits increased $12,581 over 1918, the earnings being at the rate of approximately 12.2 on the common stock, against 11.3 in 1918.

Although the year was a highly prosperous one, the position as to working capital underwent considerable impairment as compared with the end of 1918. Current assets increased by upwards of $400,000, but liabilities of the same classification grew from $2,602,725 at Dec. 31, 1918, to $4,937,575 on Dec. 31, 1919, an increase of $2,334,850. This was due chiefly to upwards of $1,300,000 in accounts payable and bank loans of $700,000, no obligations of the latter class appearing in last year's statement. The position as to working capital as indicated in the balance sheets of the two years is shown in the following:

| | 1919. | 1918. |
|---|---|---|
| Assets | $5,866,873 | $5,438,976 |
| Liabilities | 4,937,575 | 2,602,725 |
| Working capital | $ 929,298 | $2,836,251 |

The impairment in the way of working capital is reflected in an increase in fixed assets during the year, which stand at over $5,000,000 higher than at the end of 1918, their valuation of $28,916,912 being reached after allowance was made for depreciation reserve of $4,564,921. These additions to the company's fleet and other properties are also indicated in an increase of nearly $1,500,000 in first mortgage bonds outstanding, these amounting to $2,220,886, against $757,020 at Dec. 31, 1918.

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**Arctic Ice Conditions**—Newfoundland newspapers state that ice conditions in the Arctic this year are the most severe in the memory of those having to do with them. The solid pack is reported to extend to eight miles south of Wainwright, about 100 miles north of Point Lay. Officers of the patrol ship Bear, who say that the pack extends farther south this season than any year in their experience, report that the lower edge of the pack is literally black with walrus and other animals, indicating that the ice is solid for a great distance north, as the walrus stay close to open water.

**Quebec Shipping Corporation, Ltd.,** has been incorporated under the Dominion Companies Act, with $1,000,000 authorized capital, and office at Montreal, to build, own and operate steam and other ships of every description, and carry on a general transportation business within and without Canada. The incorporators are: L. Mcfarlane, K.C.; G. Barkeley, W. B. Scott, A. Knatchbull-Hugessen and J. G. Cartwright, Montreal.

# Vancouver Drydock to be Built by J. Coughlan and Sons, Ltd.

The Dominion Government passed the following order in Council, no. 413, Feb. 21:—The committee of the Privy Council have had before them a report, dated Feb. 19, from the acting Minister of Public Works, submitting as follows: That application has been made by J. Coughlan and Sons, under the Dry Dock Subsidies Act, 1910, chap. 17, and under chap. 51, 1919, an act to amend the Dry Dock Subsidies Act, 1910, for a subsidy for the construction of a dry dock and appurtenant works at Vancouver, the dimensions of the proposed dry dock are as follows:

Length from caisson stop to head wall..... 725 ft.
Length from back of sill to head wall.....700 ft.
Clear width of entrance at bottom.....110 ft.
Width of entrance at top.....116 ft. 2½ in.
Depth over sill at extreme high water.... 32.23 ft.
Depth over sill at higher water (equivalent to high water ordinary spring tide)..... 30 ft.

The entrance to the dock will be closed by a steel or wrought iron floating caisson. The width of the dock proper, at coping level, will be 129 ft. with 110 ft. clear width from altar at sill level. The floor of the dock will be 4½ ft. below the level of the entrance sill, and will have a fall of 6 ft. from the center to the side drains. The detailed estimated cost of the dock and appurtenant works are given respectively by the applicant company and the Chief Engineer of the Public Works Department as follows:

| | Applicant's | Chief Engineer's |
|---|---|---|
| Drydock | $1,468,898 | $1,244,245.50 |
| Drydock equipment | 94,000 | 88,500.00 |
| Buildings and equipment | 725,499 | 559,152.00 |
| Piers and dredging | 502,410 | 460,500.00 |
| Marine railway | 309,800 | Nil |
| Land | 323,800 | 100,000.00 |
| Engineering and supervision | 128,237 | *117,619.88 |
| Contingencies | 168,083 | ..... |
| | $3,720,727 | $2,570,017.38 |

*Engineering, supervision and contingencies on items 1, 2, 3 and 4.

The proposed dock will come, therefore, within the second class, and the subsidy to be allowed under the Dry Dock Subsidies Act, 1918, sec. 8, subsec. 1, paragraph b, as amended in 1919 by chap. 51, is 4½% on $2,500,000 for 35 years, with provision for half-yearly payments on account of the subsidy at the rate mentioned, on 75% of the cost of all work done and materials provided at the time of such payment, such progress payments to be made when the work done and materials provided shall have cost at least $500,000. The Public Works Department's Chief Engineer reported on Dec. 19, 1919, that the proposed dock is to be built on the main harbor front, in the immediate vicinity of the government wharf, that the site is easy of access for vessels, that there is sufficient room for shops and plant for handling repairs; and that the location is well situated in regard to railway accommodation. The Chief Engineer also reported on Nov. 24, 1919, in accordance with the requirements of the said acts, that the construction of the drydock at Vancouver is required in the interests of commerce. He certifies that the proposed drydock is of sufficient capacity to meet the public requirements of Vancouver. He has likewise recommended that if the application be granted the following conditions be imposed, in addition to those mentioned in the act: That further detailed plans of the work to be done be supplied when requested by the Chief Engineer. That the applicants commence work within six months from the date of the signature of the subsidy agreement. That the applicants fully complete the graving dock, installation of machinery, etc., within two years from the date of the signature of the subsidy agreement. That the applicants agree to give any desired assistance to the departmental inspectors during construction. That the drydock and appurtenant works must be maintained in good condition and to the satisfaction of the Public Works Department's Chief Engineer, who is to be the sole judge as to what repairs and renewals are necessary.

It is to be noted that the drydock proposed by J. Coughlan and Sons, will have the following dimensions:

Length from caisson stop to head wall.....725 ft.
Length from back of sill to head wall.....700 ft.
Clear width of entrance at bottom.....110 ft.
Depth over sill at high water, o.s.t..... 30 ft.

While the minimum dimensions for drydocks of the second class are fixed, under the act, as follows:

Length from caisson groove to head.....650 ft.
Clear width at entrance ..... 85 ft.
Depth over sill at high water, o.s.t..... 30 ft.
Depth of water over sill at ordinary low water in nontidal waters ..... 25 ft.

It will therefore be seen that the dimensions of the Coughlan dock are considerably larger than the standard dimensions of a second class dock. The dock proposed can accommodate the largest vessels on the Pacific coast, plying between Vancouver and the Orient. The largest two are the Empress of Russia and the Empress of Asia, owned by the C.P.R., which are each 590 ft. long, and 68 ft. wide. Their net registered tonnage is 16,580 and they have a displacement of 30,625 tons.

The subsidy in the case of a first class dock is 4½%, on a maximum of $5,500,000, or $247,500 a year, for 35 years. The subsidy on second class docks is 4½%, on a maximum of $2,500,000, or $112,500 a year, for 35 years, and the difference between the first and the second drydock subsidy is therefore $135,000 a year, representing at 5½% a capital investment of $2,454,545.

Graving docks, when site and foundation are favorable, and easily accessible of approach, constitute in general the most satisfactory solution of the problem of docking large vessels, and the conditions obtaining with the present proposed dock are entirely in accord with the above.

While the Dry Dock Subsidies Act provides as stated above for the payment of half yearly subsidies during progress of construction, J. Coughlan & Sons, have waived this provision and desire payment of the subsidy only on the entire completion of the dock. J. Coughlan & Sons have been incorporated as J. Coughlan and Sons, Ltd., under the British Columbia Companies Act as a limited company, and have submitted evidence to that effect, in accordance with the provisions of the Dry Dock Subsidies Act, 1910, sec. 3, but it will be necessary for the company to secure Dominion incorporation as well, before a subsidy agreement can be executed with it.

The Minister considers that J. Coughlan and Sons, Ltd., have the ability to construct a drydock and appurtenant works at Vancouver, as referred to, and he recommends, in the circumstances, that an agreement be entered into with the company in the usual form, when it shall have secured Dominion incorporation, for the payment to it by the Dominion Government for 35 years, of an annual subsidy of 4½% on the cost of the said works, when constructed in accordance with the plans and specifications attached hereto, such cost for the purpose of determining the subsidy being fixed at $2,500,000 the payment of the subsidy to be subject to the provisions of the Dry Dock Subsidies Act, 1910, and the amending act of 1919 mentioned. It is to be understood, however, that no advances during the construction of the dock, as provided under the Dry Dock Subsidies Act, 1919, sec. 2, are to be made to the company and that the subsidy shall become payable only on the full completion of the dock; the payment of the subsidy to be subject to the further following conditions: That further detailed plans of the works to be done be supplied when requested by the Chief Engineer. That the company commence work within one month from the date of the signature of the subsidy agreement. That the company fully complete the graving dock, installation of machinery, etc., within two years from the signature of the subsidy agreement. That the company agree to give any desired assistance to the departmental inspectors during construction. That the drydock and appurtenant works must be maintained in good condition and to the satisfaction of the Public Works Department's Chief Engineer, who is to be the sole judge as to what repairs and renewals are necessary.

The committee concur in the foregoing recommendation and submit the same for approval.

**Other Applications.** As stated in Canadian Railway and Marine World for Nov., 1919 and Jan., 1920, other applications for aid under the Dry Dock Subsidies Act for the construction of drydocks at Vancouver were made as follows:

Davidson and Cameron—For a concrete graving dock, 1,150 ft. long, 125 ft. wide at the entrance, 38 ft. depth of water over sill at ordinary spring tide, to be built at Deadman's Island, at an estimated cost of $6,600,000.

Wallace Shipyards Ltd.—For a floating drydock of 15,000 tons capacity, to be built just east of the ferry landing at North Vancouver, at an estimated cost of $3,500,000.

Raymond Concrete Pile Co., Montreal —For a masonry graving dock of the first class at Burrard Inlet.

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**Kingston Harbor Improvements**—As stated in Canadian Railway and Marine World for February, pg. 92, plans of improvements proposed at Kingston, Ont., to provide facilities for trans-shipping cargoes arriving through the new Welland Ship Canal, as approved by the Public Works Department's District Engineer, an engineer engaged by the city of Kingston, and engineers for the three railway companies, were submitted to the Dominion Marine Association at its annual meeting and were referred to its executive committee. We are advised that it is not expected that any appropriation will be made by the Dominion Parliament for the proposed work this year, as it appears to have been decided that there will be ample time to do the work prior to the completion of the new canal.

## National Association of Marine Engineers of Canada.

Ottawa press dispatch, Feb. 20.—The Grand Council of the National Association of Marine Engineers of Canada has concluded its biennial convention session. P. M. Draper, Secretary, Trades and Labor Congress, addressed the council, pointing out the advantages that would accrue from affiliation with that body, and the council decided to affiliate.

Proposed amendments to the Canada Shipping Act regarding conditions of employment, and wages paid on government steamers, were discussed and a deputation was appointed to wait on the Marine, Public Works and Railways and Canals Departments. Representations are to be made to the departments concerned on the variance in rates of pay on the Atlantic coast as compared with the Pacific. Marine engineers leaving Vancouver at certain rates of pay are, it is claimed, on reaching Atlantic ports, compelled to take their choice of considerably lower rates or make their way back to Vancouver at their own expense, and the council is attempting to establish a universal scale of wages throughout the country.

Wages and living conditions on government owned boats, as compared with those privately owned, were discussed, and representations will be made to the departments concerned with regard thereto; also as to lake boats not being fully manned at times.

The following officers were elected: Grand President, E. Reed, Vancouver; Vice President, Eugene Hamelin, Montreal; Secretary-Treasurer, N. J. Morrison, St. John, N.B.; Grand Conductor, A. E. House, Midland, Ont.

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**The Lord Strathcona Steamship Co. Ltd.** has been incorporated under the Dominion Companies Act with $1,500,000 authorized capital, and office at Montreal, to own and operate steam and other ships of every description, and carry on a general transportation business on land and water. The incorporators are: A. R. Holden, C. G. Heward, H. W. Shearer, A. B. Wright, and C. Arnold, Montreal.

**Tugs for Fisheries Protection Service on Lake Erie**—With reference to the advertisement published in Canadian Railway and Marine World for January, inviting tenders for the construction of 3 first class single screw tugs to be delivered at Port Stanley, or Kingsville, Ont., we are officially advised that, since tenders were invited, 3 ships, already belonging to the government, and which can be utilized for the purpose, have been made available to the Marine Department unexpectedly, and that it is not proposed to accept any of the tenders received.

## Suggested Restrictions Favoring U.S. Ships on the Pacific.

Will Clark, who is described in a Washington, D.C., press dispatch of Feb. 20, as "of the Pacific Coast Steamship Co., Seattle, Wash.," is said to have told the U.S. Senate's Commerce Committee that amendments to the U.S. coastwise navigation laws are needed to prevent Canadian railways participating, through their ships, in the trade between the U.S. and Alaska, that present restrictions confining coastwise trade to U.S. ships are being evaded under departmental rulings, and that during the war Canadian ships were left in the trade, while U.S. ships were taken off and put into war service. He advocated the barring of all ships from the trade between the Phillipine Islands and the U.S. except those owned by U.S. citizens. Senator Chamberlain, democrat, Oregon, suggested that freight rate regulation might be required under the circumstances, but Clark said that he considered shipping should be free from rate regulation for the present.

The latest editions of official guides do not show any Will Clark as being a Pacific Coast Steamship Co. official.

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**Sales of Trawlers**—The steam trawler T.R. 57, which the Anderson Co. of Canada, Montreal, has sold to the Gulf Export and Transportation Co., Beaumont, Texas, was expected to clear from Halifax, about the end of February for Beaumont, and to make the trip of approximately 3,000 miles in 13 days, including the time which she would be tied up at the mouth of the Mississippi River. The trawler T.R. 41, which was sent to Europe for exhibition purposes, as stated in our last issue, arrived at Boulogne-sur-Mer, France, Feb. 11, having made the voyage from Halifax, N.S., in 15 days, which is considered remarkable performance for a ship of this type, at this time of the year.

**Forester Navigation Co. Ltd.** has been incorporated under the Dominion Companies Act, with $47,000 authorized capital, and office at Sussex, N.B., to build, own and operate steam and other ships for the conveyance of passengers and merchandise, and to act as a common carrier. The incorporators are: N. G. White, H. H. Reid, Sussex, N.B.; J. A. Cleveland, F. P. Keirstead, Alma, N. B.; G. W. Smith, Apple River, N.S.

**Chignecto Lighterage Co. Ltd.** has been incorporated under the Dominion Companies Act, with $40,000 authorized capital, and office at Sussex, N.B., to own and operate steam and other ships of every description and carry on a general navigation business. The incorporators are: W. Thompson, Sussex, N. B.; J. A. Cleveland, Alma, N.B.; E. Taylor, G. W. Smith, Apple River, N.S.; and W. E. Moore, Point Wolfe, N.B.

## Canadian Shipping Losses During the War.

Canadian Railway and Marine World for January, contained some official information of Canadian merchant shipping losses, which occurred during the war, as supplied to the British House of Commons by the Admiralty. The list, as then published, did not purport to be a complete as to all Canadian ships lost during war time, but dealt with those which were actually lost by enemy attack, either by submarine or mine. Some figures published recently show that 149 steamships, operating on the Great Lakes, passed out of the St. Lawrence to the ocean, primarily for war purposes. It is estimated that the loss of Great Lakes steamships amounted to 297,103 gross tons, with a carrying capacity of 432,400 tons. Of the total number of steamships leaving the Great Lakes for war purposes, it is stated that 64 were of Canadian registry, of which 44 were bulk freight steamships representing 157,366 gross tons, with carrying capacity of 244,500 tons. Among the Canadian steamships lost, either through enemy action or from other causes, are mentioned the following: Carleton, Chemung, A. D. Davidson, Donnacona, Dunelm, W. H. Dwyer, George L. Eaton, Empress of Fort William, Empress of Midland, C. A. Jaques, Midland Queen, Northmount, Port Dalhousie, Scottish Hero, Stormount, Strathcona, Algonquin, Fairmount, Meaford, etc.

Several Canadian ships which went overseas during the war are still in service under British control, and it is not expected that many, if any, of them will return to the Great Lakes.

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**The Dominion Government s.s. Montcalm**, which, as announced in our last issue, became icebound while on a trip to the Magdalen Islands with winter supplies, and which, it was reported, was ordered to abandon the trip and return to Halifax, N.S., was reported to have arrived within half a mile of Grindstone Island, Feb. 22, and was then unloading supplies on the ice. The Montcalm left Souris, P.E.I., Jan. 24, and became icebound three days later, having only made 25 miles in that time. She was then allowed to drift with the ice, and was carried past Cape North and into Cabot Strait, where gales scattered the ice and allowed her to proceed to the Magdalen Islands.

**German Steamship Sales in United States**—The U.S. Government requested tenders recently for the acquirement of several German steamships which have been allocated to it under the terms of the peace treaty, but owing to some political dissensions, the Senate requested that the sale be deferred until it is prepared to take some definite action in the matter. Several bids were received, including one of $14,050,000 for 9 steamships for service between North America and United Kingdom and northern European ports, from the International Mercantile Marine Co., and another of $13,100,000 for 6 steamships, from the same company. The Oriental Navigation Co. offered $700,000 for the s.s. Black Arrow, trading recently in the Black Sea service, with the condition that she be retained in that service. An injunction was applied for to restrain the proposed sale, and it was later decided to decline all tenders and discuss the sale further.

## Ships Built in 1919 and Exported Without Being Registered in Canada.

The following information has been furnished by the Marine Department:

| From ports in: | Sailing Wood No. | Sailing Wood G.T. | Sailing Wood N.T. | Steam Wood No. | Steam Wood G.T. | Steam Wood N.T. | Steam Steel No. | Steam Steel G.T. | Steam Steel N.T. |
|---|---|---|---|---|---|---|---|---|---|
| Nova Scotia | 2 | 747 | 747 | 2 | 4,593 | 2,761 | .... | ..... | ..... |
| New Brunswick | .. | ..... | ..... | 5 | 11,525 | 6,999 | .... | ..... | ..... |
| Quebec | .. | ..... | ..... | 10 | 13,776 | 8,102 | 7 | 21,534 | 11,265 |
| Ontario | .. | ..... | ..... | .... | ..... | ..... | 8 | 10,545 | 6,083 |
| British Columbia | .. | ..... | ..... | 43 | 82,818 | 50,660 | 3 | 17,245 | 12,723 |
| Total | 2 | 747 | 747 | 60 | 112,712 | 68,522 | 18 | 49,324 | 30,071 |

| | No. of vessels. | Gross tonnage. | Net tonnage. |
|---|---|---|---|
| Grand Total | 80 | 162,783 | 99,340 |

## Ships Built in Canada in 1919 for Overseas.

According to figures supplied by the Marine Department, there were built in Canadian shipyards last year 80 ships which were sent overseas without being registered in Canada. A considerable proportion of these were built for French interests and there were several for the Imperial Munitions Board, as well as two or three for Norway. The total net tonnage of the ships that left the country was 99,340, including wooden sailing ships, wooden steamships and steel steamships. Of wooden sailing ships there were only two built viz., in Nova Scotia, and were 747 net tonnage.

The number of wooden steamships built was 60, with a total net tonnage of 68,522. Of these British Columbia sent 43, with 50,660 net tonnage; Quebec built 10; New Brunswick 5, and Nova Scotia 2. Ontario built none.

There were 18 steel steamships built with total net tonnage of 30,071. In this class Ontario built 8, total net tonnage 6,083; Montreal built 7, total net tonnage of 11,265; and British Columbia built 3, total net tonnage 12,723.

These figures relate only to ships built in 1919 to overseas orders. The orders for the British Government were all carried out by the Imperial Munitions Board. An order from the French Government for 50 wooden ships for the Mediterranean explains the activity of Pacific Coast and Quebec yards in wooden shipbuilding. The Quebec orders were filed by Fraser Brace & Co., Montreal, and Tidewater Shipbuilders Ltd., Three Rivers.

## Canadian Notices to Mariners.

**New Brunswick, Grand Manan Island**—To increasing the audibility of the fog signal at Swallow-Tail light station, to the northward and westward, the bell, which is 450 ft. southerly from the lighthouse, will be moved closer to the lighthouse in the near future.

**Nova Scotia, South Coast, White Haven Harbor**—Uncharted shoal 4½ cables, 348° 30" (N. 13° E. mag.) from the most easterly extreme of Deming Point, east tangent of Fisherman Island, in line with west tangent of Sheep Island, depth 15 ft., shoal of small extent, smooth rock sloping off gradually on all sides to 6 fathoms.

**Nova Scotia, Sydney Harbor**—Owing to the pier at southeast bar light station having been damaged by storms, it may be found necessary to suspend operation of light on short notice, and if so, a temporary light will be exhibited from the old lighthouse and fog bell discontinued; the light will be of the 4th order, dioptric, fixed red, acetylene gas, at an elevation of 30 ft.

**Prince Edward Island**—The Souris east breakwater light has been moved to 60 ft. from the outer end of the breakwater.

**New Brunswick, Miramichi Bay, Portage Island range light.** Day beacon established on southern end of island; diamond shaped, wooden slatted, daymark on front range pole; color, white.

**Nova Scotia, St. Mary Bay**—Change in position of Grand Passage whistling buoy, on or about Mar. 1, to about 1,600 ft. east of present position, and one mile from Peter Island; color, black and white, vertical stripes.

**Quebec, River St. Lawrence, ship channel between Quebec and Montreal**—Cap a la Roche curve, change in numbers of buoys—On the opening of navigation, the following changes will be made in the numbers of Cap a la Roche curve buoys, black gas buoy 93½Q, will be 95Q; red gas buoy 94½Q, will be 96Q; black can buoy 95Q, will be 97Q; red conical buoy 96Q, will be 98Q; black gas buoy 97Q, will be 99Q; red gas buoy 98Q, will be 100Q; red spar buoy 100Q, will be 102Q.

**Quebec, St. Lawrence River, ship channel between Quebec and Montreal, Batiscan traverse,** change in character of buoy.—On opening of navigation, black spar buoy 111Q, will be replaced by a black can buoy.

**Ontario-Detroit River**—On the opening of navigation, a lightship will be established at the junction of Amherstburg and Livingstone channels, in position formerly occupied by U.S. lightship. She will be a wooden schooner with two masts, red painted hull, with "Bar Point No. 21" in white letters on each top side, with a red ball near the top of the foremast, and if for any reason she is off her station, the ball will be lowered. The illuminating apparatus will be dioptric, consisting of 3 fixed white lights round the foremast, visible all round the horizon, and elevated 30 ft. above water. During thick or foggy weather a steam whistle will give a blast of 10 seconds every 40 seconds.

**Ontario, Lake Superior, Thunder Bay and port Arthur harbor**—On the opening of navigation the red spar buoy 8A, on north side of channel, immediately inside breakwater, at main entrance channel, will be moved to a new position, 150 ft. from the lighthouse on north breakwater. The red spar buoys 2A and 4A, on north side of channel, at entrance to main harbor, will be discontinued.

**Appreciation of Canada's Aids to Navigation**—Capt. Griffiths, of Canadian Pacific Ocean Services' s.s. Scandinavin, while in Canada recently, stated that he had been sailing to the Dominion for 23 years, first on the Beaver Line's s.s. Lake Huron, and later on C.P.R. steamships, and fully appreciated the great improvement in the navigation aids along the Nova Scotia and New Brunswick coasts, especially the distance finding stations at Canso, Camperdown and Cape Race, from which points any steamship losing her bearings, through fog or other causes, can obtain her location by wireless.

**The Lady Mine Shipping and Fishing Co. Ltd.** has been incorporated under the British Columbia Companies Act, with $25,000 authorized capital, and office at Vancouver, B.C., to carry on a general fishing business, and to own and operate steam and other ships. The company has bought the schooner Lady Mine, from A. J. Bechtel, and is having her equipped with auxiliary power. She was built at Port Ludlow, Wash., in 1880, her dimensions being: length, 76 ft.; breadth, 21.9 ft.; depth, 8.4 ft.; tonnage 55 registered.

**Contracts for Marine Public Works**—The Dominion Public Works Department has let the following contracts: Lauzon, Que., construction of lavatories, etc., at Lorne drydock; Jos. Gosselin Ltd., Levis, Que.; Jan. 30, $3,150. Powell River, B. C.; construction of addition to wharf; Fraser River Pile Driving Co., New Westminster, B.C.; Feb. 7; schedule of prices.

## United States Shipping and Shipbuilding Notes.

The Atlantic Shipbuilders' Association announces that steel ships totaling close to 1,500,000 d.w. tons, or 1,000,000 gross tons, are being built in U.S. shipyards.

The U.S. Bureau of Navigation reports 112 sailing, steam, gas and unrigged ships of 253,579 gross tons built in the U.S. and officially numbered during Jan., 1920.

Rear Admiral Benson, Chief U.S. Naval operations during that country's participation in the war, and since on the retired list, has been selected by President Wilson to succeed J. B. Payne as a member of the U.S. Shipping Board.

C. W. Morse, head of 2 steel shipyards, told the U.S. Senate Commerce Committee, Feb. 7, that government owned ships built during the war should be, and could be, sold to private operators for prices covering the cost, overhead, and total investment.

The aggregate authorized capitalization of shipping and shipbuilding companies organized in the U.S. during January, was $76,305,000, the second highest investment in new shipping enterprise for any one month since the outbreak of war in 1914.

The U.S. Bureau of Navigation announces that the total number of masters, officers, and men required at present to man U.S. registered, enrolled, and licensed vessels, including 1,450 documented yachts, and aggregating in round numbers 15,325,000 gross tons, is about 266,000.

The U.S. Shipping Board announces that one of its committees has recommended awards totaling $12,089,149 on the claims of foreign ship owners for vessels and materials requisitioned during the war. Of a total of 55 claims filed by Norwegian, Russian, Italian, French and Danish interests, three were for ships and the remainder for shipbuilding materials.

The U.S. Commerce Department's reports state that steel merchant shipbuilding on a commercial basis in the U.S., is making steady progress, private shipyards on Feb. 1 having 183 steel ships of 791,911 gross tons for private shipowners under construction or under contract to build, compared with 165 ships, of 679,170 gross tons, on Jan. 1.

Chairman Payne, of the U.S. Shipping Board, has asked Henry M. Robinson, formerly Shipping Board Commissioner, to serve as chairman of a committee of bankers to discuss problem of obtaining a wide public interest in shipping securities with view to disposition of government fleet. It is anticipated that within the next few years vessels to value of more than $2,000,000,000 must be sold.

A Cleveland, Ohio, press dispatch says that shipbuilders on the Great Lakes turned out 188 steamships and 29 tugs during 1919, making a total of 217 ships for the U.S. Emergency Fleet Corporation for salt water service. Not all the ships that were ordered for 1919 delivery were completed, 57 steamships and 19 tugs being carried over. Not a single steamship was built for lake trade last season, as the yards were all busy on government work. A number of steamships have been ordered for salt water service for 1920 delivery, and some bulk freighters may be built for the lake trade this year.

# Mainly About Marine People.

Sir Montagu Allan, formerly of the Allan Steamship Line, was reported, Feb. 21, to be in a critical condition with pneumonia at Montreal. It was stated, the following day, that he had had a slight attack of influenza, but was convalescent.

Hon. C. C. Ballantyne, Minister of Marine, was the chief guest at a dinner given by the Canadian Federation of Returned Soldiers and Sailors at Montreal, Feb. 9. A day or two afterwards he was reported to be suffering from a mild attack of influenza, from which he recovered satisfactorily.

Henry Blackwell Beaumont, who has been appointed General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Montreal, was born there, Aug. 3, 1887, and entered steamship service in June, 1904, since when he has been, to June, 1909, clerk; June, 1909 to July, 1911, private secretary; July 11, 1919, to Jan., 1913, chief passenger clerk; Jan., 1913 to July 1917, City Passenger Agent, Allan Line Steamship Co., Montreal; July to Oct., 1917, City Passenger Agent, Canadian Pacific Ocean Services, Ltd., Montreal; Oct., 1917 to June, 1919, chief passenger clerk, same company, London, Eng., June, 1919, to Jan., 1920, Assistant to Passenger Manager, same company, London, Eng.

H. W. Cowan Director of Operation, Canada Steamship Lines, Ltd., Montreal, returned to Canada, Feb. 10, after a three months trip to Europe, in connection with the company's ocean services and connections.

B. Guerard, harbor master, Port Arthur, Ont., died there, Feb. 9, aged 94, from pneumonia.

James J. Lynch, Assistant Freight Claims Agent, Canada Steamship Lines Ltd., Montreal, died there Feb. 1, aged 31, from pneumonia, after a short illness. He entered transportation service with the G.T.R. at Hamilton, Ont., in the freight department, and was later in Central Illinois Ry. service at Chicago, Ill. He returned to Canada, as agent, Canada Lake Line, at Windsor, Ont., and was appointed to his last position early in 1919.

John A. Mara, who died in Victoria, B.C., Feb. 12, aged 79, was one of the pioneers of inland water navigation in British Columbia, and was one of the founders of the Columbia & Kootenay Navigation Co., of which he was President, when it sold out its steamboats, etc., to the C.P.R. He was born in Toronto in 1840 and on April 23, started from Queenston, Ont., with a party, travelling by the usual stage route to St. Paul, Minn. From there they proceeded to Georgetown on the Red River, and had to wait for the completion of a stern wheel steamboat, which was building for the trade. The party reached Fort Garry in May after a six weeks trip. Later on the steamboat was captured by Indians, and a number of the passengers and crew were murdered. They arrived at Fort Garry, now Winnipeg, on May 18 and left there June 2. They had Red River carts drawn by oxen, mules and horses, most of the carts being covered in. At night the transport was drawn up in a triangular group, with the carts in a wedge shape, with sufficient room for the animals to pass inside the area so provided, the tents being round the triangle. Outside sentries were posted to give warning of hostile attack. Fort Edmonton was reached without molestation, on July 21. There an exchange of carts took place for pack saddles, and a guide was secured to pilot the party to Tete Jaune Cache. As the party approached the foothills of the Rockies, the herds of buffalo and the numerous species of wild game gave place to mountain sheep, and the furred inhabitants of the foothills. Jasper House was reached by forest and swamp, and then the parties proceeded by the valleys of the Athabasca and Mayette Rivers to the Yellowhead Pass. Tete Jaune Cache was reached on Aug. 28, and then the parties divided for the descent of the Fraser River. With the exception of three men, the remainder got through in safety, and reached Quesnel on Sept. 11. Owing to the mines being closed, the majority went on to the coast to winter. Mr. Mara went into business at Yale. He was elected to the B.C. Legislature at the first election after that colony entered confederation, and remained a member until 1886, from which date until 1896 he represented Yale in the House of Commons.

W. Grant Morden, M.P., arrived in Montreal Feb. 17, from England. He was elected recently a member of the Dominion Steel Corporation's London, Eng., advisory committee, and is also a member of Canada Steamship Lines' London advisory committee.

Commander P. C. Musgrave, R.N., in charge of hydrographic survey work on the British Columbia Coast, died suddenly at Esquimalt, B.C., Feb. 17.

J. W. Norcross, President and Managing Director, Canada Steamship Lines Ltd., has been elected a director, Dominion Steel Corporation.

J. B. Payne, Chairman, United States Shipping Board, has been appointed U.S. Secretary of the Interior.

Jas. Playfair, President, Great Lakes Transportation Co., Midland, Ont., and Mrs. Playfair, are spending some time in California.

H. B. Smith, President, Collingwood Shipbuilding Co., and Northern Navigation Co., also a director of Canada Steamship Lines, has bought a house on St. Clair Ave., Toronto, and will remove there, with his family, from Owen Sound, Ont., in the spring.

W. L. Stamford, heretofore Assistant Engineer, Dominion Marine Department, Victoria, B.C., was presented with a smoking set, by the department staff there, Feb. 12, on leaving for Prince Rupert, B.C., where he has been transferred as engineer.

P. D. Sutherland, whose appointment as General Passenger Agent for the Orient, Canadian Pacific Ocean Services, Ltd., Hong Kong, China, was announced in our last issue, was born at Toronto, Nov. 2, 1879, and entered C.P.R .service in the General Freight Department, under his father, J. N. Sutherland, subsequently transferring to the Passenger Department at St. John, N.B., where he spent four years in the City Ticket Office, and the West St. John Atlantic Terminal, and was then transferred to Toronto as chief clerk in City Passenger and Ticket Agent's office, and was from 1906 to Feb. 1, 1920, General Agent, Passenger Department, C.P.O.S., Hong Kong.

Mrs. C. J. Thorley, who died in Toronto Feb. 25, aged 86, from pneumonia, was the mother H. G. Thorley, Passenger Agent for Ontario, International Mercantile Marine Co.

J. W. Troup, Manager, British Columbia Coast Service, C.P.R., Victoria, returned to Canada, Feb. 7, via New York, from Great Britain, where he had been in connection with the possible building of an additional steamship for the service to northern B.C. ports.

Jas. Watson, returned soldier, Toronto, has been appointed junior draftsman, Marine Department, Ottawa, at an initial salary of $900.

## Shipping Federation of Canada.

The report for the past year, presented at the annual meeting at Montreal, Feb. 11, showed that additional new tonnage is coming on the market, and competition for the freight offering is increasing, that freight rates are tending downward and operating expenses upward. During 1919 shipping conditions at Montreal were reported good, with a good supply of freight and passenger traffic, which was limited only by a shortage of steamships. The value of exports from Montreal is given as $700,000,000, thus placing it the second North American port, regarding value of exports. Pilotage conditions were unsatisfactory, especially in Montreal district, as the pilots had commenced pooling their earnings in a similar manner to that adopted in the Quebec district, and this had a tendency toward lack of incentive and increase of slothfulness. The shipping interests, therefore, petitioned the government to throw open the pilotage districts of Montreal and Quebec, by abolishing the compulsory payment of pilotage dues, and it is said that this will be taken up during this year. There were no labor disturbances at Montreal during 1919, the various unions having kept to their agreements. The report was signed by John Torrance, President, who has now retired and who was not at the meeting, being in the south on account of ill health. A resolution was passed expressing regret at his retirement, coupled with the hope that his health will soon be restored.

Officers for this year were elected as follows: President, R. W. Reford; Treasurer, J. R. Binning; Assistant Treasurer, E. W. Foulds; executive council, J. R. Binning, D. W. Campbell, P. A. Curry, A. E. Cook, W. R. Eakin, A. M. Irvine, A. MacKenzie and R. B. Teakle.

**Dominion Marine Association's Activities**—At a meeting of the executive committee in Montreal, Feb. 13, a committee, consisting of H. W. Cowan, Canada Steamship Lines, T. R. Enderby and L. Henderson, Montreal Transportation Co., Francis King, the association's General Counsel, and two Ottawa members, were appointed to wait upon certain ministers and officials at Ottawa, with regard to important pending questions, including the completion of the Port Colborne elevator, and transhipping matters at that point, regulations for steamboat inspection, ice breaking at the head of the Great Lakes, the Canadian Wheat Board, pilotage on the St. Lawrence River, and several other matters.

# General Shipbuilding Matters Throughout Canada.

Alberta Motor Boat Co., Edmonton, Alta., is reported to be building a number of motorboats for service on the northern lakes and rivers to the Arctic Ocean, and one for a private owner, who intends operating it on northern waters during the summer.

Canadian Allis-Chalmers Ltd., Bridgeburg, Ont., which, as announced in previous issues is building 2 steel steamships, similar to the 2 built recently for the British Government, under orders from the Imperial Munitions Board, has sold them to the American Metal Transport Co., New York. They are being being built under yard nos. 302 and 303, the keel of the first having been laid in Mar., 1919, and that of the second in Nov., 1919. It is expected that the first one will be launched during April, and completed in June, while the other will follow about two weeks later.

Cholberg Ship Co., Victoria, B.C.—In connection with the building of 4 wooden auxiliary powered schooners at this yard, under the Dominion Government's loan scheme, as outlined in our last issue, British Columbia Shipowners Ltd., has been organized to finance and control the construction. It is stated that, in addition to a number of local business men, several of those who will be engaged on actual construction of the vessels, as well as of those who will supply material, have taken shares. The company's directors are: R. P. Butchart, S. Hoard, Capt. H. C. Hansen, W. Mead, Capt. M. D. Harbord, F. Pemberton and W. Spencer.

Dominion Shipbuilding and Repairing Co. Ltd. has been incorporated under the Dominion Companies Act with $3,000,000 authorized capital, and office at Toronto, to build, own and operate steam and other ships of every description, and carry on a general shipbuilding, shipowning, transportation and forwarding business. The new company is a reincorporation of the Dominion Shipbuilding Co., with extended powers and increased capitalization, and will take over the whole of the latter company's assets and continue its business.

Dominion Steel Corporation, Sydney, N.S., is, a press reports states, considering the construction of a drydock and shipbuilding plant at South Bar, Sydney, and that dredging will be started there in the near future. Sydney officials of the company, are reported as stating that they have no knowledge of the proposal.

Foundation Co. of British Columbia Ltd., Victoria, B.C.—It was reported recently that negotiations were proceeding with the company by Capt. E. V. Argon, on behalf of French interests, for the purchase of the company's shipyards at Victoria. It is stated that appraisers have been over the plants at Point Ellice and Point Hope, and that considerable French capital is behind the project. The building of wooden steamships will, it is said, be carried out on a large scale. A press dispatch of Feb. 20, states that the company has declined the offer made, and that the yards will be dismantled.

Halifax Shipyards Ltd., Halifax, N.S.—At a meeting of the Halifax Board of Trade, Feb. 3, a letter was read from J. E. McLurg, General Manager, Halifax Shipyards, Ltd., and a member of the board's council stating that it is the company's intention to place a floating drydock, with a capacity up to 20,000 tons, in the harbor shortly, and that the company's representatives are in Great Britain, in connection with the acquisition of such a dock. We are officially advised that Mr. McLurg has been misquoted in the press report, and that he did not say that the company will build a 20,000 ton drydock. It is reported that negotiations are proceeding between the company and the British Government for acquiring one of the floating drydocks, which Germany has surrendered to the allies, under the terms of the peace treaty.

Steel cargo steamship Canadian Raider, approximately 5,100 d.w. tons, for Canadian Government Merchant Marine Ltd., built by Wallace Shipyards Ltd., North Vancouver, B.C., loading lumber at Dominion Government dock, Vancouver.

During February work was carried out on the United States Shipping Board's s.s. Buffalo Bridge, a new tail shaft and propeller being fitted. Canadian Government Merchant Marine s.s. Canadian Spinner was also overhauled, after her experience in the ice in the Gulf of St. Lawrence during January, and she is awaiting a new rudder stock which is being made at New Glasgow, N.S. The U.S. steamship Wakulla was also drydocked during February, for examination and overhaul, as was also the Quebec Steamship Co.'s s.s. Kamerina. The last mentioned vessel, it is said, is to be practically refitted internally, and up to date accommodation provided for 100 passengers, comprising staterooms, cabins, dining room, smoking room and crews' quarters.

J. E. McClurg, General Manager, in speaking at a dinner given on Feb. 20, by the company's departmental heads, is reported to have said: "We are builders, not bankers. The French are anxious to place orders and the Halifax Shipyards could accept them, but for the present condition of exchange. The payment would be in French bonds, but not at the existing exchange. They want the bonds taken at a rate to be agreed upon, but that is a hopeless proposition." He expressed the belief that the plant would be the best in Canada and the equal of any on the Atlantic coast.

Nova Scotia Steel & Coal Co., New Glasgow, N.S., laid the keel for a steel cargo steamship; builder's yard no. 7; on Jan. 5. This ship is being built for the company's account, and will be exactly the same as its ships 5 and 6, Canadian Sealer and Canadian Miner, approximately 2,800 d.w. tons each,

which it built under orders from the Marine Department for Canadian Government Merchant Marine Ltd.

**Polson Iron Works, Ltd.**, Toronto—G. T. Clarkson, liquidator, notified an Ontario Court recently that he has successfully completed the contracts the company had on hand, and asked leave to advertise its property for sale. The required permission was given.

**Prince Rupert Dry Dock and Engineering Co.**, Prince Rupert, B.C.—An interim injunction was granted to Newman Erb and his associates in the Prince Rupert Dry Dock and Engineering Co., placing the control of the company in their hands, subject to certain conditions. An application to dissolve the interim injunction, made on behalf of J. L. Mullen and his associates, was dismissed at the end of January, and the interim injunction continued until the trial of the action. Counsel for the Grand Trunk Pacific Ry., which is interested in the matter as owner, stated in court that he had been instructed by the Minister of Railways and Canals, to support the claim of the Erb interests. The company has contracts for building 2 steel cargo steamships for Canadian Government Merchant Marine Ltd.

**St. John Dry Dock and Shipbuilding Co.**, St. John, N.B.—The receipt of a quantity of machinery, consisting of boilers, motors, dynamos and other electrical equipment, is announced, to be utilized in connection with the operations of the dry dock, which is one of the chief works to be carried out in Courtenay Bay, by the company.

**St. Lawrence Dock and Shipbuilding Co.**, Levis, Que., the incorporation of which was announced in a recent issue, was formed to take over the National Shipbuilding Co.'s interests in the shipbuilding and repairing yard at Levis. The National Shipbuilding Co. will continue to operate the plant at Goderich, Ont., in the construction of marine engines, boilers and auxiliaries. The St. Lawrence Dock and Shipbuilding Co. has received an order from the George Hall Coal Co. of Canada for the reconstruction and repair of the s.s. Lehigh, which it has bought from the Lehigh Steamship Co., Cleveland, Ohio, for use in the coal trade. The work consists chiefly of the addition of steel poop and forecastle, with steel decks and pilot house, 7 cargo hatches, steel main deck, crew's quarters in poop and forecastle, new masts, booms and rigging. This work is well in hand, and it is anticipated that the ship will be ready for operation by the reopening of navigation.

**Sorel Shipbuilding & Drydock Co.**, Sorel, Que.—This company's property was sold by auction in lots, Feb. 26, by order of the liquidator. It consisted of 6 schooners under construction, machinery, tools, yard equipment, general stock, and fixtures valued at $628,129.29, apart from the partially built schooners.

**Wallace Shipyards Ltd.**, North Vancouver, B.C.—The steamship which this company is building for the Union Steamship Co. of British Columbia, was expected, according to our advices, to be ready for launching about the end of February.

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Farquhar and Co.'s s.s. Stella Maris, which was sent from Halifax to Mahone Bay, N.S., early in February, to release the s.s. Kinburn, icebound there, had her propeller stripped while turning in the ice.

## Atlantic and Pacific Ocean.

Canadian Pacific Ocean Services Ltd., has announced that its first sailing on the St. Lawrence route this year, will be the s.s. Melita, on May 15.

Canadian Pacific Ocean Service Ltd. has inaugurated an additional passenger service between Canada and Great Britain, with Tilbury as the British port. The s.s. Melita opened the service, when she sailed from Tilbury, Feb. 12.

Canadian Pacific Ocean Service's s.s. Empress of Japan, which arrived at Victoria, B.C., Feb. 19, with part of her port rail carried away, together with a lifeboat, and some other damage to her structure, reported that the trip from Japan had been the roughest in the past 30 years.

Elder Dempster and Co. has arranged for the inauguration of a direct steamship service between Canada and the west coast of Africa, to commence in May. It is expected that a monthly service, at least, will be operated and calls made at the various ports along the coast from Dakar to Forcados.

Vancouver will, a press dispatch states, be the trans-shipping point for 150,000 Czecho-Slovaks and Russian refugees who are to leave Siberia and Northern China and return to Europe. Arrangements are said to have been made by the Blue Funnel Line, and the C.P.R. to transfer them from ship to train at Vancouver. The liners Tyndareus and Protesilaus are in the Orient, the latter to take on its first batch of refugees at Vladivostok.

The s.s. Sobo, owned formerly by Elder Dempster and Co., and for some years operated between Liverpool, Eng., and West African ports, and later chartered to Pickford and Black Ltd., Halifax, N.S., for the service between Canada and the West Indies, was offered for sale by auction in London, Eng., recently. She was built in 1899, and has accommodation for 80 first class and 40 second class passengers. She has about 4,720 d.w. tons capacity, on 22½ ft. draft, and a speed of about 11 knots an hour. She is 345 ft. long, 44 ft. broad and 14¼ ft. deep.

The keel of the White Star-Dominion Line's s.s. Calgary, a triple screw 15,500 ton steamship, for service between Liverpool, Eng., and Canada, was laid at Belfast, Ireland, at the end of January. She will have accommodation for 650 cabin and 2,000 third class passengers. She is expected to be ready for service on the opening of St. Lawrence navigation in 1921. Her dimensions will be: length, 600 ft.; breadth, 67½ ft.; depth, moulded, 45½ ft. The propelling machinery will consist of a combination of turbines and reciprocating engines, for a speed of 15 knots an hour.

## Maritime Provinces and Newfoundland.

The Eastern Steamship Corporation has announced the resumption of its steamship service between St. John, N. B., and Boston, Mass., about the end of April, or early in May.

The St. John's, Nfld., Board of Trade, passed a resolution at its annual meeting recently, that the present condition of transportation constitutes a serious handicap to the trade and commerce of the country, and called upon the government to appoint a commission forthwith, to take evidence in the matter, with a view to providing adequate train and water service.

The schooner Associate, owned by J. Backman, Riverport, N.S., en route from Naples, Italy, to St. John's, Nfld., is reported to have been lost in mid-Atlantic about Feb. 15, nine of the crew having been rescued by the s.s. La Touraine and landed at Havre, France. The Associate was built at Liverpool, N.S., in 1912, her dimensions being: length, 107.6 ft.; breadth, 26 ft.; depth, 10.8 ft.; tonnage, 96 registered.

The s.s. Prospero, running between St. John, N.B., and Newfoundland ports, and which became icebound in a heavy field, northeast of Fogo, Nfld., in Dec., 1919, reached Twillingate, Nfld., with 60 passengers and 15 of a crew, Feb. 16, after having spent 8 weeks in the ice. Those on board were on short rations for 3 weeks, and such supplies as they had were taken on board on sleds hauled by men from the shore.

The three master schooner Meredith A. White, which was built by C. T. White and Son, Alma, N.B., in 1918, is being advertised for sale in England. She is classed with Bureau Veritas for 12 years, and is equipped with motor for handling cargo, sails and pumps, and is electrically lighted. Her dimensions are: length, 152 ft. 5 in.; breadth, 35 ft. 5 in.; depth, 12 ft. 9 in.; d.w. capacity 800 tons. She arrived at Bordeaux, France, recently, with coal from Canada.

Litigation in connection with the collision between the steamships, Imo and Mont Blanc, in Halifax Harbor, in December, 1917, and which resulted in the Halifax disaster, through the terrific explosion which took place, is now before the Imperial Privy Council's judicial committee. The Nova Scotia Admiralty Court found that the s.s. Mont Blanc was entirely to blame for the collision, and the Supreme Court held that the two vessels were equally responsible. It was announced, Feb. 21, that judgment had been reserved.

The Militia Department received tenders to Feb. 24, for the purchase of the motor boat Cockawee, then lying at the Engineers' wharf, Halifax, N.S. The boat's dimensions are: length, 52 ft. 2 in.; breadth, 12 ft. 3 in.; draft, 5 ft.; tonnage, 11 gross. She is built with oak frame and cypress planking with galvanized fastenings. The deck house and cabins are finished in mahogany and oak. The engine is 50 h.p. and the gasoline tanks have capacity for 165 gal. The speed is 6 knots. The equipment includes anchor, chain, compass, cushions, awning, two masts and davits for small boat and rowing boat.

The Newfoundland Government received tenders recently for the service of 4 steamships, suitable for use in ice, for the postal and freight service along the north, south and west coasts of the island. Two of these steamships are to ply north from May 1, each year to the close of navigation, leaving St. John's alternate weeks and giving a fortnightly service. The other two steamships are to ply to the south and west coasts, one leaving St. John's weekly, and running as far as Port aux Basques, calling at the principal ports only, and making the round trip in 7 days, carrying chiefly, passengers and mail and express packages, and only taking freight when it will not interfere with making schedule time. The other steamship will leave St. John's every two weeks, and the two

latter vessels will ply all the year, but may be taken off for six weeks in February and March each year, for seal fisheries work, when they will be replaced by others. The rates for passengers and freight are to be the same as at present, except that for the weekly service on the south coast, they will be 25% above the existing rates. A contract will be entered into for 15 years, and passenger and freight rates on all the vessels will be subject to amendment or alteration at the expiration of each 5 years of the contract.

## Province of Quebec Marine.

The Dominion Public Works Department received tenders, Feb. 27, for general restoration and refitting of the interior of the marine store building at Kings wharf, Quebec.

The Quebec Salvage and Wrecking Co.'s steamships Gopher and Musquash are operating under charter to the British Government; the s.s. Lord Strathcona and schooner G.T.D., are in winter berths at Quebec.

## Ontario and the Great Lakes.

The C.P.R. steamships Alberta, Athabasca and Manitoba, of the Great Lakes Service, are being equipped with new steam winches for mooring purposes, made by The William Kennedy and Sons, Owen Sound.

The Ottawa River Navigation Co.'s s.s. Empress was seized at the end of January, under an execution in respect of a judgment against the company for $750 for work done, and was advertised for sale by the sheriff on Feb. 11.

During the 262 days of the 1919 navigation season on the Great Lakes from Mar. 27 to Dec. 18, an average of one ship passed Windsor, Ont., every 20¾ minutes. There were 6,938 ships passing Windsor upbound and 9,447 downbound.

Four 600 ft. steamships will be launched during the next few months by the American Shipbuilding Co., at Cleveland, Ohio, for Great Lakes trade. The first is expected to be launched in March, and 2 will probably be in service by July; the remaining 2 are expected to be ready for operation towards the end of the season.

The Prescott and Ogdenburg Ferry Co.'s ferry steamship Miss Vandenburg is having her accommodation increased for better handling of automobile traffic across the river. The company is reported to have bought the ferry steamship Ferdinand, which, it is stated, will be placed in service during the forthcoming season, whenever occasion warrants.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above mean sea level, for January, as follows: Superior, 602.08; Michigan and Huron, 580.08; St. Clair, 573.10; Erie, 571.38; Ontario, 245.31. Compared with the average January stages for the past 10 years: Superior was 0.03 ft. above; Michigan and Huron, 0.14 ft. above; Erie, 0.25 ft. below; Ontario, 0.07 ft. below.

N. Cauchon, Ottawa, has proposed the building of a deep water canal from Montreal to near Ottawa, and thence to to the St. Lawrence River at Cardinal. It is claimed that if this plan were adopted, it would be less expensive than the deepening of the present canal system between Cardinal and Montreal. The scheme was to be laid before the International Joint Waterways Commission during February.

Amherst Island Tp. is applying to the Ontario Legislature for an act to ratify an agreement made with the Kingston Navigation Co., providing for payment by the township to the company of $10,000, by way of loan, in consideration of the establishment of a steamship service between Amherst Island and Kingston, the loan to be secured by mortgage upon the steamship, and to be repaid with interest in 10 annual instalments.

The s.s. Charles R. Vanhise, which was cut in two, about two years ago, for passage from the Great Lakes to the ocean, but did not go, has been rejoined and lengthened 96 ft. at Ashtabula, Ohio, and it is expected it will be ready for operation, by May 1, when it will be renamed A. R. Schneider. Attempts were made with the first section of this steamship, to take it through the Welland Canal on its side, but this was unsuccessful.

Canada Steamship Lines' s.s. Chicora, which has been operated on the Niagara River route from Toronto, for several years, and which sank at her moorings at Toronto, last year, was sold by tender, early in February for, it is said, $4,400, after having been raised by the underwriters. In connection with this sale, F. Torno, Toronto, has entered action, asking for an injunction to restrain F. W. Callaghan, Toronto, the purchaser, from disposing or dealing with the ship, and claiming that he had engaged certain parties to purchase the ship for him for $4,400, and made a deposit of $1,000. His deposit was returned to him, and later, he heard that the ship had been sold.

The George Hall Coal Co. of Canada has bought the s.s. Lehigh, from the Lehigh Steamship Co., Cleveland, Ohio, and has transferred the ship to the St. Lawrence Dock and Shipbuilding Co.'s yard at Levis, Que., for reconstruction to make it suitable for the coal trade. The Lehigh was built at Wyandotte, Mich., in 1880, and rebuilt in 1913. The hull is of composite wood and iron construction of the well deck type, with 3 watertight bulkheads, and is of the following dimensions: length, 238 ft.; breadth, 36 ft.; depth, 16 ft. 4 in. She is equipped with Steeple compound engine, with cylinders 24 and 54 in. diar., by 36 in. stroke, 600 i.h.p., and supplied with steam by a single Scotch boiler, 12¾ diar., by 13¾ ft. long, at 150 lb.

Capt. W. J. Eber, master of the s.s. Veronica, owned by the Standard Navigation Co., Buffalo, N.Y., was plaintiff in an action against Noel Marshall and the Standard Fuel Co., Toronto, for an accounting of profits on the steamship's operation, and for $3,500 as his share of demurrage due to the ship. The defence was that the ship was bought for $5,000, of which Capt. Eber supplied $1,000, receiving in return, a quarter share. She was sold in 1918 for $35,000, and the plaintiff was paid $8,750 as his share, and a disinterested accountant found from the books that his share of the profits was $3,816, which amount has been offered to him. The defendants paid $4,000 into court, and the case was dismissed, plaintiff being given that amount.

The Montreal Transportation Co. has bought the s.s. Valcartier, from the Algoma Central Steamship Line, Sault Ste. Marie, Ont. The Valcartier was built at Cleveland, Ohio, in 1903, and named William Henry Mack. She is built on the channel system with steel tank top, where no wood ceilings are fitted, and the hull is divided by 3 watertight and 2 non watertight bulkheads. She has a steel boiler house, steam pump well, and complete electric lighting equipment. The hatches are spaced 24 ft. centers. The hull is of steel and has the following dimensions: length, 354 ft.; breadth, 48 ft.; depth, 28 ft.; tonnage, 3,748 gross, 2,250 net, and she is equipped with triple expansion engines, having cylinders 20, 33½ and 55 in. diar., by 40 in. stroke, 1,170 i.h.p., at 85 r.p.m., supplied with steam by 2 Scotch boilers, each 12 ft. 10½ in. diar., by 13 ft. long, at 175 lb. She was owned originally by the Jenkins Steamship Co., Cleveland, Ohio, and was acquired by Lake Commerce Ltd., Toronto, in 1914, and in the following year was sold to the Algoma Central Steamship Line.

## Manitoba, Saskatchewan and Alberta.

With reference to the sale of the Peace River Trading Co.'s assets to the Lamson-Hubbard Canadian Co., as mentioned in our last issue, the Peace River Development Co., of which the Peace River Trading Co. was a subsidiary, is reported to have announced that it will continue the steamboat service on the Peace River, as hitherto, with the steamboats D. A. Thomas and Lady Mackworth.

## British Columbia and Pacific Coast.

The Dominion Public Works Department will receive tenders Mar. 5, for the construction of a wharf at Stewart.

The North Vancouver City Ferries showed a deficit of $2,695,59 for January. The receipts were $13,495.44, a decrease of $1,799.30, compared with Dec., 1919. The number of passengers carried during January was 222,395.

A Victoria report states that, up to Dec., 1919, the associated timber exporters reported that 48,000,000 ft. of lumber, out of 70,000,000 ft. ordered by Great Britain, had been shipped.

Grant Smith and Co. and McDonnell Ltd., contractors, are plaintiffs in an action against the Dominion Government for $306,813 for excavation work in connection with building two wharves at Victoria.

It was stated in the British Columbia Legislature, Feb. 18, that the s.s. Beaver, now employed in ferry service at Ladner, was bought from the C.P.R. for $25,000, and since it had been repaired was valued by an insurance company at $85,801.

The Dominion Government dredge Ajax is being overhauled by the British Columbia Marine Co., Vancouver, the contract having been obtained in competition with other local yards. It is expected that the work will be completed about the end of March, when she will do dredging at Williams Head.

It was announced in Vancouver, recently, that up to Dec. 31, 1919, 48,000,000 ft. of the British Government's order for 70,000,000 ft. of lumber had been shipped. Approximately 7,000,000 ft. was shipped during January, and 5,-

000,000 was expected to be shipped during February, most of it being sent across in the wooden steamships built in British Columbia recently for the French Government.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Albert, which grounded at Masset Bar, towards the end of January, was docked at Yarrows Ltd., yard, Victoria, Feb. 3. It was found that several plates had to be replaced, and a few minor repairs made to her machinery. The work was completed by Feb. 10, and she resumed her sailing between Vancouver and northern ports.

Plans for the construction of a government pier on Burrard Inlet, Vancouver, were expected to be ready early in February, after which, it was anticipated that tenders would be called for. The site of the projected pier is to the west of the Great Northern Ry. property. It is stated that tenders will probably be called for in two sections, one for the dredging and filling, and the other for the actual construction.

The s.s. Nouvelle Ecosse, the last of the wooden steamships to be built for the French Government by the Foundation Co. of British Columbia, arrived at Fraser River Mills, early in February, to load lumber for Europe. The dispatching of the steamships from British Columbia has been handled by Edward White and Sons, Victoria, the rule being followed that they call at Queenstown, Ireland, for orders, and after unloading their cargoes at a British port, proceed to Brest, France.

The C.P.R. s.s. Princess Patricia resumed her sailings between Nanaimo and Vancouver, Feb. 9, after the completion of repairs at Victoria. The s.s. Princess Victoria was withdrawn from service on the Victoria-Vancouver-Seattle route, Feb. 9, for overhaul and refit. The s.s. Princess Royal, which had replaced the s.s. Princess Patricia, between Nanaimo and Vancouver, resumed her service between Victoria and Vancouver, running in conjunction with the s.s. Princess Adelaide.

The Coastwise Steamship and Barge Co., Vancouver, has ordered a steel steamship of approximately 2,350 tons, to be built by J. F. Duthie and Co., Seattle, Wash., for its ore carrying and towing business between British Columbia and Puget Sound ports. The steamship's dimensions will be: length, 220 ft.; beam, 40 ft.; depth, 21 ft. The engines will be placed aft, and built for a sea speed of 11 knots an hour. In addition to the usual loading machinery, a towing machine, similar to those now in use for towing the company's barges, will be installed.

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The Navy League of Canada has been presented by the Dominion Government with the s.s. Restless for training boys for the Canadian merchantile marine. It is especially provided that she is intended solely for this purpose, and must not be disposed of nor used for any other purpose without the Naval Service Department's consent. She was built at New Westminster, B.C., in 1906, and is screw driven, by engine of 16 n.h.p. Her dimensions are: length, 71 ft.; breadth, 17 ft.; depth, 7 ft.; tonnage, 76 gross, 53 registered. She was engaged for a number of years in the fisheries protection service in British Columbia, and was used later as a tender for the Royal Naval College of Canada.

## Government Building of 18-Knot Passenger Steamships Opposed by Quebec Board of Trade.

J. T. Ross, President, Quebec Board of Trade, wrote Sir George E. Foster, acting Prime Minister, Jan. 30, as follows:—"At a meeting of the Quebec Board of Trade's Council, held on Jan. 26, I was instructed to write you with reference to a published statement as to the intention of the government to build in Canada a number of 15,000 ton passenger steamships, with a speed of 18 knots, for the Canadian service. The board, while congratulating the government upon its policy of having so many freight steamships built in this country, would respectfully suggest that it might be wise for the government, for the present, to continue to employ the existing shipyards in the construction of 5,000 and 10,000 ton freight steamships, such as are now being built, and defer the building of passenger ships for the present, for the following reasons:—

"The most urgent requirement of Canada at present is freight tonnage, to carry out grain and other produce to Europe, and the other markets of the world. The control of that tonnage by the United States and other nations is diverting our export grain to New York, to the great detriment of Canadian seaports, with an unfavorable influence on the rates of British exchange. A passenger steamship of 15,000 tons, running 18 knots, will probably cost twice as much as a 10,000 ton freight steamship, and will only carry 3,000 tons of cargo, or less than one-third of the deadweight carried by the freight boat. So that by continuing the policy of building freight boats only, we would probably get six times the amount of freight space for the money that would be used in building passenger boats. We would suggest that it would be wiser for the government to pay a sufficient subsidy to the C.P.R., or to some of the large English steamship lines, to induce them to put on a weekly service of two 20 knot steamships between Canada and Great Britain, such as was recommended to the Imperial Government, last year, by the Dominions Royal Commission. Possibly, in view of this recommendation, the Imperial Government might contribute towards such a subsidy.

"If Quebec were made the terminus of this line during the season of St. Lawrence navigation, and Halifax during the five winter months, the weekly service could be run with three 20 knot steamships, whereas four 18 knot boats are now used for that purpose. The distance from Liverpool being as follows—To New York, 3,100 miles; to Halifax, 2,480, and to Quebec, 2,680, the comparative time occupied in the voyage of a 20 knot (23 miles) boat would be—To New York, about 135 hours; to Halifax, about 108 hours; to Quebec, about 117 hours, as compared with the time of the 25 knot Mauretania to New York, which is about 5 days. So that it will be seen that a 20 knot service to Quebec and Halifax would be better for all Canadian points than making use of a 25 knot steamship to New York.

"It should not be forgotten that a steamship reaching Quebec is practically in the center of the country, being 670 miles closer to the interior of Canada than a steamship arriving at Halifax, and that, owing to the completion of the National Transcontinental Ry., which shortens the distance from Quebec to the western provinces by 214 miles, passengers and mails from Europe, landing by a 20 knot steamship at Quebec, would reach Winnipeg about 24 hours quicker than they now do by the present route, with an 18 knot service. The time of passengers and mails from Europe to Toronto, Chicago and other western points would also be shortened as compared with New York. Nor should be overlooked the very great advantages of such a line, in attracting to Canada a class of travel that now goes only to New York, on account of faster and better accommodation, a class of travel that would be of great advantage to Canada financially and otherwise. For all these reasons we would suggest that the government should carefully consider the question before committing the country to an 18 knot service."

**Sir George Foster's Reply:**

Sir Geo. E. Foster replied on Feb. 4 as follows:—"No policy has as yet been adopted by the government looking to the construction of 15,000 ton passenger ships with a speed of 18 knots, or indeed any passenger ships, with any speed, in the Canadian service. The appropriations have hitherto been used for the construction of freight steamships, and I do not think it probable that for the present this policy will be altered. I note the considerations adduced by you in favor of your contention, which it is not necessary for me to enlarge upon, in view of the intimation made above."

**What the Minister of Marine Said:**

In connection with the foregoing it is interesting to recall what Hon. C. C. Ballantyne said at the Dominion Marine Association's annual dinner in Montreal, Jan. 9, as reported in Canadian Railway and Marine World for February, as follows:—"Our Canadian shipbuilders have demonstrated that they can build freight ships. I am happy to tell you that on the representations that have been made to Dr. Reid and Mr. Hanna for passenger ships of a one-class type, that is, a passenger ship of 15,000 gross tons, with speed of 18 knots, and carrying both passengers and freight, the government has under consideration the building of such a type of steel ship. The government has no intention of ordering one outside of Canada, but it is the government's intention to have these passenger ships built in this country by our Canadian workmen and to use Canadian materials."

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The British Ministry of Shipping (Canada), which, during its 5½ years ada's export trade of Canada, inland of existence, practically controlled Canand overseas, clearing over 3,000 line steamships from Canadian ports and Portland, Maine, will, according to a Montreal, press report, be demobilized on Mar. 31. Between 1914 and 1919 in excess of 16,000,000 gross tons of munitions, war materials and supplies were moved inland and overseas.

**British Ship Purchases During War.**—It is stated that during the war the British Government bought 13 ships in the United States at an average cost of £45 7s 10d a ton; 19 in Japan at £44 17s 8d a ton; 3 in China at £41 a ton; 11 in Hong Kong at £31 11s 9d a ton; and 44 in Canada at £33 1s 9d, or about $190 a ton.

# Government Grain Elevators for Atlantic Ports, Freight Rates, Etc., Discussed by Quebec Board of Trade's President and the Minister of Railways.

Canadian Railway and Marine World has been favored with copies of the following correspondence between J. T. Ross, President, Quebec Board of Trade, and the Minister of Railways, Hon. J. D. Reid. The first letter from Mr. Ross to the Minister, dated Jan. 20, was as follows:—"I am instructed by the Quebec Board of Trade's Council to draw your attention, and to ask you to draw the attention of the cabinet to the alarming result of the absence of proper railway terminal facilities at Canadian seaports. You will, no doubt, remember that this board has repeatedly urged the government, since 1912, by correspondence and by delegations, to complete the National Transcontinental Ry. by providing grain elevator storage for 10,000,000 bush. at each of the ports of Quebec, Halifax and St. John, N.B.,—Montreal being already fairly provided for—together with the necessary steamship berths to keep these elevators employed. This has not been done. Instead of doing so, the government has built a large elevator at Port Colborne, Ont., which is more or less tributary to New York, and the elevator storage at the head of the Great Lakes, and in the interior, has been increased to such an extent, that about 80% of the elevator storage is now situated on the Great Lakes and in the interior, and less than 20% at our seaports. The result has been, and it could not, for this reason, be otherwise—because 80 will not go into 20—that, as Senator Bennett stated recently in parliament, 80% of our western grain trade, a trade which was our great inducement for going to the enormous expenditure of building three transcontinental railways, goes to New York for export.

"At a public meeting held at St. John, N.B., on Jan. 10 instant, it was stated that on account of the failure to extend the grain conveyors to the new berths, 23 ships had been diverted from St. John, and that 11 large cargo ships are now anchored in and off St. John harbor, waiting to get berths. I am sure you must realize, and the government must realize, that this position is nothing less than a calamity for the trade of the country, which calls for immediate action by the government.

"Although you have proved by actual operation that it is profitable to carry wheat all rail from Winnipeg to Quebec by the government railway for 3c a bush. cheaper than the lake and rail rate to New York or to Montreal, we understand that not a bushel of wheat came by that road for export during the season of 1919. It has been asserted that the principal reason which has enabled New York to divert our western trade is that marine insurance underwriters discriminate against Canadian ports. This could be overcome, and, we believe, without cost to the country, by the government assuming the marine insurance of all Canadian ports, at New York rates.

"I am therefore instructed, respectfully to renew the request made to the government by this board, seven years ago, and since, that elevator storage should be provided for 10,000,000 bush. at each of the ports of Quebec, Halifax and St. John, together with the necessary steamship berths. And I would again respectfully point out to you that the City of Quebec is strictly entitled to this, under the terms of a written contract with the government executed in 1910. We are convinced that the policy we have indicated would put a stop to this alarming diversion of our trade to New York and would bring it back to Canadian seaports."

**The Minister of Railways' Reply.**

Hon. J. D. Reid replied Jan. 23 as follows:—"One statement you make in your letter I must take issue with at once, which is 'that I have proved by actual operation that it is profitable to carry wheat all rail from Winnipeg to Quebec by the government railway for 3c a bush. cheaper than the lake and rail rate to New York, or to Montreal.' This statement is incorrect. Several years ago the late Mr. Cochrane did experiment by carrying grain from a point on the National Transcontinental Ry. opposite Fort William, to Quebec, for 6c a bush. At the time his officials led him to believe it could be carried for that rate, but after investigation it was proved that on every bushel that was carried a heavy loss was the result. So that now you can take it as quite sure it is an absolute impossibility to carry it from Port Arthur to Quebec at a rate less than lake and rail, or all water. The facilities at Quebec will, no doubt, be taken up by the board of management, who are, as you are aware, in charge of the operation of the Canadian National Rys., and if they feel at any time the facilities are not sufficient they will deal with the same. You evidently do not realize the enormous expenditures which have been caused by the war, and are still continuing, and also the very large loans that are necessary in order to meet conditions of this kind. The government must curtail all expenditures to the smallest point, until matters again resume normal conditions. So far as I am concerned, I have asked the management to do this in connection with the Canadian National Rys. the same as is being done by other public works. I am therefore sorry there is no possible chance of any new elevators being built in the City of Quebec during the coming season."

**The Quebec Board of Trade's Rejoinder.**

The Quebec Board of Trade's President wrote the Minister again on Feb. 6 as follows:—"You say that you must take issue at once with the statement in my letter of Jan. 20 that you had proved by actual operation that it is profitable to carry wheat all rail from Winnipeg to Quebec by the government railway for 3c a bush. cheaper than the lake and rail rate to New York or to Montreal. You say that this statement is incorrect, that the rate of 6c a bush. from Armstrong (a point opposite Fort William) to Quebec and Montreal resulted in a heavy loss, and that we 'can be quite sure that it is an absolute impossibility to carry it from Port Arthur to Quebec at a rate less than lake and rail, or all water.' I based my statement upon your own words in Parliament on April 25, 1916, as given in Hansard, page 3184, in which you say: 'There was a loss when the wheat was taken to Montreal, for the reason that there were three railways that had to get a portion of the 6c. We can carry grain from Armstrong to Quebec at a profit, but we cannot do so when the grain has to be hauled over three railways,' and again on page 3187, where you say: 'I do not say that there is very much profit in the 6c rate between Armstrong and Quebec, but it pays with a train load such as I have stated.' I think I was justified by this declaration in parliament by you as Minister of Railways, in my statement that you had proved by actual operation that the rate to Quebec was profitable.

"If, as you say, the government had to divide the 6c rate to Montreal between its own line, the Grand Trunk and the Timiskaming and Northern Ontario Ry., it is not to be wondered at that you lost money on the shipments to Montreal by such a circuitous route over bad grades. It could not be otherwise. But why should this loss apply to your direct line to Quebec, where you own all the mileage and receive all the earnings? Surely it is not fair to condemn the Quebec route, because that to Montreal was not profitable. Even, if it were subsequently proved, as you now say, that the 6c rate was not profitable, it is not to be wondered at, because all this grain was hauled during the winter over a new road, having no snow fences or other provisions against snow blockades, having no terminals, docks or elevators of its own, exposed to costly charges for the use at Quebec of the terminals of its greatest rival, besides dock dues and elevating, having no rolling stock or snowplows of its own, and dependent for motive power upon broken down, or obsolete Intercolonial Ry. locomotives the use of which had doubtless to be paid for.

"Moreover, even if the 6c rate was unprofitable that does not justify the conclusion that it is impossible to compete with the lake and rail, or the all water, route The point of comparison is not Port Arthur, but Winnipeg. To the 6c from Armstrong to Quebec we must add 4 8-10c from Winnipeg to Armstrong, making the through rate 10 8-10c, or say 11c, from Winnipeg to Quebec. At that time the through rate from Winnipeg, via Fort William and Buffalo, to New York, including elevating and insurance, was about 14c. Last year it was 17c or more. The cost by lake and rail to Montreal is about the same as to New York, or perhaps rather in favor of New York, and the all water route from Fort William to Montreal does not seem to be used, as only 330,000 bush. of wheat went all water last year, probably owing to the necessity of transshipping into small boats at Port Colborne.

"To prove that the rate of 11c for 1,350 miles from Winnipeg to Quebec (6c from Armstrong), was not an unusual one, I would ask you to refer to the joint tariff of all the large railways, in force during the present winter, and you will see that today's rate on export wheat from Goderich to Halifax, 1,305 miles, is 10 4-10c a bush., over road having 1% grades, where little more than half the tonnage can be hauled that you haul on the National Transcontinental. Further than this, we are informed by the General Manager of one of the greatest grain carrying roads in America, that the present cost of carrying wheat over the National Transcontinental from Win-

nipeg to Quebec, would be less than 12½c a bush.

"All these facts go to show that it was quite possible to compete successfully with the lake and rail routes, and with the all water route, and that there was a legitimate margin in favor of the National Transcontinental of 3c a bush. in the special rate made in 1916. And though, doubtless, the cost of operating has increased since then, the increase will apply to both routes, and there would seem to be no reason whatever why the margin of 3c in favor of Quebec should not be maintained, thus turning the traffic to Canadian seaports, and putting a stop to the lamentable diversion of our western trade to New York, where, according to Senator Bennett's statement in parliament, four-fifths of it has gone. Senator Bennett says that our much vaunted water route by the lakes has proved a great disappointment, and that by using it we are losing our grain trade and New York is getting it.

"The last issue of the Dominion Government Bureau of Statistics contains a map showing the movement of all Canadian grain. It shows that 65,000,000 bush. of our northwestern wheat was exported at New York in 1918, and only 14,000,000 bush. at Montreal, the balance of the Montreal export being presumably made up of Quebec and Ontario grain. The result is that United States seaports are getting the benefit of the traffic created by our money; U.S. railway crews and U.S. lake craft men are getting the benefit of the cost of transportation—for it must not be forgotten that 70% of the cost of transportation is spent in the country through which the goods are transported—and that our own goods are helping to demoralize the New York exchange market, and to lower the value of the pound sterling for the Mother Country. Is not this a desperate position into which we have got, after having spent the enormous cost of three transcontinental railways, to get this very trade which is being taken away from us?

"The National Transcontinental Ry. has cost the government more than $150,000,000. It is one of the best built roads in America. It is so straight that it shortens the distance between Winnipeg and Quebec by 214 miles. Its grades are so level that our own engineer tells us that you can haul over it nearly double the tonnage that can be hauled with the same power by any of its rivals. Although it is not yet finished, because it is not properly equipped with rolling stock and because the government has not yet built the terminals which it contracted with the City of Quebec to build, it has given ample proof, if the above statements are true, of its ability to do what it was intended to do, namely to save to the farmer of the northwest 3c a bush. on the transportation of his wheat, and to bring to Canadian seaports the trade of the northwest, which we have made such heavy sacrifices to obtain. This was promised to us in parliament in 1904, when the building of this railway was undertaken, promised to us largely by members from Ontario, who were experts in such matters. If these promises had not been made, the people of the eastern seaports would never have consented to this vast expenditure.

"Surely it cannot be the government's intention to continue to allow our trade to slip away from us in the heart-breaking manner in which it has done for the last six years. Surely you, as Minister of Railways will make use of the costly instrument which has been placed in your hands for the purpose of putting a stop to this diversion of our trade and of bringing it back to Canadian seaports. We quite realize what you say as to the enormous expenditures which the country has incurred, and we continue to regret that so very great a portion of it should have been in connection with the acquisition by the government of two great railway systems, against the advice of commercial men. But even that should not paralize your efforts for good, and we respectfully call upon you, once more, as Minister of Railways, to use the National Transcontinental Ry. for the purpose for which it was built, namely, to bring the western grain trade to Canadian seaports."

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Independent Pneumatic Tool Co.**, Chicago, Ill., has issued an illustrated circular describing its Thor universal assembling and repair vise for pneumatic drills.

**Metal & Thermit Corporation**, 120 Broadway, New York, N.Y., has issued, and will send on request, a large 1920 map calendar, showing railway time zones in the United States and Canada, with illustrations of Thermit welding jobs, including stern frames of ships, rail special work, and locomotive frame repairs.

**National Steel Car Corporation Ltd.**—Some information in regard to the National Steel Car Corporation's incorporation was given in Canadian Railway and Marine World for February, since which additional particulars have been received. The incorporation is under the Dominion Companies Act, the capitalization being 100,000 shares of no par value. The corporation has taken over the National Steel Car Co.'s plant, assets and business at Hamilton, Ont., and assumed its liabilities, the transfer having been made on Dec. 18, 1919. The corporation's head office is at Hamilton, with branch office at 30 Church St., New York, N.Y. The following are the directors: R. J. Magor, President, Magor Car Corporation, New York, N.Y., President; Donald Symington, President, Locke Insulator Co., Baltimore, Md., Vice President and Secretary; H. H. Pierce, Sullivan and Cromwell, New York, N.Y.; D. B. Dewar, Canadian Bank of Commerce, Hamilton. The Treasurer is L. B. Churchill, and the Assistant Secretary is H. Van Hassel. The other three directors, to make up a total of seven, have not been appointed, the positions being filled by temporary directors in the legal representatives' office in Toronto.

**The Ohio Brass Co.**, Mansfield, Ohio, has taken into its service, W. J. Stanton, who has been identified with the electric industry for 20 years, having started with the General Electric Co., and remaining with it for 18 years, in the testing, engineering and sales departments.

**Taylor & Arnold Engineering Co. Ltd.**, Montreal, is an amalgamation of Taylor & Arnold Ltd.; Central Engineering Co., Ltd., which was Taylor & Arnold's shop, and Canadian Detroit Lubricator Co. The new company is going to extend considerably, as manufacturers of railway marine, and mechanical brass supplies, in addition to carrying on its business as agents and jobbers.

## Transportation Conventions in 1920

Mar. 16-18—American Railway Engineering Association, Chicago, Ill.
May—Association of Railway Claim Agents, Atlantic City, N.J.
May—International Railway Fuel Association, Chicago, Ill.
May 5-7—Air Brake Association, Chicago, Ill.
May 12—Railway Accounting Officers' Association, Washington, D.C.
May 25-28—Master Boiler Makers' Association, Minneapolis, Minn.
June—American Association of Freight Agents.
June 9-16—American Railroad Association's Mechanical Section, Atlantic City, N.J.
Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.
Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:
American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.
Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom 909 Shaughnessy Bldg., Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.
Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.
Hydro-Electric Railway Association of Ontario —T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.
Niagara Frontier Summer Rate Committee, James Morrison, Montreal.
Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.
Railway Association of Canada—W. M. Neal, Montreal.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.
Transportation Club of Vancouver — H. W. Schofield, 556 Church St., Vancouver, B.C.

**The Mount Royal Trading Co. Ltd.**, has been incorporated under the Dominion Companies Act, with $100,000 authorized capital, and office at Montreal to carry on a general manufacturing and trading business and in connection therewith to own and operate steam and other ships of every description, and carry on a general transportation business for passengers and freight. The incorporators are: L. Beauregard, J. Boyle, J. B. Johnson, N. A. Collins, and H. L. Dugan, Montreal.

## CANADIAN PACIFIC RAILWAY COMPANY.

### NOTICE.

The Canadian Pacific Railway Company will apply to the Parliament of Canada at its next Session for an Act authorizing it to construct the following lines of railway:

(a) From a point on the Pheasant Hills Branch at or near Cory in Twp. 36, Ranges 5 or 6, West of the 3rd M., thence in a general North Westerly direction to a point at or near Birch Lake, in Twps. 51 and 52, Ranges 15 and 16, West of the 3rd M., all in the Province of Saskatchewan.

(b) From a point on the Pheasant Hills Branch at or near Asquith, in Twp. 36, Ranges 9 or 10, West of the 3rd M., thence in a general North Westerly direction to a point on the Wilkie North Westerly Branch at or near Cloan, in Twp. 42, Range 20, West of the 3rd M., all in the Province of Saskatchewan.

(c) From a point on the Moose Jaw North Westerly Branch, at or near Rosetown, in Twp. 30, Range 15, West of the 3rd M., thence in a generally Northerly and North Easterly direction to a point on the Pheasant Hills Branch, at or near Keppel, in Twp. 35, Ranges 12 to 13, West of the 3rd M., all in the Province of Saskatchewan.

(d) From a point at or near Kelfield, on the Wilkie-Anglia Branch, in Twp. 34, Range 19, West of the 3rd M., thence in a generally Easterly direction to a point in Twps. 32 or 33, Range 14, West of the 3rd M., all in the Province of Saskatchewan.

(e) From a point on the Weyburn-Stirling Branch, at or near Amulet, in Twp. 8, Ranges 20 or 21, West of the 2nd M., thence in a Westerly and North Westerly direction to a point on the Moose Jaw South Westerly Branch, at or near Dunkirk, in Twp. 12, Range 28, West of the 2nd M., all in the Province of Saskatchewan.

(f) From a point on the Crowsnest Subdivision, at or near Kipp, in Twp. 9, Range 22, West of the 4th M., thence in an Easterly and North Easterly direction to a point on the Suffield-Blackie Branch, at or near Retlaw, in Twp. 13, Range 17, West of the 4th M., all in the Province of Alberta.

And to authorize it to issue Bonds in respect thereof to the amount of Forty thousand dollars ($40,000) per mile or in lieu of such Bonds to issue Consolidated Debenture Stock to the same amount.

DATED at Montreal this 28th day of January, 1920.

E. ALEXANDER,
Secretary.

Pringle, Thompson, Burgess & Cote,
Ottawa, Agents.

## THE ESQUIMALT AND NANAIMO RAILWAY COMPANY.

NOTICE—The Esquimalt and Nanaimo Railway Company hereby gives notice that it will apply to the Parliament of Canada, at its next session, for an Act empowering it to construct a line of railway from its present terminus at Courtenay, thence in a general northerly and northeasterly direction to a point at or near Duncans Bay, on the east coast of Vancouver Island.

Dated at Montreal this 7th day of February, 1920.

W. F. SALSBURY,
Secretary.

Pringle, Thompson, Burgess & Cote,
Ottawa, Solicitors.


# Geo. P. Nichols & Bro.

*Electric Turntable Tractors*
*Electric Transfer Tables*

More than 100 American railroads have adopted the Nichols Tractor as standard.

**Office and Factory, 2139 Fulton St., Chicago, Ill.**


## Tenders for Street Cars

Tenders will be received by registered post only, addressed to the Chairman, Board of Control, City Hall, Toronto, up to 12 o'clock noon, on Tuesday, March 16th, 1920, for the supply of the following.

Tender No. 41—13 Street Cars Complete.

Envelopes containing tenders must be plainly marked on the outside as to contents. Specifications and forms of tender may be obtained at the Works Department, Room 12, City Hall. Tenders must comply strictly with conditions of City By-Laws as to deposits and sureties, as set out in specification and forms of tender. The lowest or any tender not necessarily accepted.

T. L. CHURCH (Mayor),
Chairman, Board of Control.


# BARBER

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**STANDARD CAR TRUCK COMPANY**
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CANADA:
**CANADIAN APPLIANCE CO., LTD.**
708 New Birks Building,
Montreal, Quebec.

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**General Sales Agents: MUSSENS, LIMITED, Montreal, Toronto, Winnipeg and Vancouver.**


# Ottawa Traction Company, Limited

## Sixth Annual Report for Year Ending December 31, 1919.

Your directors have much pleasure in submitting their sixth annual Report for the year ending December 31, 1919.

The amount received from The Ottawa Electric Railway Co. during the year was $278,958, with which was paid the usual quarterly dividends of one per cent, and a bonus of one per cent.

The established record of The Ottawa Electric Railway Co. has been fully maintained during the past year and the receipts have shewn a steady increase.

The operations of the company were interrupted for a period of eighteen days from July 1 to 18 last, inclusive, due to a strike on the part of a large number of employes. The service was fully restored on July 19 and the harmonious relations between the company and its employes were also restored, and continue.

During the year, a loop was constructed on the St. Patrick Street line, just west of St. Patrick Street bridge, and a short piece of single track at the terminus of the Gladstone Ave. line was double tracked, both of which add to the efficiency of the service.

Your directors look forward with confidence to a prosperous year.

All of which is respectfully submitted.

T. AHEARN,
President

Ottawa, February 2, 1920.

### OTTAWA TRACTION COMPANY LIMITED STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED DECEMBER 31, 1919.

**Expenditure.**

| | |
|---|---|
| To net income transferred to profit and loss appropriation account | $ 278,958.00 |
| | $ 278,958.00 |

**Income.**

| | |
|---|---|
| By dividends received from The Ottawa Electric Railway Company | $ 278,958.00 |
| | $ 278,958.00 |

**Profit and Loss Appropriation**

| | |
|---|---|
| To Dividend No. 20 paid April 1, 1919—1% | $ 55,755.00 |
| To Dividend No. 21 paid July 2, 1919—1% | 55,767.00 |
| To Dividend No. 22 paid Oct. 1, 1919—1% | 55,812.00 |
| To Dividend No. 23 payable Jan. 1, 1920—1% and bonus 1% | 111,624.00 |
| | $ 278,958.00 |
| By balance transferred from profit and loss account | $ 278,958.00 |
| | $ 278,958.00 |

### BALANCE SHEET AS AT DEC. 31, 1919.

**Assets.**

| | |
|---|---|
| Accounts Receivable, The Ottawa Electric Railway Company | $ 900.00 |
| Dividend Receivable—The Ottawa Electric Railway Company | 111,624.00 |
| 18,601 Shares of The Ottawa Electric Railway Company, Par Value $100 each | 5,580,300,00 |
| | $5,692,824.00 |

**Liabilities.**

| | |
|---|---|
| Dividend no. 23 payable January 1, 1920, 1% and bonus 1% | $ 111,624.00 |
| Capital stock issued | 5,581,200.00 |
| | $5,692,824.00 |

**Auditor's Report to the Shareholders**

I have audited the accounts of your Company for the year ended December 31st, 1919, and certify that the foregoing Balance Sheet and Income and Expenditure Account are properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of my information and as shown by the books of the Company.

I have received all the information and explanations required by me.

ARTHUR A. CRAWLEY,
Chartered Accountant of Arthur A. Crawley & Co.

Ottawa, February 2, 1920.

### OTTAWA TRACTION COMPANY, LIMITED

**Directors**

T. AHEARN - - - President
WARREN Y. SOPER, Vice-President
T. F. AHEARN GEO. P. MURPHY
E. N. SOPER J. F. SMELLIE
T. WORKMAN A. J. DAWES
GEO. F. HENDERSON, K.C.
G. L. SNELLING, Secretary-Treasurer

# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under

Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.

Allow five words where replies are to be sent to a box number. Minimum order—$1.

Rates under other headings and for display advertisements on application.

# Sale of Military and other Government Stores

Equipment and Supplies for Hospitals, Institutions, Bunkhouses Camps, Dining-rooms, Kitchens, etc.

Bedsteads, Furniture, Hardware, Dry Goods, Rubbers, Overshoes and other Footwear, Blankets, Sheets, Pillows, Baskets, Woodenware, Brushes, etc.

CONSTRUCTION EQUIPMENT AND MACHINERY—AMBULANCES.

**The Stores are located at various places throughtout Canada**

Instead of or in addition to sales by sealed tender

## PRICE LISTS WILL NOW BE ISSUED

for most articles—the goods being offered in lots for purchase by wholesale houses, jobbers, and the trade generally.

## TRADE ONLY SUPPLIED

except that arrangements previously announced for sale to returned soldiers and sailors and widows and dependents of same through the G. W. V. A. and similar oganizations and to hospitals and philanthropic institutions will be continued.

SALES WILL CEASE IN MARCH. Any balances left will be cleared by public auction shortly thereafter. This advertisement will not be repeated. Those interested should therefore apply AT ONCE for price lists and other information to the . . .

Secretary of the War Purchasing Commission, Booth Building, Ottawa.

February, 1920.

### CANADIAN PACIFIC RAILWAY COMPANY

**Dividend Notice.**

At a meeting of the Board of Directors held today the following dividends were declared:

On the Preference Stock, two per cent. for the half-year ended 31st December last;

On the Common Stock, two and one-half per cent. for the quarter ended 31st December last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account;

Both dividends are payable 1st April next to Stockholders of record at three p.m. on 1st March next.

By order of the Board,

ERNEST ALEXANDER,
Secretary.

Montreal, 9th February, 1920.

### THE VICTORIA ROLLING STOCK & REALTY CO. OF ONTARIO LIMITED.

NOTICE is hereby given that the Annual Meeting of the Shareholders of the Victoria Rolling Stock & Realty Company of Ontario, Limited, will be held at the offices of Messrs. Osler & Hammond, 21 Jordan Street, Toronto, on Wednesday, March 3, 1920, at twelve o'clock noon, for the reception of the Annual Report and election of Directors for the ensuing year.

By order,

G. C. CHISHOLM,
Secretary.

Toronto, February 21, 1920.

## Positions Vacant

### MANAGER WANTED

For Electric Light, Street Railway and Gas properties at Cornwall, Ontario.

Experience in all three utilities is not essential.

Give full information re past history.

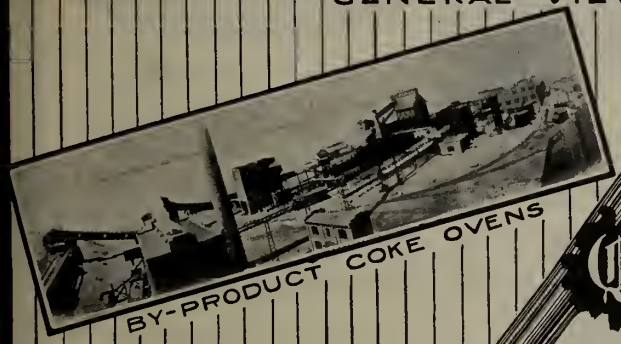
All applications confidential.

Address: Cornwall Street Railway, Light & Power Co., Ltd., Cornwall, Ont.

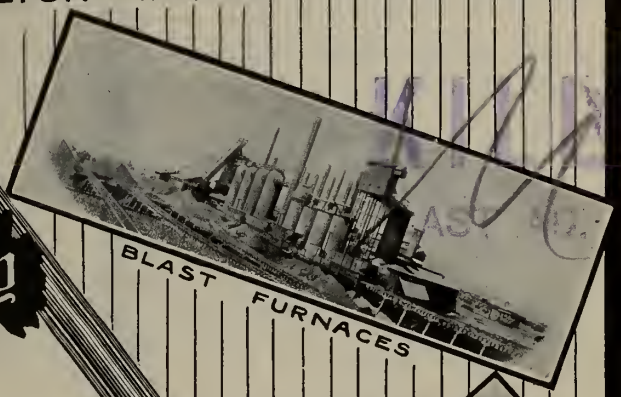
**It Pays**

to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better **Results**

GENERAL VIEW HAMILTON WORKS
HAMILTON



BY-PRODUCT COKE OVENS



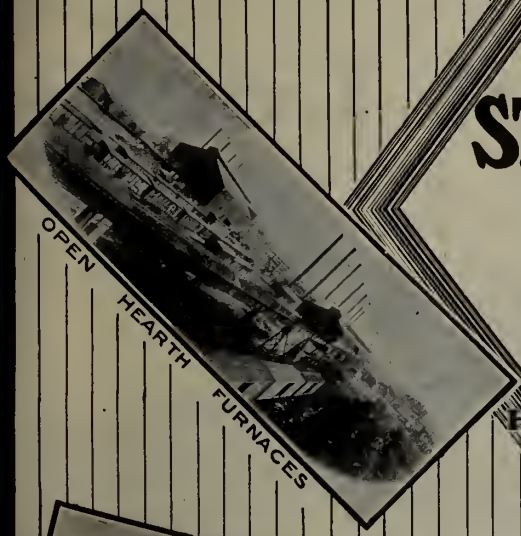
BLAST FURNACES

Quality

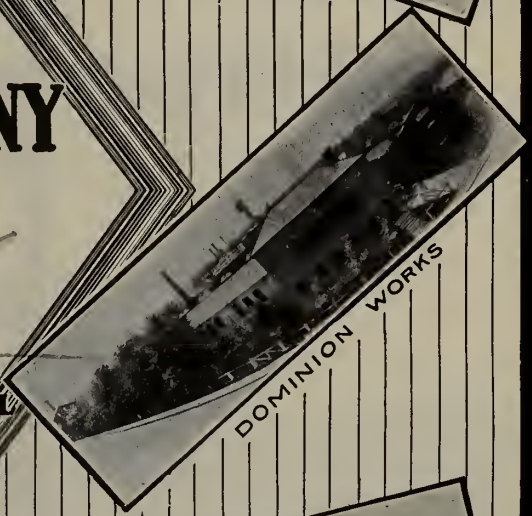
THE
STEEL COMPANY
OF
CANADA
LIMITED

HAMILTON—MONTREAL

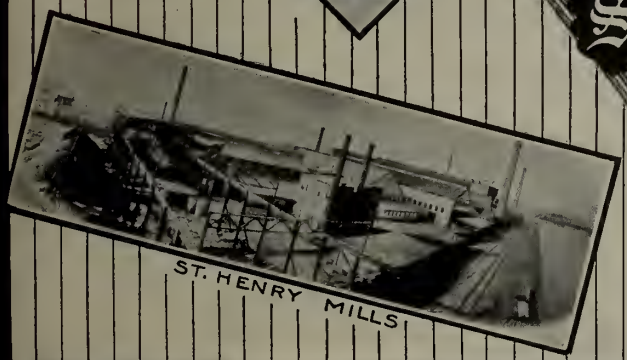
Service



OPEN HEARTH FURNACES



DOMINION WORKS



ST. HENRY MILLS

ST. PATRICK MILLS

GENERAL VIEW OF NOTRE DAME WORKS
MONTREAL

*12,000 lbs. pressure resistance*

Whether in the maintenance of partially worn rail, or in the laying of new rail, there should be no question as to the nut locks.

# Hipower Nut Locks

possess sufficient reactive pressure to force and hold splice bars in position —diffusing shocks—compensating for wear—and preventing elongation of bolts.

If only for the sake of safety and security, specify

## HIPOWER

**The National Lock Washer Co.**

Established 1886

Newark, New Jersey, U. S. A.

New York Chicago Detroit

# LINK-BELT
## LOCOMOTIVE CRANES

represent the highest degree of efficiency in design and mechanical construction known in crane the building art.

They are provided for all classes of service—handling coal and ashes—raw material—finished product—switching cars—construction work—emergency operations—in fact for every need calling for the handling of bulky material by Grab-Bucket, Hook, Sling or Lifting Magnet.

Link-Belt Locomotive Cranes embody many distinctive features. They are the Only Cranes with a Foolproof Safety Device on the swinging mechanism.

Send for Book No. 290 showing many types and uses. We will gladly have a representative call on you and go into details without obligating you in any way.

**CANADIAN LINK-BELT COMPANY LIMITED**

WELLINGTON AND PETER STREETS

**TORONTO**

**We Also Make**

- ☐ Elevators and Conveyors
- ☐ Link-Belt and Sprockets
- ☐ Silent Chain Drives
- ☐ Truck and Tractor Chains
- ☐ Electric Hoists
- ☐ Locomotive Cranes
- ☐ Wagon Loaders
- ☐ Coal and Ashes Systems
- ☐ Coal Tipple Equipment

Write for Catalogs
Place X in Square

**MINER**
**FRICTION DRAFT GEAR**

**CLASS A-18-S**

**THE PERFECT DRAFT GEAR**

**MINER**
**BALANCED SIDE BEARING**

**SAVES RAILS WHEELS AND COAL**

# CANUCK SUPPLY CO., LTD.
**MONTREAL**

**W. H. MINER**
**CHICAGO**

**CRANE FLANGED FITTINGS**

**CRANE**
LIMITED
HEAD OFFICE & WORKS
1280 ST PATRICK ST
MONTREAL

BRANCHES: Toronto, Winnipeg, Vancouver,
SALES OFFICES: Halifax, Quebec, Ottawa, Calgary.

# PAGE & JONES,
*Ship Brokers and Steamship Agents,*
Cable Address: "PAJONES" Mobile.
**MOBILE, ALABAMA, U. S. A.**
All Leading Codes Used.

## KETTLE VALLEY RAILWAY COMPANY.

Notice.—The Kettle Valley Railway Company will apply to the Parliament of Canada, at its next session, for an Act authorizing it to construct the following lines of railway:—

(a) From a point at or near Coalmont on the Joint Section operated by the Applicant Company and the Vancouver, Victoria and Eastern Railway and Navigation Company, thence in a general southerly direction, a distance of about 12 miles to the so called Granite Creek coal areas, in the Province of British Columbia.

And further extending the time within which it may commence the construction of the following lines of railway which it has heretofore been duly authorized to construct:—

(b) From a point at or near Grand Forks to a point 50 miles up the North Fork of the Kettle River, in the said Province.

(c) From a point at or near Otter Summit by the most feasible route to the Aspen Grove mineral district, in the said Province, a distance of about 30 miles.

And further authorizing it to increase its bonding powers in respect of the said lines of railway to $70,000 per mile, and for other purposes.

Dated at Montreal this 13th day of January, 1920.

H. C. OSWALD,
Secretary,
Kettle Valley Railway Company.
PRINGLE, THOMSON, BURGESS & COTE, Ottawa, agents.

# Varnish Economy

True economy in varnish buying is not based on the price per gallon, but on its adaptability for the use intended. Anything less than this increases the finishing room overhead unnecessarily.

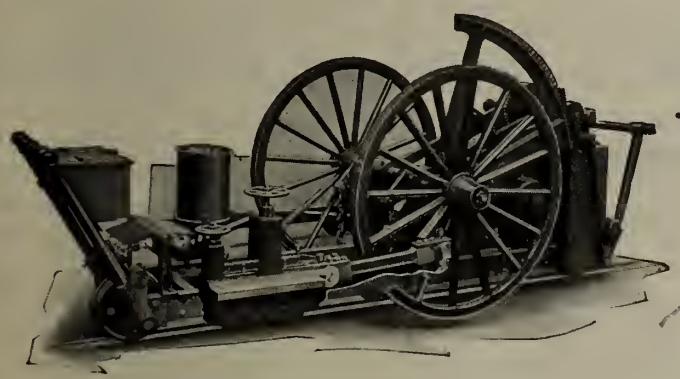
We make specially adapted finishes for all railway and marine uses, embracing Varnishes, Enamels, Stains, Fillers, Surfacers, Primers, Dryers, Shellac, Lionoil,—Clear and in colors, Lionoil Rust-Proof Coating, Varnish Remover, etc.

Let us help place your finishing department on a one hundred per cent efficiency basis.

KILL
LAST AD.

**BERRY BROTHERS INC**
Worlds Largest Makers
Varnishes and Paint Specialties

**WALKERVILLE, ONT.**



Reciprocating Track Grinder.

A most efficient and economical machine for moving rail corrugations, grinding cupped joints, special work and surfacing surplus metal produced in building up rail head by the arc welding process.

**Railway Track-work Company**

30th and Walnut Sts. PHILADELPHIA

# RAMAPO

AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps*
*Double Shoulder Solid Bottom*
*Switch Riser Plates*

SWITCHES
FROGS AND CROSSINGS
MANGANESE TRACK WORK A SPECIALTY

CANADIAN RAMAPO IRON WORKS, LIMITED
NIAGARA FALLS, ONT., CANADA

"Save the surface and you save all"- Paint & Varnish

## Maintain sea-worthiness

Send your vessels off the slips with the assurance that all surfaces are adequately protected. The decaying action of raw, sea air is best counteracted with

# RAMSAY'S MARINE PAINT

Their worth on all marine work is guaranteed by the seventy-eight years of paint knowledge that goes into the making of

*"The right Paint to Paint right."*

**A. RAMSAY & SON COMPANY**

Makers of Paint and Varnish since 1842

Toronto MONTREAL Vancouver

5

SPEND your winter at the Pacific Coast—where the climate is mild and luxurious and where zero weather is unknown. Vancouver has golf the whole year round, splendid roads for motoring, and a number of beautiful spots within easy reach, such as Victoria.

And it has perfect accommodation at the magnificent Hotel Vancouver, the finest hotel on the North Pacific—one of the Canadian Pacific hotels.

*For rates, etc., apply to*

**W. B. Howard, District Passenger Agent**

**CANADIAN PACIFIC RAILWAY**

**TORONTO**

# DOMINION CHUCKS

Best for all severe and heavy duty work

**Dominion Chucks** —furnished in crucible or cast iron bodies.

**The Body** is of heavy cross section: Designed to give broad and deep bearings for the jaws.

**The Jaws** are drop forgings, heat treated; the threaded portion makes 180 deg. contact with the screw.

**The Screws** are large in diameter, broached at both ends and are reversible.

ALSO DESIGNERS AND MANUFACTURERS OF

Rubber Manufacturing Machinery.

Rolling Mills Equipment,

Electric Railway Motor Gears and Pinions,

Heat Treated Tool Steel Gears and Pinions.

Cut Gears — Worm, Spur, Helical and Bevel.

## Dominion Steel Products Co., Limited

ENGINEERS AND MANUFACTURERS.

Brantford, Ontario

Cable Address - - - - - - - - - "Dominion Brantford"

Codes Used - A.B.C., 5th Edition

**Engineers and Contractors**

**Analyses and Tests of All Kinds of Material, Railway and Marine Work a Specialty**
MILTON HERSEY CO., Limited.
The Largest Commercial Laboratories in Canada.
MONTREAL WINNIPEG

THE ARNOLD COMPANY
ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
REPORTS, DESIGN AND CONSTRUCTION
Complete Railway Shop and Terminal Properties—Electrification of Steam Railroads.
OUR EXPERIENCE COVERS THIRTY-FIVE PLANTS
CHICAGO

ROBERT W. HUNT, President CHARLES WARNOCK, Vice-Pres. and Genl. Mgr.
**Robert W. Hunt & Co., Limited**
Consulting and Inspecting Engineers
Chemists and Metallurgists
Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement; Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.
Resident inspectors at all important manufacturing centres in Canada, the United States and Great Britain.
REPORTS ON PROPERTIES AND PROCESSES.
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Branches: TORONTO VANCOUVER LONDON, ENGLAND

ANGUS SINCLAIR, C.E.
*Railway Contractor*
OFFICE: EXCELSIOR LIFE BUILDING,
Adelaide and Toronto Sts., Toronto

K QUALITY
**GEORGE KERSLEY**
FANCY VENEERS LUMBER SHIP TIMBERS
TEAK LIGNUM VITAE
MONTREAL, Que.

**CANADIAN BRONZE LIMITED**
Brass Wearing Parts for Locomotives. Journal Bearings for Freight and Passenger Service. BABBITTS. Miscellaneous Brass Castings for Railroads.
Works and Office: 69 Delorimier Avenue, MONTREAL, QUE.

**GRIFFIN & BRINKERHOFF**
P.O. Box 97, Windsor, Ont.
Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe. Best Wheel Grinders in the World.

**Midland Shipbuilding Company, Limited**
JAMES WILKINSON, Manager
Builders of STEEL TUGS, SCOWS and DREDGE HULLS
Special Attention Given to all Kinds of Hull Repairing.
Steel and Wood Plant Operated by Hydro Electric Power. Always Ready.
Day Telephone 258.
Night Telephone 254 and 348.
Midland, Ont.

**DOMINION TOWING & WRECKING CO., LIMITED**
Tug Strathmore
" Strathbell
Harbour Tug Service
Lighter Strathbuoy—Capacity, 700 tons.
Equipped for all kinds of Towing, Wrecking, Etc.
Sand and Gravel supplied for Concrete Work, Rock and Soil Filling for Cribwork.
Dock Telephone, South 184; Head Office, South 2383. JOHN BELL, General Manager, 509 Grain Exchange, Fort William, Ont.

**REID TOWING & WRECKING CO.**
Port Huron, Mich.
Capt. J. T. REID,
*General Manager.*
*Marine Salvaging Contractors*
Tugs, Divers, Steam Pumps, Hydraulic Jacks, Lighters, Wrecking Hawsers, Etc.
**REID TOWING & WRECKING CO. LTD.**
Sarnia, Ont.
R. M. WOLVIN,
*President,*

**MONTREAL TRANSPORTATION CO., LIMITED**
*Grain and General Forwarders*
Imperial Bank Chambers, MONTREAL, QUE.

# "Here's Where We Got Our Start"

"Look, Nell—this coupon! Remember the night you urged me to send it in to Scranton? Then how happy we were when I came home with the news of my first promotion? We owe it all, Nell, my place as Manager, our home, our comforts—to this coupon."

Thousands upon thousands of men now know the joy of happy, prosperous homes because they let the International Correspondence Schools prepare them in their spare time for bigger work. You will find them in city, town and country—in office, factory, shop, store, mine and mill, on farms and on railroads.

There are clerks who became Advertising Managers, Salesmen and Executives; carpenters who became Architects and Contractors; mechanics who became Engineers and Electrical Experts; men and boys who rose from nothing at all to splendid responsible positions.

More than a million men and women in the last 28 years have advanced themselves in position and salary through I. C. S. help. Over 100,000 students are studying right now. You can join them and get in line for promotion.

The first step to success in the I. C. S. way is to choose your career from this list and mark and mail this coupon here and now.

TEAR OUT HERE

**INTERNATIONAL CORRESPONDENCE SCHOOLS**

Dept. 8417, 745 St. Catherine St., W., Montreal, Canada

Explain, without obligating me, how I can qualify for the position, or in the subject, before which I mark X.

| | |
|---|---|
| ☐ LOCOMOTIVE ENGINEER | ☐ BUSINESS MANAGEMENT |
| ☐ Locomotive Fireman | ☐ Private Secretary |
| ☐ Traveling Engineer | ☐ TRAFFIC MANAGER |
| ☐ Traveling Fireman | ☐ BOOKKEEPER |
| ☐ Air Brake Inspector | ☐ R. R. Agency Accounting |
| ☐ Air Brake Repairman | ☐ R. R. Gen'l Office Acc'ting |
| ☐ Round House Foreman | ☐ Higher Accounting |
| ☐ Trainmen and Carmen | ☐ Stenographer and Typist |
| ☐ Railway Conductor | ☐ Mathematics |
| ☐ MECHANICAL ENGINEER | ☐ SALESMANSHIP |
| ☐ Mechanical Draftsman | ☐ ADVERTISING |
| ☐ Toolmaker | ☐ ELECTRICAL ENGINEER |
| ☐ Machine Shop Practice | ☐ Electrician |
| ☐ Boiler Maker or Designer | ☐ Electric Wiring |
| ☐ Stationary Engineer | ☐ Electric Lighting |
| ☐ Marine Engineer | ☐ Electric Railways |
| ☐ Gas Engine Operating | ☐ Telegraph Engineer |
| ☐ CIVIL ENGINEER | ☐ Telephone Work |
| ☐ Surveying and Mapping | ☐ MINE FOREMAN OR ENG'R |
| ☐ R. R. Constructing | ☐ CHEMIST |
| ☐ Bridge Engineer | ☐ Metallurgist or Prospector |
| ☐ ARCHITECT | ☐ AUTOMOBILE OPERATING |
| ☐ Architectural Draftsman | ☐ Auto Repairing |
| ☐ Contractor and Builder | ☐ Good English ☐ Spanish |
| ☐ Structural Engineer | ☐ AGRICULTURE ☐ French |
| ☐ Concrete Builder | ☐ Poultry Raising ☐ Italian |

Name_____

Occupation & Employer_____ 7-26-19

Street and No._____

City_____ Prov._____

# New Whiting TURNTABLE TRACTOR

Sheet steel housing removed to show machinery.

A simple, rugged design, built to stand up under most severe service. Made for turntables of any capacity and pit rail radius.

All machinery is located underneath cab floor and enclosed on all sides in sheet steel housing. Sliding doors give ready access for inspection and repair.

*Send for Detailed Specifications*

**WHITING FOUNDRY EQUIPMENT CO.**

**Harvey (Chicago Suburb) Ill.**

**Locomotive and Coach Hoists—Transfer Tables**

# WHITING

**CRANES OF ALL TYPES / FOUNDRIES EQUIPPED COMPLETE**

# WATER TRIPS EVERYWHERE

## "from Frost to Flowers"

## CANADA STEAMSHIP LINES, LIMITED

*Representing*

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|---|---|---|
| Furness Bermuda Line | | Bermuda |
| United Fruit Co. | | Jamaica, Porto Rico |
| Clyde Line | | Florida |
| Mallory Line | | Savannah |
| Old Dominion Steamship Co. | TO | Washington |
| Southern Pacific Co. | | New Orleans |
| Quebec Steamship Co. | | West Indies |
| Lamport & Holt | | Brazil and South America |
| Ward Line | | Cuba |
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Winter and Summer our Ticket Offices are at your disposal. Let us plan your winter vacation and make all arrangements for reservation, passports, etc.

**Havre Service**

Compagnie Canadienne Transatlantique, Limitee

Frequent Sailing from West St. John. Further particulars upon request.

**Ship Your Freight by Water**

Save Both Time and Money.

We have excellent facilities for handling freight of all kinds. Through bills of lading issued via all ocean lines, via Montreal.

**CANADA STEAMSHIP LINES LIMITED** *Head Office* Victoria Square Montreal

50 YEARS IN THE BUSINESS

OVER 60,000,000 FILES A YEAR

## Labor Costs More Than Files

And it costs more today than it ever did before.

Don't waste your workmen's time, therefore, with dull files.

Throw them away as soon as the edge begins to go, and buy new ones.

Famous Five Files keep their edge longest. They are made of highly specialized steel, accurately cut and thoroughly hardened.

Specify them when ordering. They are:

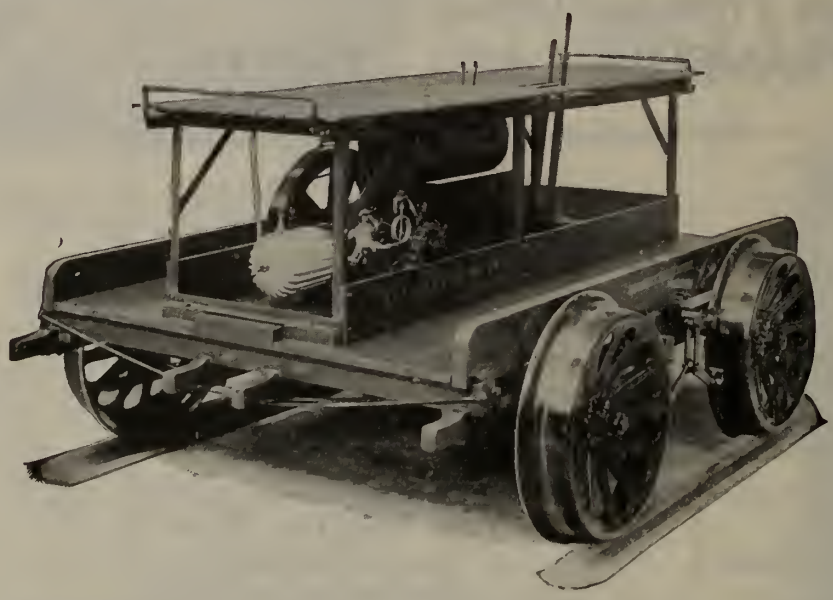
KEARNEY & FOOT GREAT WESTERN
AMERICAN ARCADE GLOBE

Made in Canada by:

**Nicholson File Company**

PORT HOPE ONTARIO

# Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

## Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

***For prices and particulars write to***

**Head Office - - New Glasgow, Nova Scotia**

**Western Sales Office, Room 14, Windsor Hotel, Montreal**

# MARINE REFRIGERATION

ANHYDROUS AMMONIA ($N.H_3$.) CARBONIC ANHYDRIDE ($C.O_2$.)

Improved Ethyl Chloride Systems

COLD AIR MACHINERY

(MADE IN CANADA)

SOLE BRITISH LICENSEES AND MANUFACTURERS OF

"Viking" Rotary Pump Rotary Air Pumps and Blowers

Shipbuilding Machinery and Ships Auxiliaries

CANADIAN AGENTS OF:

UNION ANTI-FOULING COMPOSITION CO. LTD., GLASGOW

Makers of: "Union" Anti-Fouling and Anti-Corrosive Compositions. High grade material used by the British Government, Admiralty, and other prominent and leading Organizations.

# A. G. KIDSTON & COMPANY

**17 St. John St. - MONTREAL**

*Made in Canada*

# WHICH CAN YOU MOVE THE EASIEST—

A weight suspended on a string.

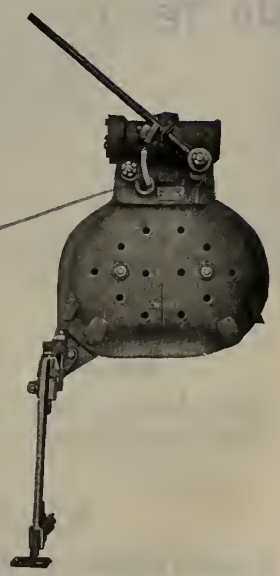
The same weight dragged over the floor.

The weight suspended on a piece of string swings from side to side easiest of course.

This is the principle behind the Franklin No. 8 pin swung pendulum door.

The Franklin No. 8 door is open just long enough to get the coal in and the scoop out.

Its quick operation guarantees maximum safety to the men in the cab should anything happen in the firebox.

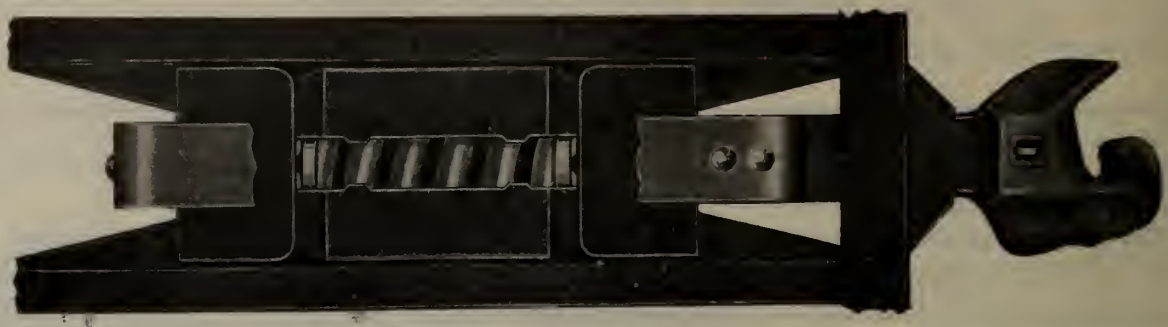


## Franklin Railway Supply Co. of Canada Limited

Transportation Bldg., Montreal

# Murray Cast Steel Friction Draft Gear

MADE IN CANADA



If the superiority of this device has never been apparent to you, it will be upon thorough investigation. For it will reveal that our claims for excellence are based on actual facts.

May be used with any draft attachment.

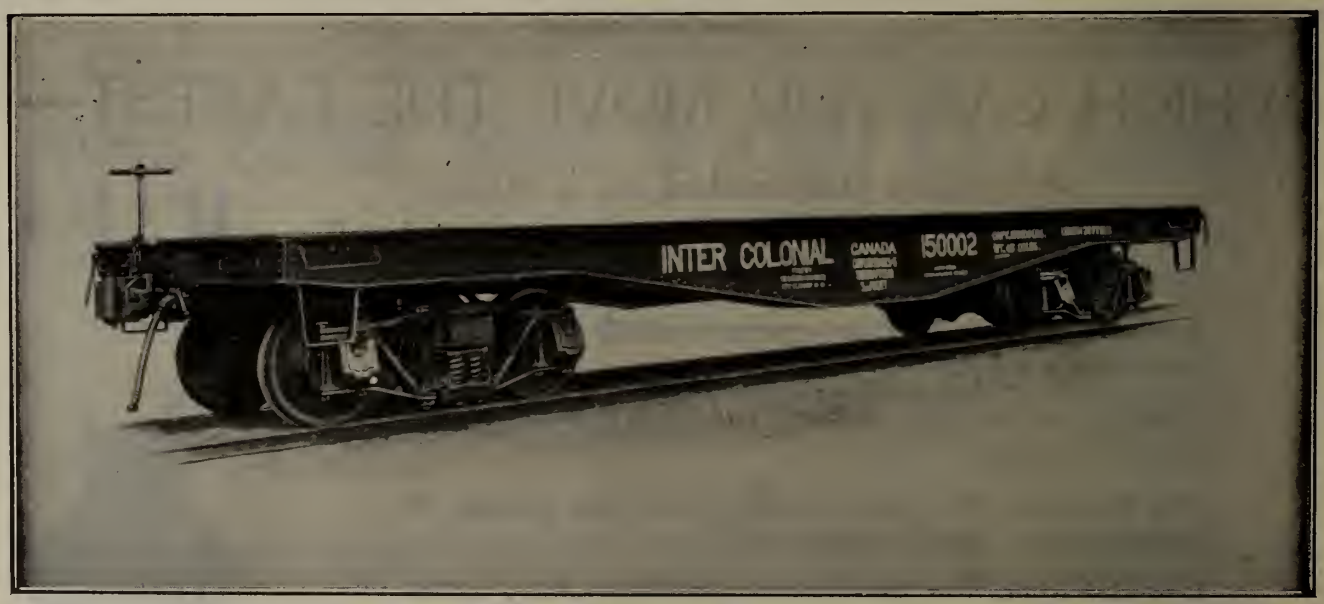
In use on thousands of cars, including U.S. R.A. standard cars.

KEYOKE RAILWAY EQUIPMENT CO.

**Chicago, Ill.**

*Canadian Agents,*

**International Equipment Company Ltd., Transportation Building, Montreal, Quebec**




75 on Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSES AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

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# Halifax Shipyards Limited

## Halifax, Nova Scotia

***Steel Ship Builders and Ship Repairers***

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Hull Repairs Electric Welding
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**Shipyards, Drydock and Shops - - Halifax, N. S.**
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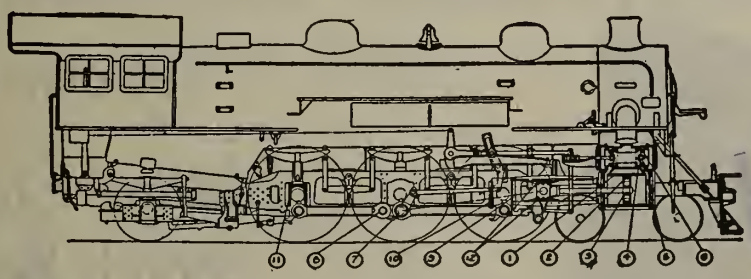
# Hunt-Spiller Gun Iron

**12 OF THE PRINCIPAL PARTS OF A LOCOMOTIVE**

1 Cylinder Bushing
2 Cylinder Packing
3 Pistons
4 Valve Bushings
5 Valve Packing
6 Valve Bull Rings



7 Side Rod Bushings
8 Knuckle Pin Bushings
9 Pedestal Shoes
10 Pedestal Wedges
11 Driving Boxes
12 Crosshead Shoes

## Out of the Shop 18 Months

The Engineer is proud of this record. He speaks of the engine as "my engine" and he claims this record is possibly due to Hunt-Spiller Gun Iron valve and cylinder packing, valve and cylinder bushings and slide rod bushings.

Shop records show that the original set of Hunt-Spiller Gun Iron side rod bushings applied when the engine was overhauled 18 months ago, are still giving good service.

This record proves that side rod bushing economy is possible by equipping your engines with

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**Canadian Representative: Canuck Supply Co., 418 St. James St., Montreal, P.Q.**

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This illustration shows one man, with a Prest-O-Lite blow-pipe, cutting ⅜-inch sheet steel piling, used in the construction of the protection piers of a large drawbridge. This one man handled the entire job, cutting an average of seven feet of piling per hour—an enormous saving over the old slow and costly method of sawing, which required the services of two men.

**Prest-O-Lite PROCESS**

offers splendid opportunity for substantial savings in manufacturing, construction and repair work.

Prest-O-Lite Oxy-Acetylene welding and cutting is opening the way to construction and repair operations which cannot be performed by any other process.

Employs both gases (acetylene and oxygen) in portable cylinders. Prest-O-Lite Dissolved Acetylene is backed by Prest-O-Lite Service, which insures prompt exchange of full cylinders, for empty ones. Provides dry, purified gas, insuring better welds, quicker work and lower operating cost.

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40" Stroke Engine Built for Imperial Munitions Board.

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But if you are welding locomotive frames and other heavy steel sections, use

# THERMIT WELDING

**and you won't have to try again**

**Thermit Vs. Other Methods—"Experience No. 5"**

The above illustration shows a trailer truck tongue belonging to an engine of a large Southern railroad, which was recently Thermit-welded with entire success, after repeated and unfruitful attempts were made to repair the broken tongue by oxy-acetylene welding. At latest reports the tongue had been in service for six months and was still in perfect condition.

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Mason Reducing Valves, Mason Pump Regulators.

"MADE IN CANADA" and guaranteed as to construction and service.

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## HEAVY CRUDE OIL ENGINES

### The Philippine Vegetable Oil Co.
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A short story—3 lines only, but a story with a moral:

M.S. "Nuuanu"—320 B.H.P. Bolinder Engine.

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M.S. "Tankerville"—1000 B.H.P. Bolinder Engine now building.

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Motor Tanker "Katherine" equipped with 640 B.H.P. Bolinder Engines.

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TO
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**Or to some other Pacific Coast Point or to**

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| Alabama | Florida | New Jersey | South Carolina |
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**Golfing, Tennis, Polo, Bathing, Fishing, etc., or just rest.**

**Tickets on Sale Now** **Stop-over Privileges Allowed**

Apply to any Agent of the Company who will be pleased to furnish you with complete information as to fares, routes, etc.

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Diameters from 8 to 84 inches. Lengths up to 40 feet, with coupling bands supplied free for longer lengths.

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"We figured that after the installation had been in three or four months it had more than saved its entire cost."

So writes a prominent user of Bowser Oil Storage. Their equipment has been in use thirteen years with no operating troubles or upkeep cost.

BOWSER
Battery Storage System
Fig. 109

If you are not using Bowser Storage Systems for your oils you are losing money every day.

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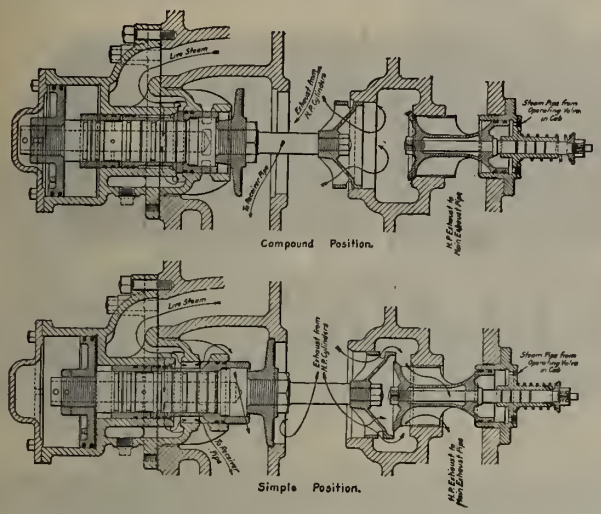
# Alco Intercepting Valve




In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

In the ALCO system of compounding these conditions are covered by two of the functions of the intercepting valve.

As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

## Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

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That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

The Flexibility in the bolt serves to accommodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefulness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintainance.

***In use on all the prominent railroad systems of Canada.***

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## HACK SAW BLADES

As HACK SAW BLADES are used in all machine and metal-working shops, why not use the "STERLING" You can find none better than the "STERLING" Tell us your troubles and requirements. We can help and satisfy you.

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**Diving Apparatus**
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Capital Paid up..... 7,000,000
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Substantial Construction.
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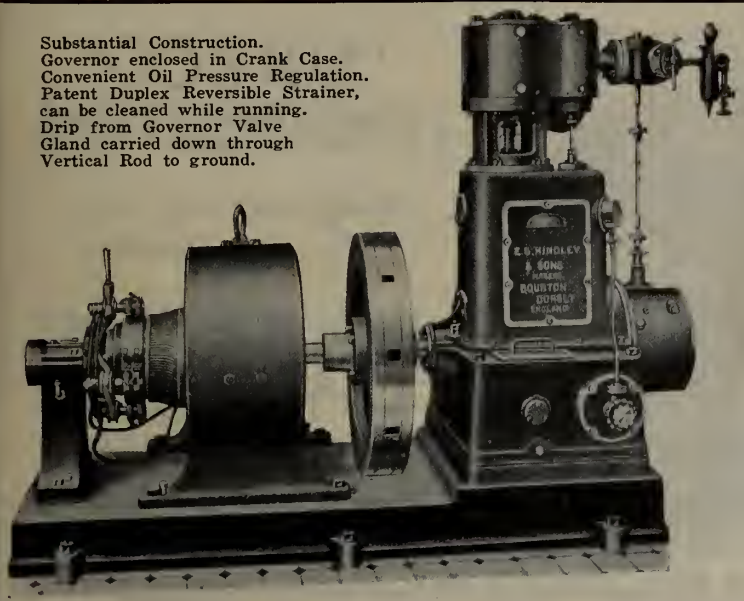
Drip from Governor Valve Gland carried down through Vertical Rod to ground.



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Also Two-Crank Enclosed Compound Engines from 100 to 750 B. H. P.

*Write for full particulars.*

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If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

Why not save this Cost by always using the **HOLD TITE NUT LOCK?**

The cheapest device used; absolutely effective. Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

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**The HOLD TITE NUT LOCK**
**STATEMENT**

Showing comparative cost using a Standard Nutlock now on the market and the HOLD TITE NUT LOCK as applied to the car body of a standard 40 ton box car.

STATEMENT was prepared from the specifications of the body of a standard box car which include the truck.

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|---|---|
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| Difference in Cost (per car) in favor using the HOLD TITE NUT LOCK | $1.85 |

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**THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF**

Columbia

## Columbia High Voltage Signal Cell

A Margin of .2 volt per cell is often the difference between signal failure and efficient operation of track and signal circuits.

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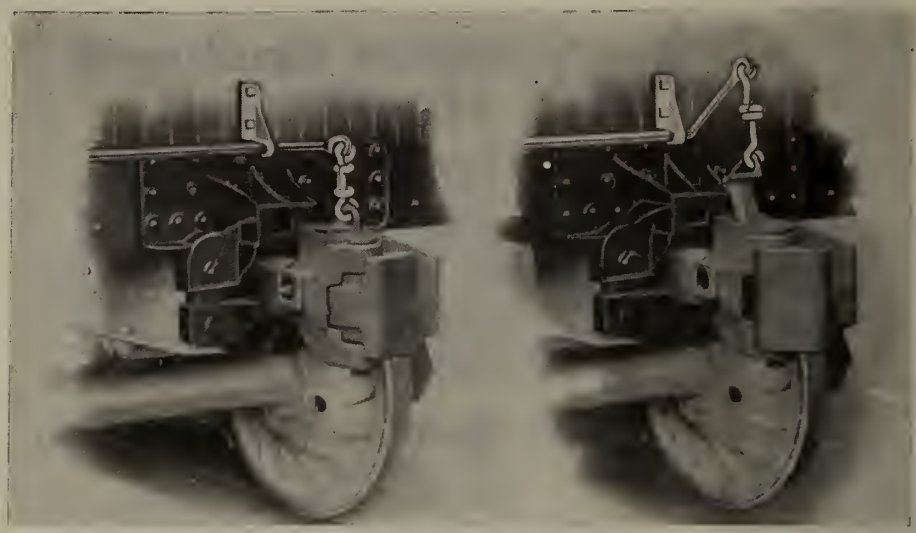

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Coupler Release Rigging
(PATENTED)

Positively Prevents Penalty Defects

Requires No Change in Your Standard Hand-Rod

Complies with U.S.R.R. Administration Requirements

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THE RIGHT WAY—
THE TWO WAY—
THE TIGHT WAY

Rail Seat inclined and pedestaled
Hook on inside flange of Rail

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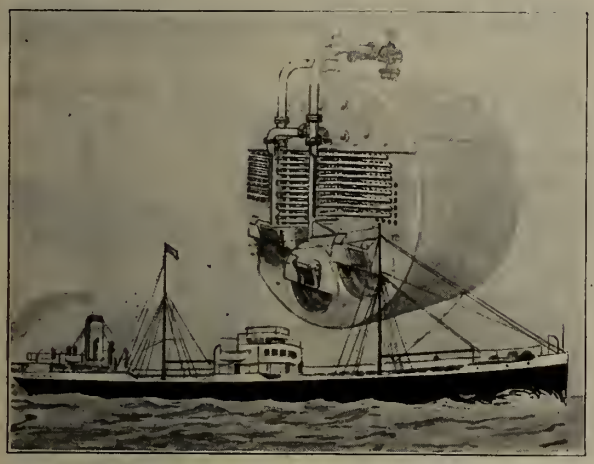

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Locomotive Lagging
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**FOR AIR BRAKES ON LOCOMOTIVES AND CARS**

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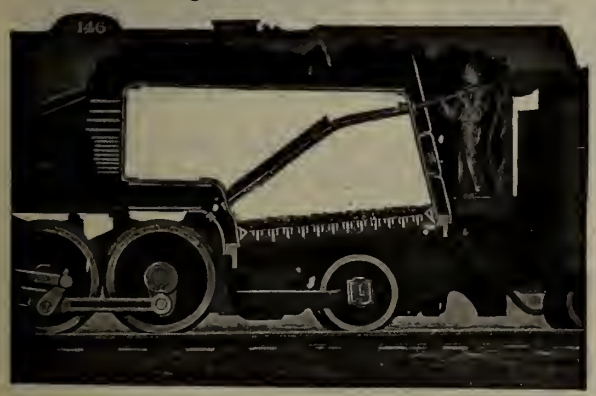
**For Canada, Canadian Johns-Manville Co., Ltd., Toronto.**

Lagonda Arch Tube Cleaner



Lagonda Cleaner Removing Scale from Arch Tubes.

# Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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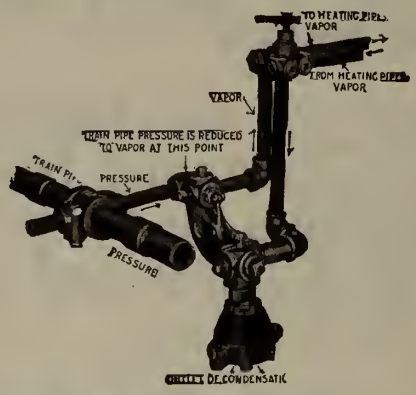
# VAPOR CAR HEATING CO. of Canada, Limited

MADE IN CANADA AT

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*Works:*
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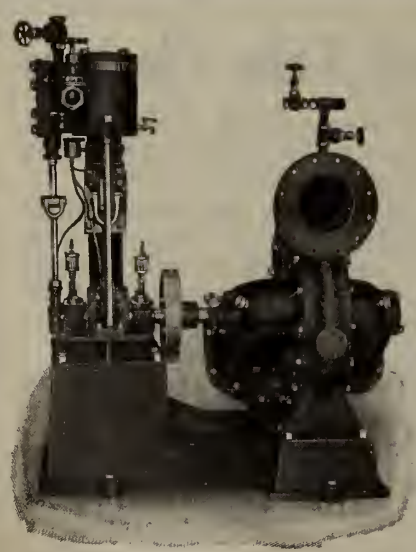
**Canadian Works: HAMILTON, ONT.**

Brake Beams for all Classes of Cars, Locomotives and Electric Equipment



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Our lines are the result of years of careful perfecting of design, and we are using only the best labor and material available.

**Every Pump Carefully Tested Before Being Shipped.**

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Locomotive type for Round Houses
Vertical type for Pump Houses

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Concerning maintenance of the Apparatus—Compliance with Government Regulations—Handling of Traffic, Accounting, Etc.

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MADE AND INSTALLED
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Car Bolster Spring with Pressed Steel Caps

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LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.
EQUALIZING, DRAWBAR, BUFFER AND SPIRAL SPRINGS of all kinds.
STREET RAILWAY SPRINGS, from the largest to the smallest.
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# THE PYLE-NATIONAL COMPANY

Type "K-2" 500 watt 32 volt Turbo-Generator

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Steel Co. of Canada.
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Reid Towing and Wrecking Co.

**WRENCHES**
Canada Foundries & Forgings, Ltd.
Dominion Brakeshoe Co.
J. H. Williams & Co.

# Davis-Bournonville

## Welding Fluxes and Scaling Powders

Molten metal exposed to the air quickly oxidizes. Weld metal containing oxide is weak and brittle. Sound autogenous welding requires that all oxide and scale be removed. Steel gives little trouble in welding because its oxide melts under the oxy-acetylene flame and floats to the top, but the oxides of other metals in general must be floated and dissolved by fluxes suitable for each metal.

Cast aluminum can be welded without flux by using the puddling spoon, but welding of some aluminum castings is impracticable without flux. DeeBee aluminum powder is recommended for welding broken motor crank cases and other thin cast aluminum. It speeds up welding and makes smooth work easy.

Napolitan flux developed in the Davis-Bournonville laboratory as a result of many experiments is widely used in welding aluminum kitchenware and other aluminum products. Its action is marvelous; all resistant film is broken down and the molten metal flows like water. Atlas scaling power eliminates scale, oxide and foreign matter from molten cast iron and facilitates clean welding. If you use D-B cast iron welding sticks and Atlas scaling powder you will have no hard spots in the welds to spoil cutting tools when machined.

Davis-Bournonville torches, welding rods and welding fluxes, in the hands of competent men, sweep away welding troubles and bring joy to the welding shop. Try them and be convinced. On sale at branches in principal cities.

Davis-Bournonville supplies may cost more but they are worth more.

## Davis-Bournonville Company

**Sales Rooms at: 168 King St. W., Toronto; 44 Craig St. W., Montreal.**
**Factory at Niagara Falls, Ontario.**

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Boston
Buffalo
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Chicago
Cincinnati
Cleveland
Dallas
Detroit
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DAVIS
APPARATUS
DAVIS-BOURNONVILLE CO.
"MADE IN CANADA"

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Minneapolis
Montreal
New York
Philadelphia
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# The Canadian
# PILLING TRACTOR

## Manufactured in Canada by Canadian Workmen

A Pilling Tractor in operation in Canada

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## Taylor & Arnold Engineering Co., Ltd.

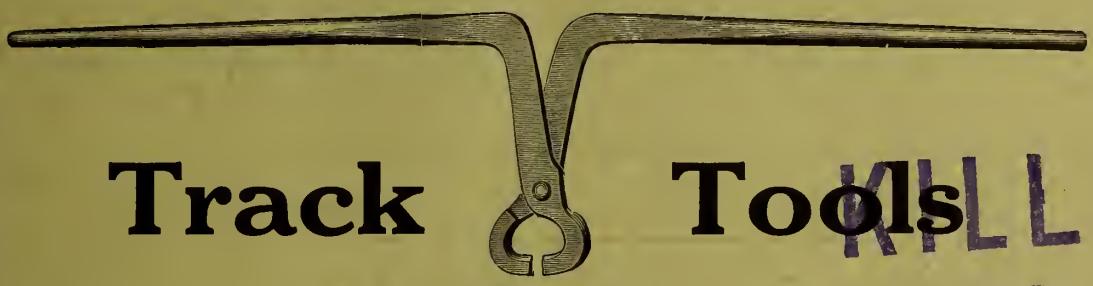
**Montreal** **Toronto** **Winnipeg**

# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 266 TORONTO, CANADA, APRIL, 1920 Subscription Rates, Page 189





# Track Tools

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LAST AD.

*"Made in Canada"*

Place your orders for Track Tools early this year and specify "Canadian made." The reasons are obvious.

We offer you a properly designed tool equal to any imported, and give you a Canadian guarantee.

*Write for our latest catalogue.*

## B. J. Coghlin Co., Limited

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| Harvard Turnbull & Co., Agents, | - - | Toronto. |
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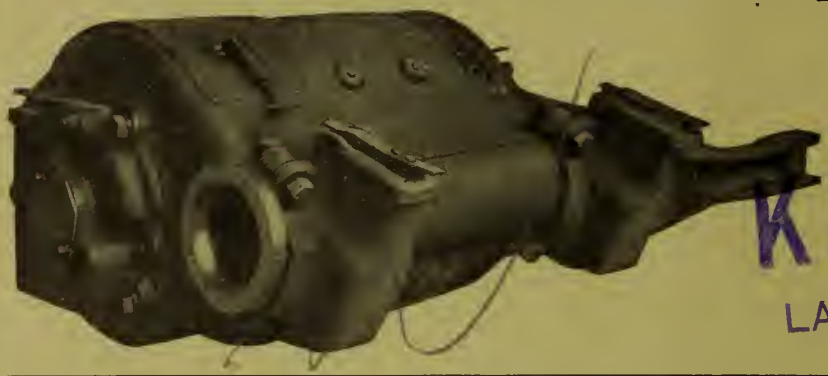
| Filer-Smith Mach. Co., Ltd., Agents | - - | Winnipeg. |

# Westinghouse

## No. 506 Motor Equipments for Safety Cars



Rating 25 Horse Power at 600 volts, with either sleeve or ball bearings, for 24 or 26 in. wheels.

Owners of Westinghouse Apparatus are invited to make use of our Service Dept. Repair Shops, where repair work will receive prompt and efficient attention. Repair shops are located at:—
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STEEL and IRON CASTINGS
CARGO WINCHES, STEERING ENGINES and CAPSTAN ENGINES

The "Hyde" Spur Geared Steam Windlass.

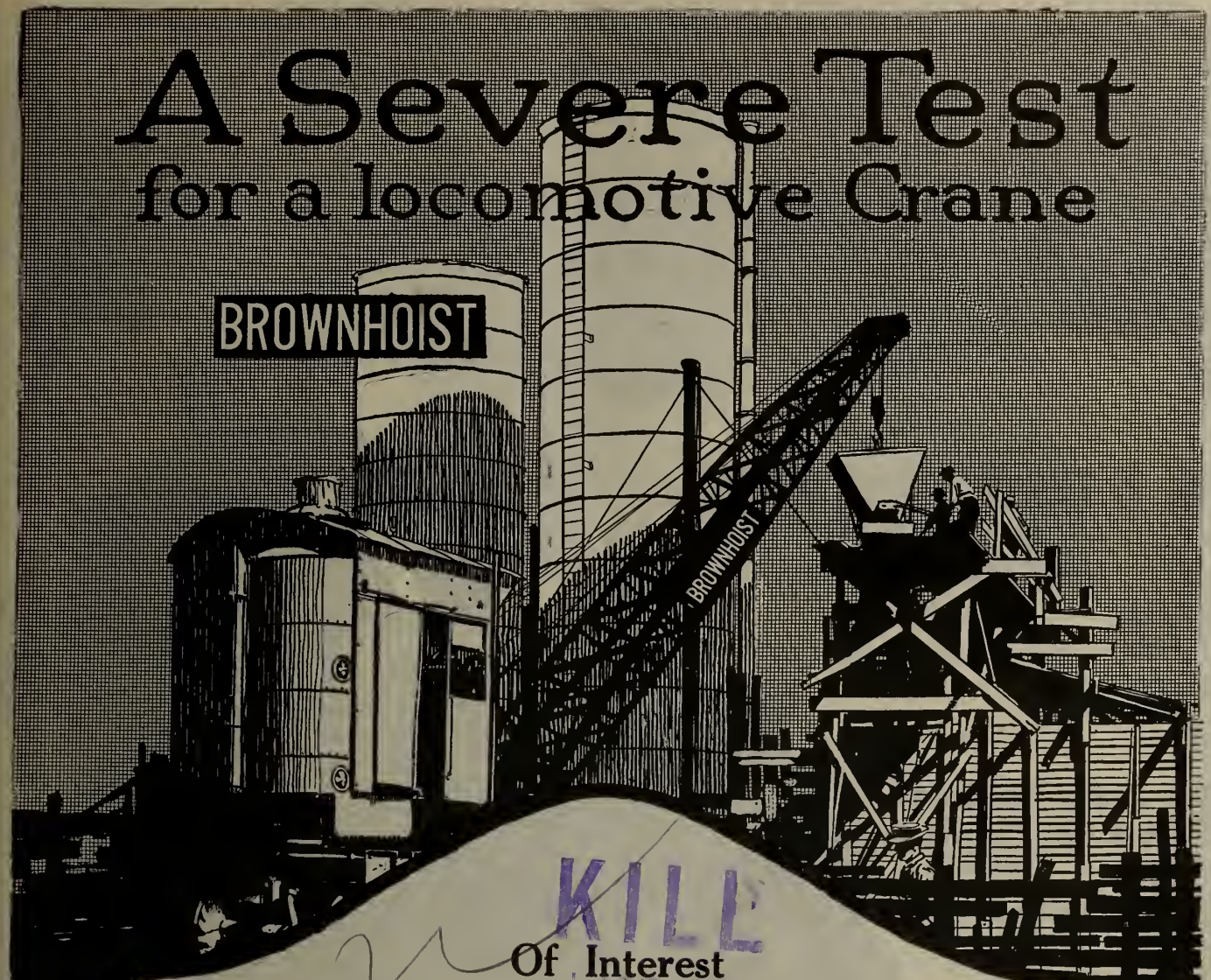
**PROPELLER WHEELS**
In any size and any material

*Manufactured by*

**The WM. KENNEDY & SONS, Limited**
OWEN SOUND, Ont.

ESTABLISHED 1860

# A Severe Test for a locomotive Crane




KILL
LAST AD.

## Of Interest to crane users and prospective users

"It takes a good crane to withstand this abuse," is the statement made by the superintendent on this construction job. The work consisted of building 6 large concrete casings. And conditions were such that it was impossible to get the cars of cement and materials closer than 400 ft. to the mixer. A Brownhoist Crane was used for this work and also to take away the concrete. This continuous traveling back and forth day after day is a very severe test for a crane. The Brownhoist was on the job every day for the 4 months and not one cent was spent for repairs. This was an excellent test showing the rugged construction of a Brownhoist Crane, and showing the saving in operating costs when a Brownhoist Crane is used. It pays to buy a Brownhoist—although it may cost more.

*Write for catalog K, which shows and describes Brownhoist Cranes*

## The Brown Hoisting Machinery Company

**40 Years in Crane Business** — **Cleveland, Ohio, U. S. A.**

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists

Branch Offices in New York, Pittsburgh, Chicago and San Francisco

C.KEISER

# The BERTRAM Page

## MACHINE TOOLS

## No. 8 Double Angle Shear
on plain base

Capacity—8" x 8" x 1¼" angles.

Motor drive—15 H.P. Motor.

**The John Bertram & Sons Co., Limited**
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WINNIPEG
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HALIFAX
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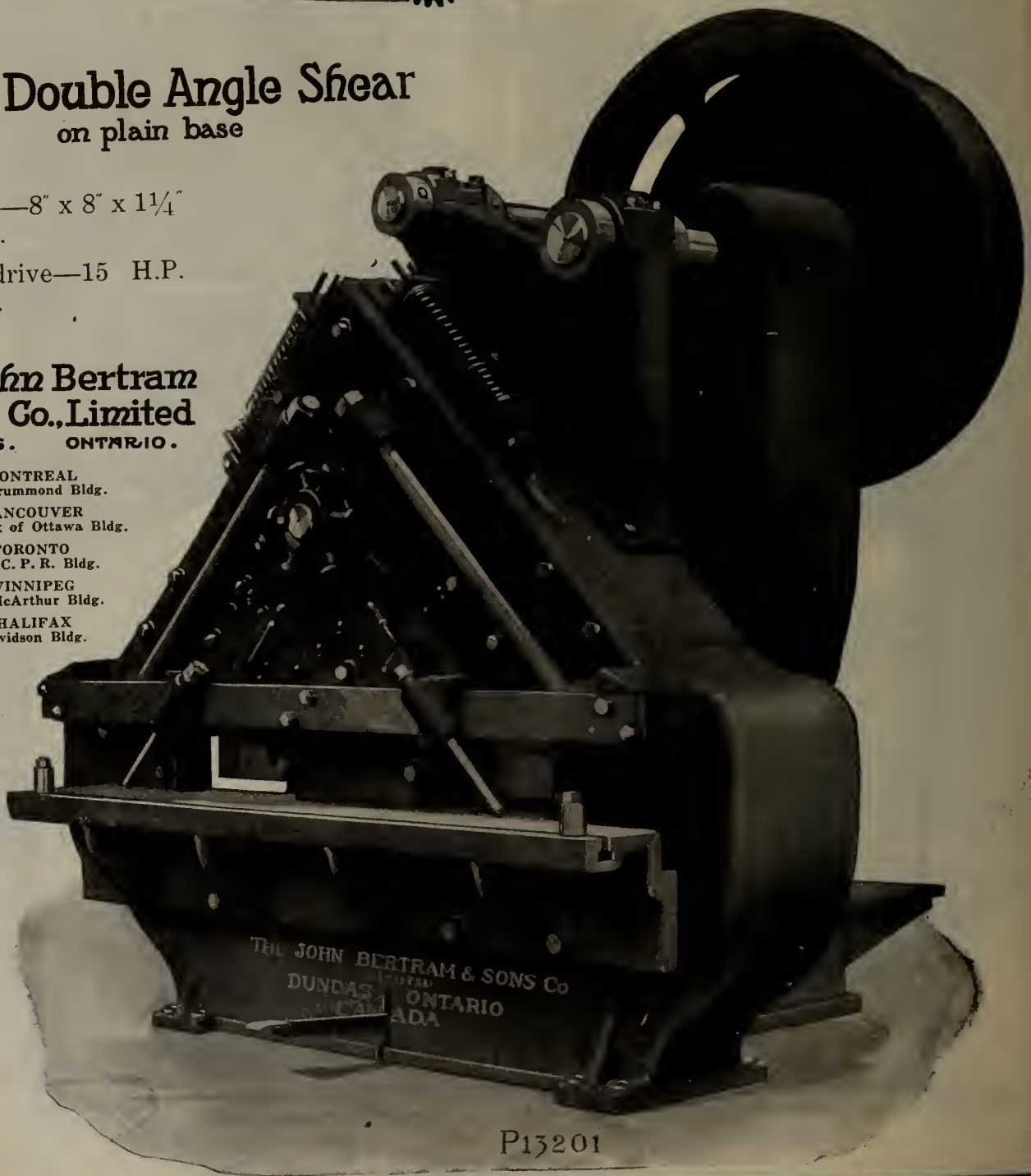



P13201

CHAPTER 4.

# Interlocking Interests of Canadian Rail and Water Transportation

Reference was made in our last chapter to the intimate inter-relation of Canadian Railway, Marine and Industrial activities.

This is especially true of the interlocking interests of Canadian Railways and Canadian Navigation Companies. For Canadian Railways own and operate great fleets of steamships on the high seas and on the Great Lakes and the Rivers.

As the only Railway paper in Canada, Canadian Railway and Marine World has, for 22 years, made, and held, a commanding place for itself in the esteem of the far-seeing railway men who were the creators and are the directors of the Canadian Merchant Marine. This fact makes the WORLD a stronger Marine paper than could possibly be created by any group of men, however able, who undertook to issue a purely "marine" publication.

And, conversely, the WORLD is a stronger Railway paper by reason of its financial understanding of maritime affairs.

This anomalous condition of affairs is peculiarly Canadian. It is a reflex of the Dominion's industrial development, in which the Railways blazed the way, conquering the wilderness, fostering agriculture and mining, building industry and finally creating merchant fleets to carry the railway-built commerce to every corner of the globe.

Thus, though in one sense ours is a Railway and a Marine audience; in a larger sense our readers are the leaders who have built and are building the "new" Canada; and their well paid lieutenants upon whose capable shoulders they lean in carrying out great plans.

NEED LAST STATEMENT. ADVERTISEMENT.

**CANADIAN RAILWAY AND MARINE WORLD**

**Toronto** *Member of* **Canada**

*Audit Bureau of Circulations, Associated Business Papers, Canadian National Newspapers and Periodicals Association, Canadian Press Association*

# Fairbanks Dial Indicator

Direct Reading
Gross or Net

Full Capacity

No Loose Weights
No Calculation

May be applied to any existing platform scale.

The Fairbanks Dial Indicator reduces the weighing error and the cost of weighing.

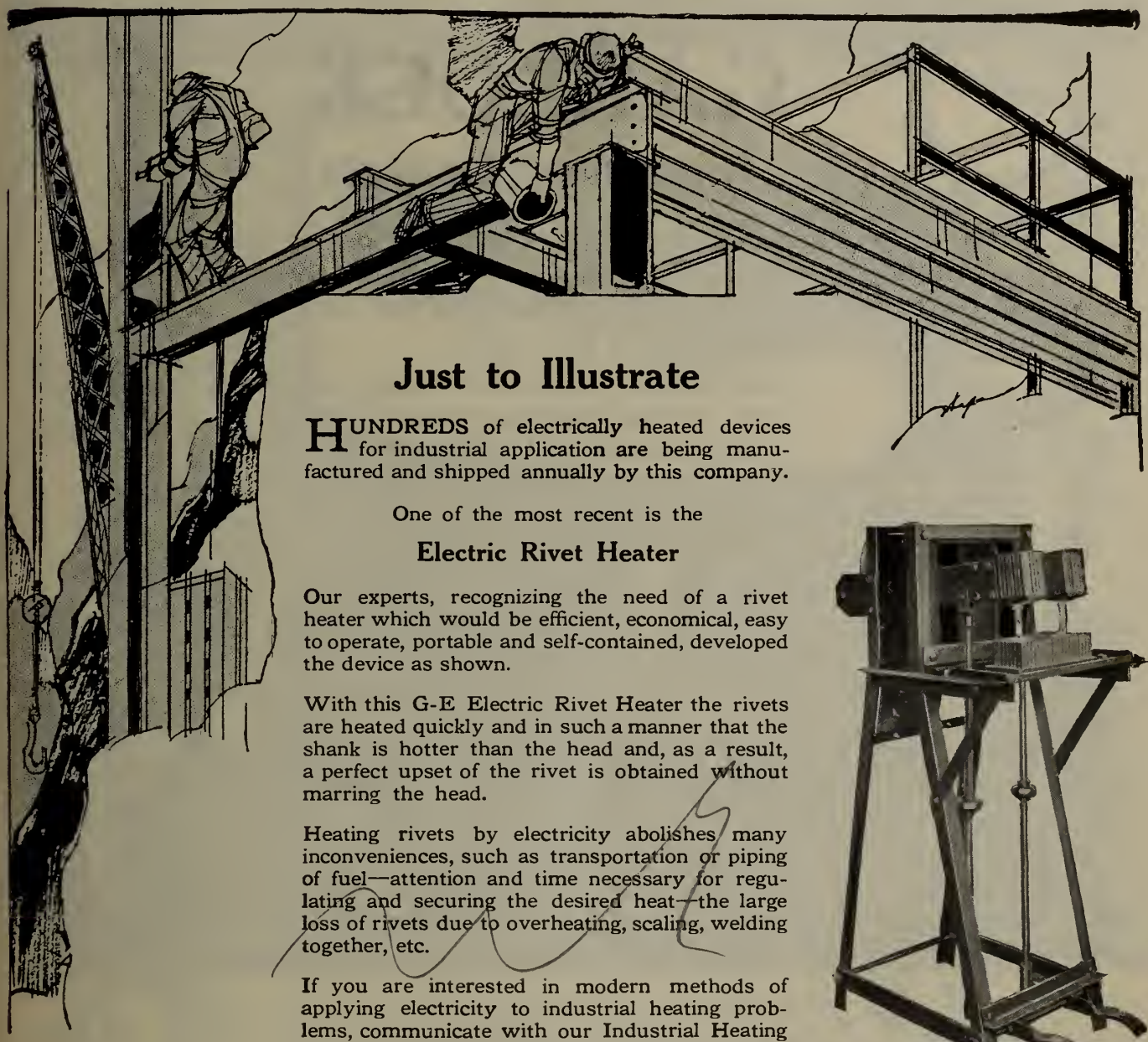
Under present conditions, both of these are more important than ever before.

## The Canadian Fairbanks-Morse Co., Limited

*"Canada's Departmental House for Mechanical Goods"*

St. John, Quebec, Montreal, Ottawa, Toronto, Windsor, Hamilton,
Winnipeg, Saskatoon, Calgary, Vancouver. Victoria.

# *The fortunate fact that nature provided for the transformation of electric energy into heat is rapidly securing world-wide appreciation*



## Just to Illustrate

HUNDREDS of electrically heated devices for industrial application are being manufactured and shipped annually by this company.

One of the most recent is the

**Electric Rivet Heater**

Our experts, recognizing the need of a rivet heater which would be efficient, economical, easy to operate, portable and self-contained, developed the device as shown.

With this G-E Electric Rivet Heater the rivets are heated quickly and in such a manner that the shank is hotter than the head and, as a result, a perfect upset of the rivet is obtained without marring the head.

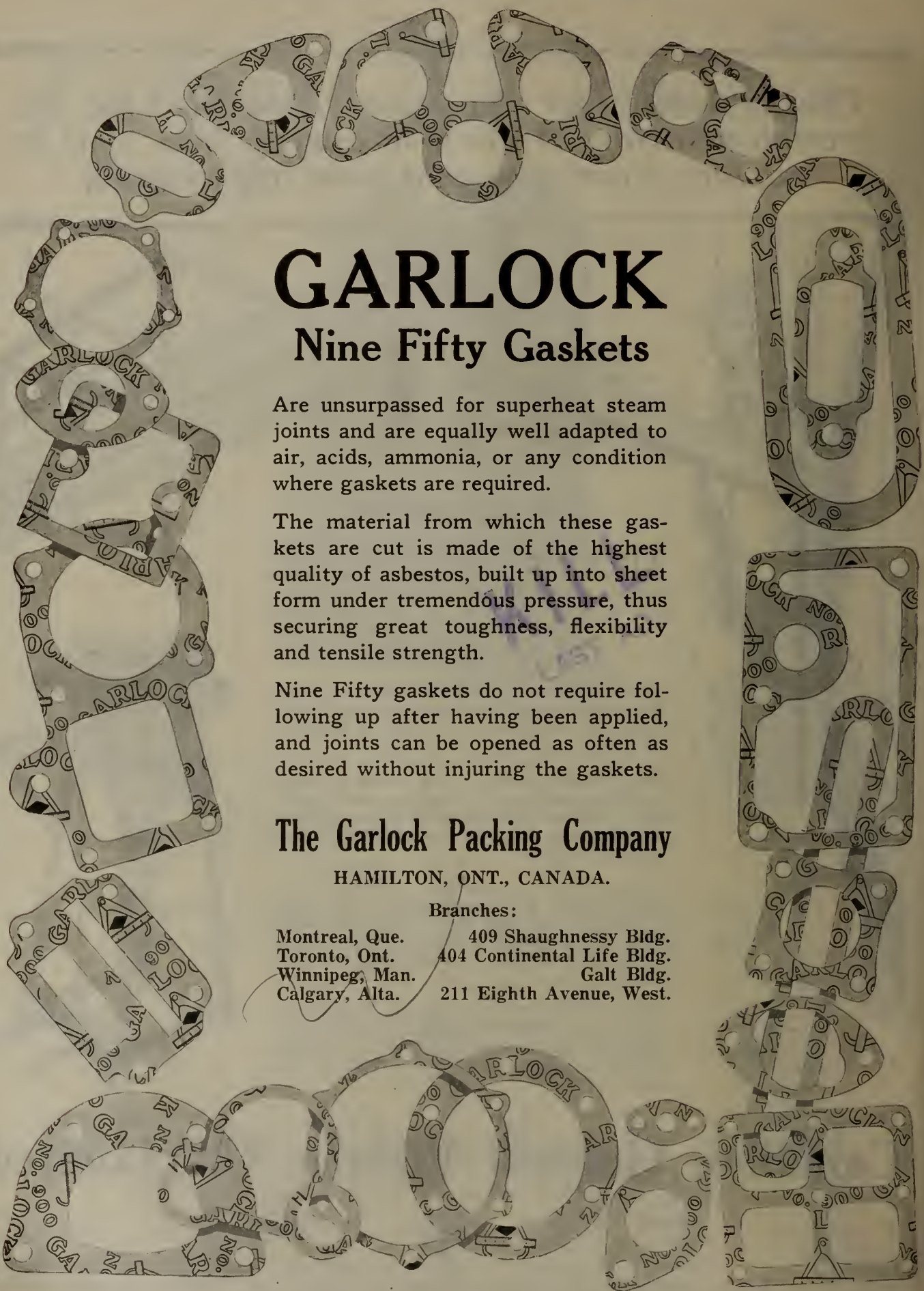
Heating rivets by electricity abolishes many inconveniences, such as transportation or piping of fuel—attention and time necessary for regulating and securing the desired heat—the large loss of rivets due to overheating, scaling, welding together, etc.

If you are interested in modern methods of applying electricity to industrial heating problems, communicate with our Industrial Heating Specialists. Their services are yours for the asking.

# Canadian General Electric Co., Limited

**Head Office** **TORONTO**

Branch Offices: Montreal, Quebec, Sherbrooke, Halifax, Sydney, St. John, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Nelson, Vancouver and Victoria.



# GARLOCK

## Nine Fifty Gaskets

Are unsurpassed for superheat steam joints and are equally well adapted to air, acids, ammonia, or any condition where gaskets are required.

The material from which these gaskets are cut is made of the highest quality of asbestos, built up into sheet form under tremendous pressure, thus securing great toughness, flexibility and tensile strength.

Nine Fifty gaskets do not require following up after having been applied, and joints can be opened as often as desired without injuring the gaskets.

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| Montreal, Que. | 409 Shaughnessy Bldg. |
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| Winnipeg, Man. | Galt Bldg. |
| Calgary, Alta. | 211 Eighth Avenue, West. |

# ECONOMY CAST STEEL DRAFT ARMS

KIL
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## KEEPING CARS IN SERVICE

The force which moves a car passes through the coupler and draft gear to the draft arms. Powerful locomotives and heavy cars have made that force so great that the wooden draft arms of older cars give way.

Over 100,000 such cars have been kept in service by equipping them with Economy Draft Arms.

Being made of cast steel, Economy Arms have ample strength to withstand the forces imposed upon them. They butt against the bolster and pass over it, thus distributing the pulling and pushing strains evenly through the underframe of the car.

AMERICAN STEEL FOUNDRIES
McCORMICK BLDG. CHICAGO
INTERNATIONAL EQUIPMENT CO., Ltd.
Montreal, Que.

SAVE COAL by keeping the heating surfaces of your boilers free from scale. One-sixteenth of an inch of scale increases your coal consumption 10.8%.

SAVE WATER AND COAL by reducing the number of times it is necessary to open blow-off cocks to keep the concentration below the foaming point. You are blowing out one pound of coal each second a one and one-half inch blow-off cock is held open.

SAVE BOILER REPAIRS by reducing the amount of work made necessary by leaks caused by scale in your scale forming water districts, and unnecessary expansion and contraction caused by frequent washing and water changes in your foaming districts.

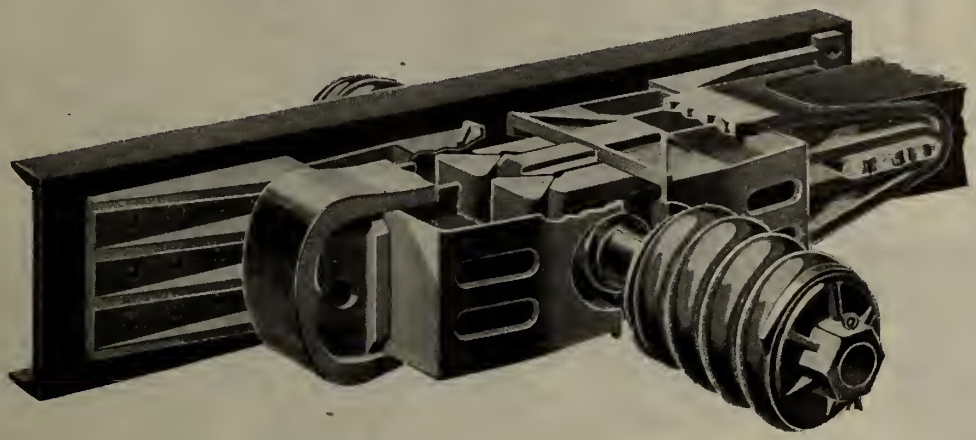
These savings can be effected by adopting the Dearborn System of Water Treatment. The cost is fifty per cent less than any other system now in use.

**Dearborn Chemical Company of Canada, Limited**

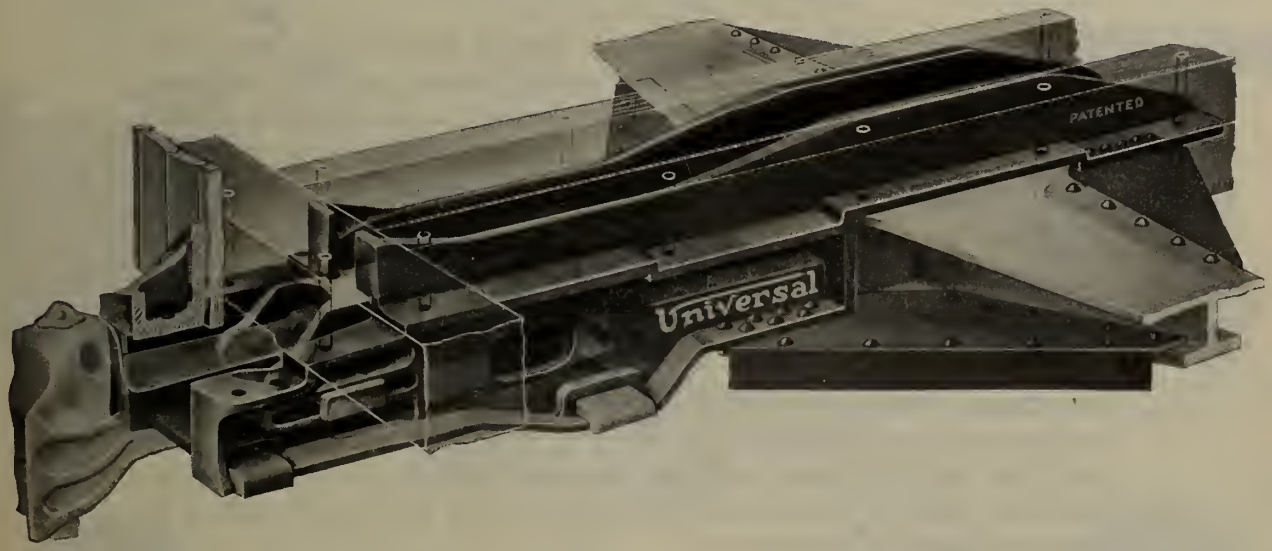
**General Offices and Factory, Toronto**

**Branch Offices: Montreal, 263 James St.; Winnipeg, 413 McIntyre Block**

# CARDWELL FRICTION DRAFT GEAR
## MADE IN CANADA



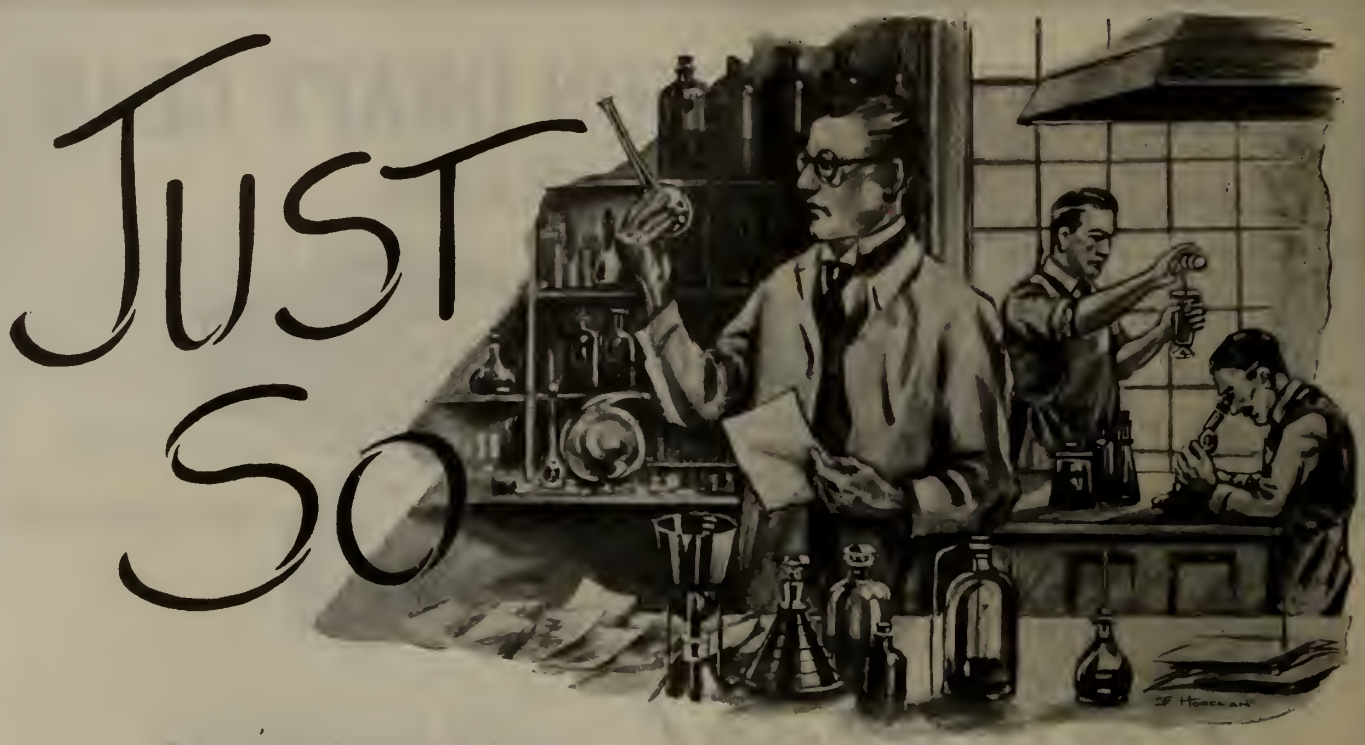
## *Universal* ATTACHMENTS
## MADE IN CANADA




REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
TWIN SPRING DRAFT RIGGING
CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

## MADE IN CANADA

# WEBB. G. KRAUSER
**Transportation Building, MONTREAL**




# Always the Same

Galena Oils *must* be uniform—no "guess work" can enter into their preparation. Compounded scientifically, quality and uniformity are determined by the most careful analytical tests. This is a distinctive feature of Galena products that has gained for them an international reputation.

**Galena Car, Engine and Coach Oils**
**Perfection Valve and Signal Oils**
**Galena Railway Safety and Long Time Burner Oils**

Are known throughout the world as the highest grade railway lubricating and burning oils that are manufactured. Their general use on the great railway systems of the United States, Canada, Europe and South America is the best testimonial of their recognized superiority.

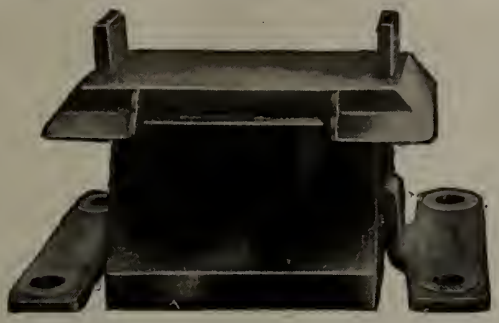
*There is a Galena Oil or Grease for every Steam or Electric Railway use.*

## Galena Signal Oil Company

**Works - - - - - - Toronto, Ont.**

**Stocks at Fort William, Winnipeg, Vancouver.**

**Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg., Montreal.**



Type SP contact rail insulators specially designed for industrial service. The insulator rests on the ties, and is held in place with two iron clamps.

KILL
LAST AD.

Typical Keystone Contact Rail Shoe having a reversible contact member thereby enabling its use for over-contact or under-contact rails

# "KEYSTONE" Contact Rail Material

For light or heavy shipyard or industrial cranes, industrial haulage systems and electric railways. A complete line of insulators, standards and contact rail shoes that will meet practically all conditions.

Being specialists in this line we are also prepared to recommend and supply material of special design to meet any complex conditions you may have.

Write for data sheets.

Type LV contact rail insulator designed for railway and heavy haulage or crane work

Type I contact rail insulators with off-set base for bolting directly to ties

Type X inverted contact rail insulator for use on heavy cranes or railways

## Electric Service Supplies Co.

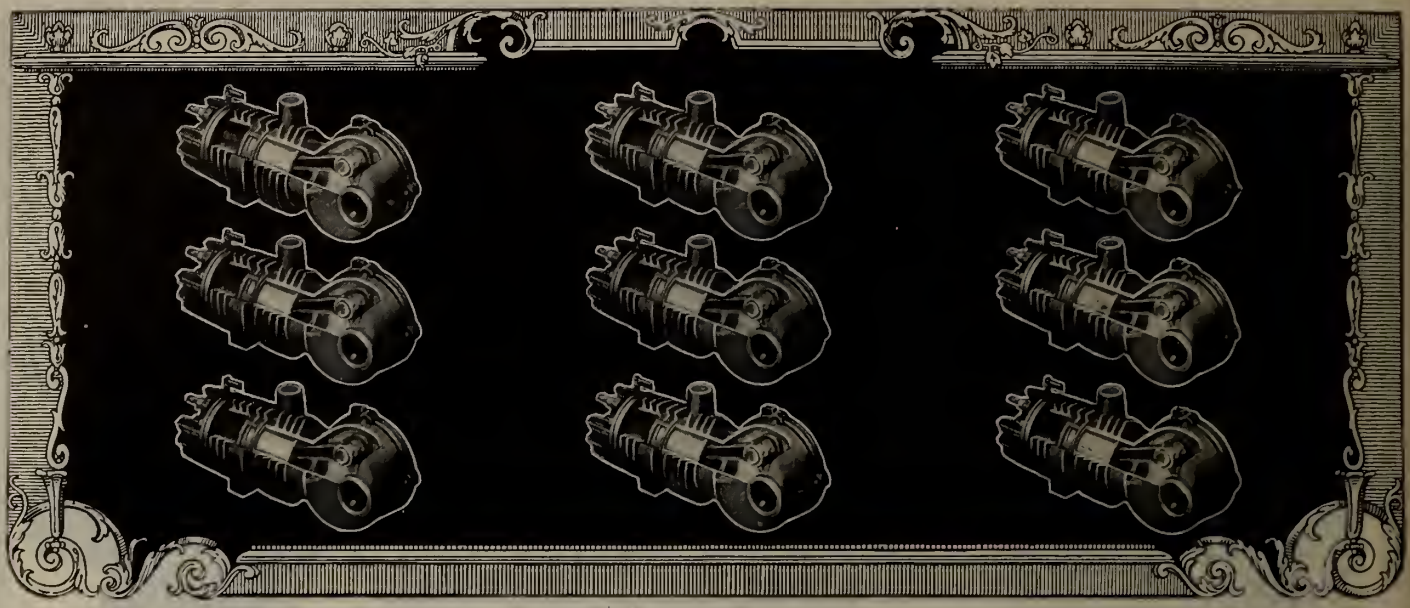
*MANUFACTURERS*

PHILADELPHIA, 17th and Cambria Sts. NEW YORK, 50 Church St. CHICAGO, Monadnock Bldg.

## Lyman Tube & Supply Co., Ltd.

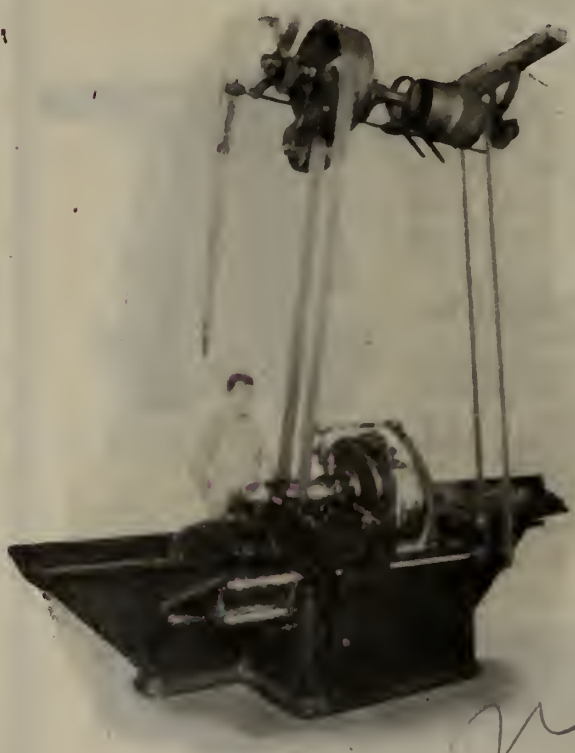
*CANADIAN DISTRIBUTORS*

MONTREAL, Lyman Tube Bldg. WINNIPEG, 703 Confederation Life Bldg. TORONTO, 33 Melinda Street



*Cutaway views of Class "E" Engines.*

# The urge for production is on at the new Mudge factory



*One of the new and latest type machines which assures accurate quantity production.*

¶ Hums now a high-pitched tune of industry in the wheels and shaftings of the new Mudge factory. ¶ The Urge for Production is On—on in fullest force and energy—where here—in recent weeks—millwrights have set for us the "last word" in machinery. ¶ Part now follows finished part to fill our well planned stock rooms—each, of its like pattern, a positive counterpart. ¶ Cylinders are bored, then ground, with mechanical exactness. ¶ Crank shafts, turned with precision, in taper—keyway—fitness. ¶ And all from machines where frequently are micrometered the special tools with which each one is fitted. ¶ So in their workshop—bright as day—airy, comfortable and clean—skilled and experienced workmen swiftly ply their trades. ¶ The Urge for Production is On.

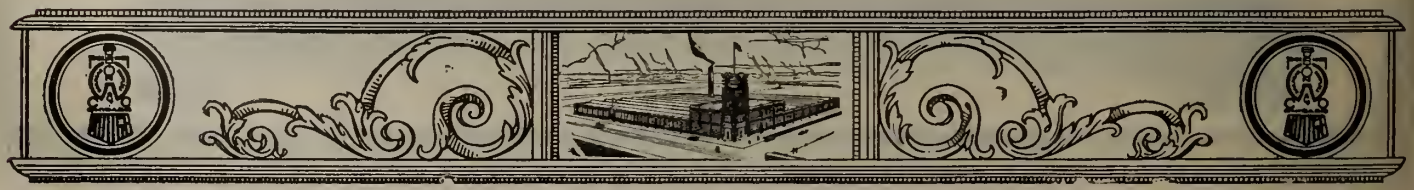
## Mudge & Company

*Manufacturers—Railroad Equipment*

FACTORY
4425 W. 16th Street, Chicago

BRANCH OFFICES
New York, St. Louis, Denver, San Francisco

MAIN OFFICE
Railway Exchange, Chicago



KILL
LAST AD

# TRACKWORK

FOR STEAM AND ELECTRIC · RAILWAYS

designed and constructed to suit all traffic conditions and requirements. Complete layouts and intersections. Switches, mates, frogs, diamonds, crosses, etc. Built-up, hard-centre or solid manganese-steel construction.

*Manufacturers of Balkwill Articulated Cast Manganese Crossings.*

CONSULT US ABOUT YOUR TRACKWORK PROBLEMS AND REQUIREMENTS.

## CANADIAN STEEL FOUNDRIES LIMITED

TRANSPORTATION BUILDING, MONTREAL

"60 Vessels"

Canada's Commerce Carriers

"Total Tonnage 325,000"

# Canadian Government Merchant Marine, Limited

**Now Afloat:**

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|---|---|---|
| "CANADIAN VOYAGEUR" | "CANADIAN TROOPER" | "CANADIAN SEIGNEUR" |
| "CANADIAN PIONEER" | "CANADIAN SAILOR" | "CANADIAN RAIDER" |
| "CANADIAN WARRIOR" | "CANADIAN SPINNER" | "CANADIAN RANCHER" |
| "CANADIAN SETTLER" | "CANADIAN GUNNER" | "CANADIAN NAVIGATOR" |
| "CANADIAN RANGER" | "CANADIAN TRADER" | "CANADIAN TRAPPER" |
| "CANADIAN VOLUNTEER" | "CANADIAN SIGNALLER" | "CANADIAN AVIATOR" |
| "CANADIAN IMPORTER" | "CANADIAN MILLER" | "CANADIAN SOWER" |
| "CANADIAN EXPORTER" | "CANADIAN ADVENTURER" | |

Weekly Freight Service to United Kingdom from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Fortnightly Freight Service to West Indies and Cuba from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to Australia and New Zealand from Vancouver.

**For further information apply to any Canadian Railway Agent or**

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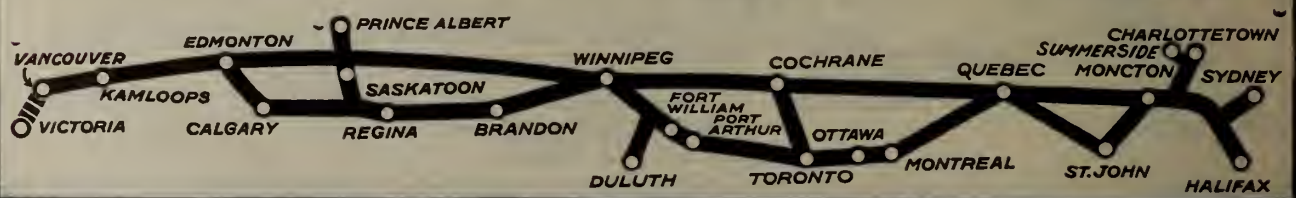
Traffic Manager, Exp. & Imp. Dept.,
Canadian National Rys.,
Toronto, Ont.

GEORGE E. BUNTING,
Ontario Freight Agent,
Room 704 Royal Bank Bldg.,
Toronto, Ont.

W. A. CUNNINGHAM,
Exp. & Imp. Freight Agt.,
230 St. James Street,
Montreal, Que.




# Canadian National Railways

GOODYEAR
MADE IN CANADA

# INDUSTRIAL HOSE

## Tires Lowered the Cost of Hose

The policy which built the Goodyear tire business—and made Goodyears the largest selling tires in the world—has made possible lower costs for hose in industrial plants.

Hose built to fit the *needs* of many different industries.

Fabrics specially selected for hose. Rubber compounds brought to an exact, scientific standard. Construction governed only by the work the hose is to do.

Is it any wonder that Goodyear Industrial Hose is giving longer service; reducing hose costs; preventing delays due to repairing and replacing hose?

In foundry, paper mill, mine, railway, steel plant, and every other industry, Goodyear is setting new standards for hose.

Goodyear Industrial Hose will open up to you new possibilities of economy, increased production and hose satisfaction.

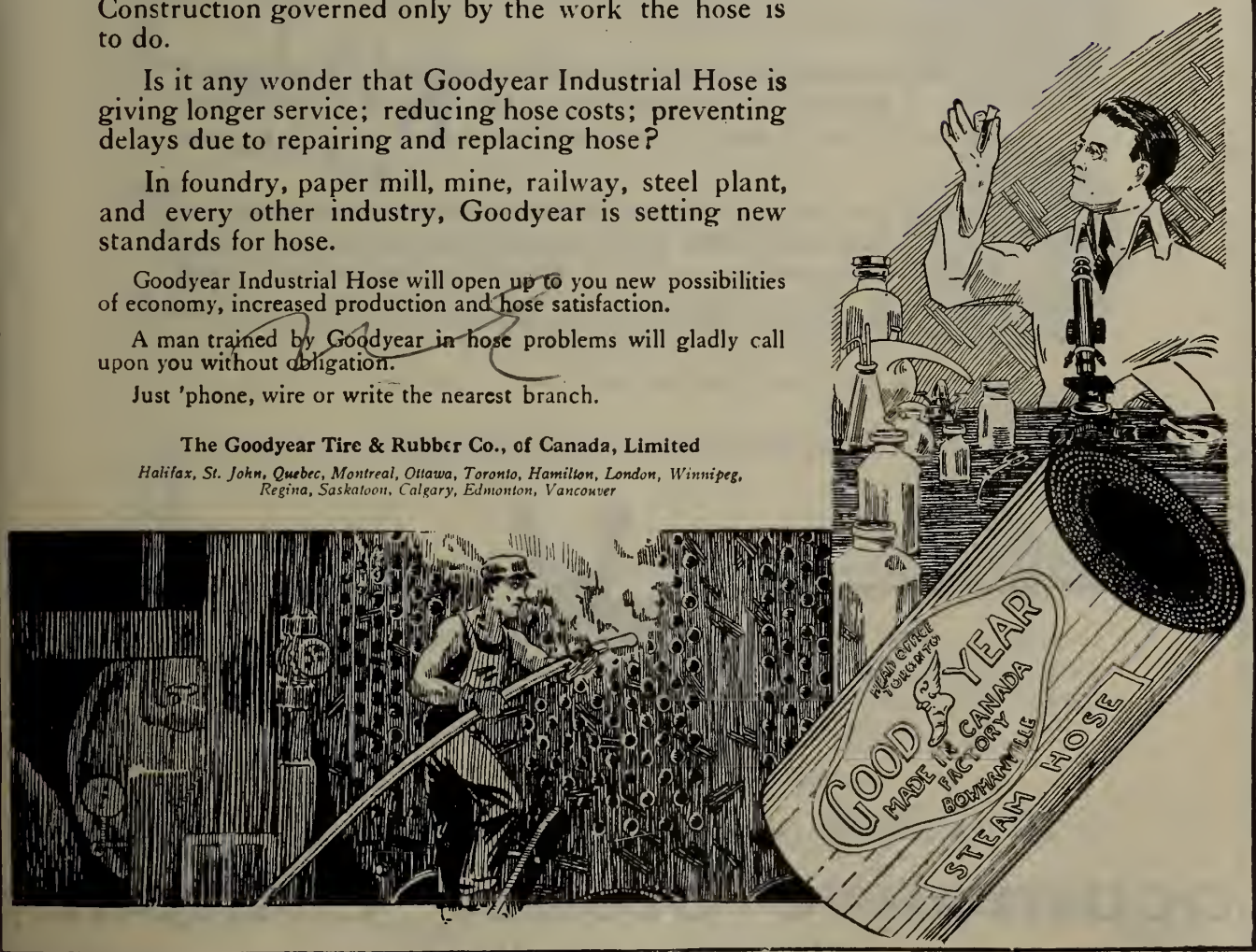
A man trained by Goodyear in hose problems will gladly call upon you without obligation.

Just 'phone, wire or write the nearest branch.

**The Goodyear Tire & Rubber Co., of Canada, Limited**

*Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver*

KILL
LAST AD.



# Duplex Stokers

## Tested for Maximum Efficiency

No *Duplex Stoker* leaves our plant for application on any railroad without being thoroughly and scientifically tested for maximum operating efficiency.

Our complete testing laboratory, illustrated above, must put the stamp of unqualified approval upon the material, workmanship and operation of every machine before it is loaded on the cars.

As every part of the *Duplex Stoker* is built in our shops, or those of our associates, and as the assembled product is given rigid expert examination while in actual operation with live steam before it leaves our plant, we are able to stand back of every *Duplex Stoker* to the limit.

Service of this kind has helped—

*Duplex Stokers Cover the Country*

# Locomotive Stoker Company

**Railway Exchange**
**Chicago, Ill.**

**Main Office and Works**
**Pittsburgh, Pa.**

**50 Church St.**
**New York**

# Here Are Specifications For Your Arc Weld Bonds

Investigate arc weld bonding and you'll find certain fundamentals that are essential. The deeper you go the more necessary these will seem.

1 Weld must be from "Steel to Steel with Steel." That makes it easy for the operator to get a good job.

2 Steel must completely surround the copper terminal to protect the copper and reinforce the finished bond.

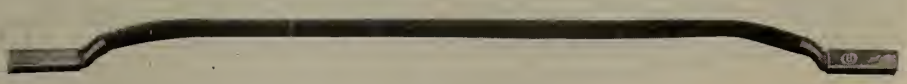
3 The welding angle must be not less than 90° if a thorough union is to be made between bond and rail.

4 Strand must have protecting sleeve where it enters the terminal.

O-B Arc Weld Bonds meet every clause to the letter. Install O-B Bonds with your present machine, or use the O-B Resistance Welder. It has some unusual features for convenient control and for safety.

*Send for literature.*

**The Ohio Brass Co., Mansfield, Ohio**



# A New Canadian Record in Steel Castings

## Cast Steel Half-Spider for Electric Generator

Diameter - - 20 feet
Face - - - 3 feet
Net weight - 64,000 pounds

KILL
LAST AD

## Dominion Foundries & Steel, Limited

**Hamilton - - Ontario**

# Bridges Require Positive Protection

Engineers recognize the wisdom and economy of providing positive protection for bridges against rust action and other agencies which cause rapid deterioration.

Through service records on many of the most prominent bridges of the country covering a period of thirty-five years Superior Graphite Paint has become recognized as the leader among metal protective coatings.

Superior Graphite Paint is made from amorphous, silica-graphite base and pure linseed oil. It will not crack under extremes of temperature or through unusual service conditions. Unusual elasticity permits the paint to expand and contract with the surface on which it is applied.

For maximum service — elimination of frequent repaintings—for positive protection to structural steel and metal—for lowest ultimate cost — specify Superior Graphite Paint. It can be used without the hazard of experiment.

**Dominion Paint Works, Limited**

*Makers of*
*Degraco Paints, Varnishes, Enamels*
WALKERVILLE, CANADA.
Montreal - Toronto - Winnipeg - Quebec
Vancouver - - - - - Sydney

**SUPERIOR GRAPHITE PAINT**
**It Prevents Rust**

# GENERAL RAILWAY SIGNAL COMPANY
## OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track.

A-C. and D-C. Automatic Block Signals for Double Track

## Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signalling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

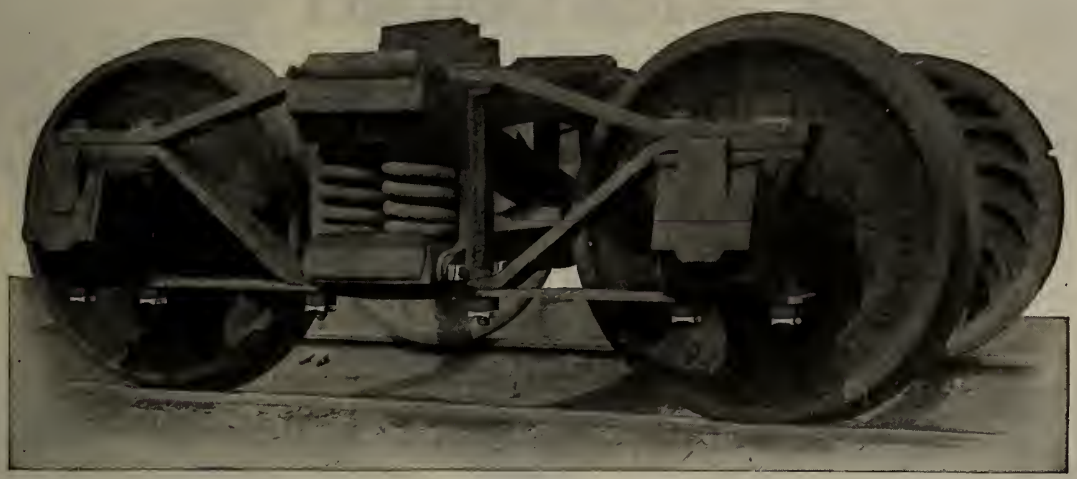
**Head Office and Works**
**LACHINE, QUEBEC**

# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***



Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

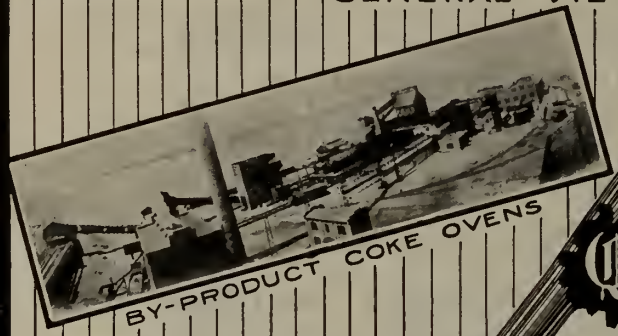
## Boss Lock Nut Company
### of Canada, Limited

*Write for latest catalogue.*

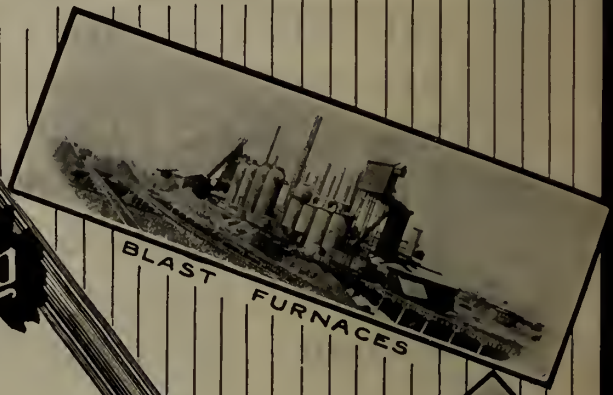
HEAD OFFICE:
**263 St. James St.**
**MONTREAL, Que.**

**McIntyre Block**
**Winnipeg, Man.**

GENERAL VIEW HAMILTON WORKS
HAMILTON



BY-PRODUCT COKE OVENS



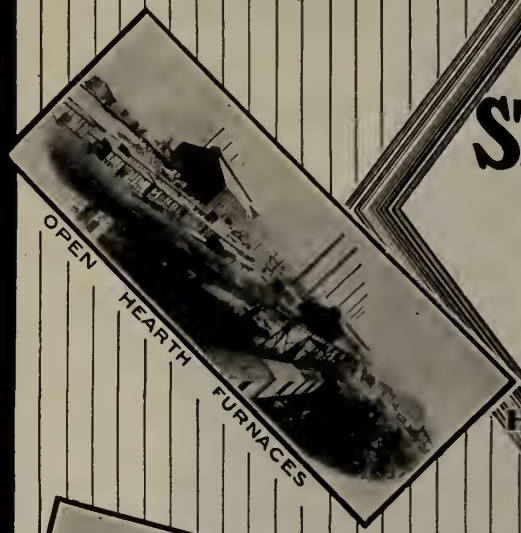
BLAST FURNACES

Quality

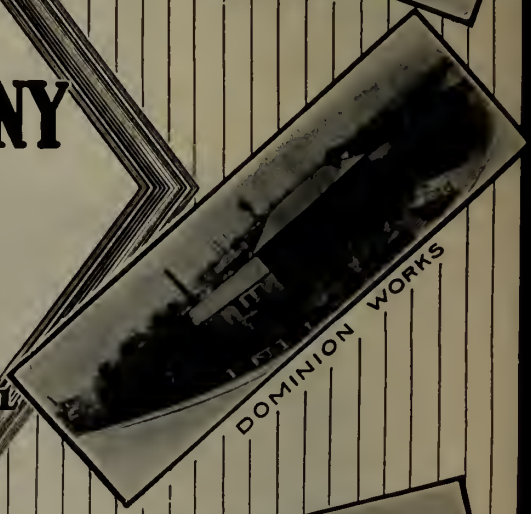
THE
STEEL COMPANY
OF
CANADA
LIMITED

HAMILTON—MONTREAL

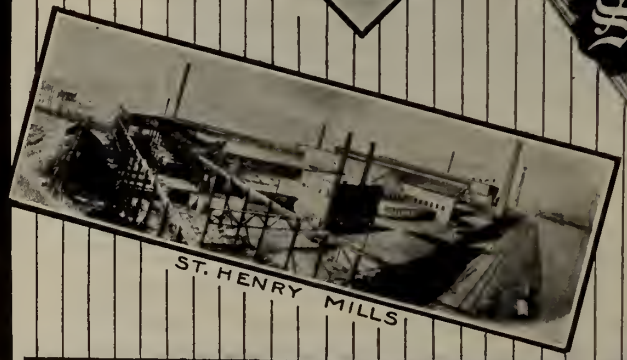
Service



OPEN HEARTH FURNACES



DOMINION WORKS

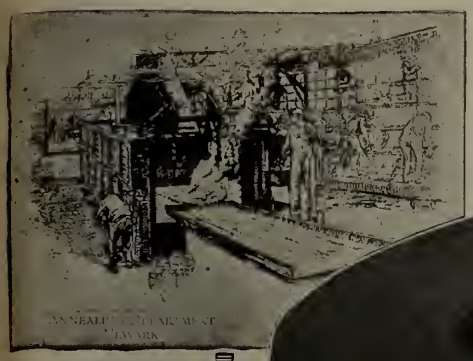


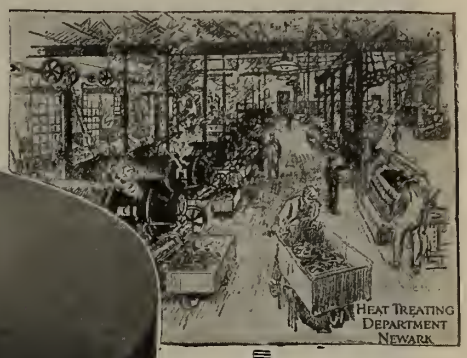
ST. HENRY MILLS

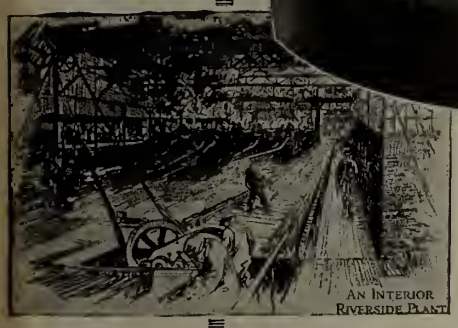
ST. PATRICK MILLS

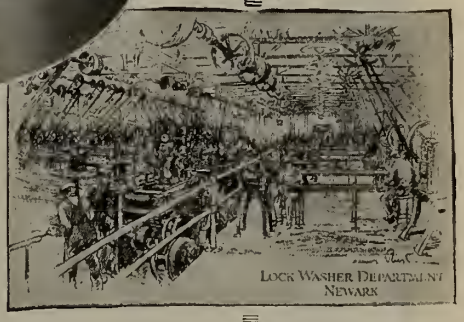
GENERAL VIEW OF NOTRE DAME WORKS
MONTREAL

# *From BILLET to HIPOWER*





Passing through the different stages of manufacture, HIPOWER NUT LOCKS are manufactured by the most modern type equipment, highly skilled labor, in combination with an earnest effort to make every Nut Lock the very best obtainable.

The great reactive pressure plus the resilient properties of Hipowers give them a compensating feature which retards initial looseness of joint and later compensates for the small but continual wear.

*Data cheerfully furnished upon request.*

**Established 1886**

# The National Lock Washer Co.

## Newark, New Jersey, U. S. A.

**New York** **Chicago** **Detroit**

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OREGON
MONTANA
IDAHO
WYOMING
NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXI
N.DAKOTA
S.DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
S.CAROLINA
N.CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
DOMINION OF CANADA
NOVA SCOTIA
49
The map above shows the location of the 49 Foundries in the United States and Canada represented by the Association of Manufacturers of Chilled Car Wheels.
Chicago 3
St Louis 2
Buffalo 4
Pittsburg 2
Cleveland 2
Amherst N.S.
Montreal
Mich. City Ind.
Louisville.
Mt. Vernon Ill.
Ft Wayne. Ind.
Birmingham
Atlanta.
Savannah
Boston
Detroit
St. Paul.
Kansas City Kan
Denver
Tacoma
Los Angeles
Rochester N.Y.
Sayre. Pa.
Lime Rock. Conn.
Albany.
Toronto.
New Glasgow N.S.
Madison. Ill
Berwick Pa
Huntingdon. W.Va.
Wilmington. Del.
Houston Tex
Hannibal Mo
Reading Pa
Baltimore
Richmond Va.
Ft William. Ont.
St. Thomas "
Hamilton "
Ramapo. N.Y.
Marshall. Tex
Capacity
20,000
CHILLED
IRON WHEELS
Per Day
25 Million in Service
Association of Manufacturers
of Chilled Car Wheels
1229 McCormick Bldg. Chicago.

# CANADIAN VICKERS, MONTREAL LIMITED

## Shipbuilders, Engineers, Boilermakers

S. S. CANADIAN PIONEER
for Canadian Government Merchant Marine

## Makers Under License Best British Designs

WINCHES, WINDLASSES, ASH HOISTS,
STEERING GEARS, TELEMOTORS

*Immediate Deliveries from Stock*

*Cables:*
VICKERS, MONTREAL

# Joliet Railway Supply Company

NORTHWESTERN MALLEABLE IRON CO., Props.

## Huntoon "ECONOMY" Brake Beam

*With Reversible Strut*

No nuts to get loose and fall off.
No threads to strip or rust off.
No danger of tension member becoming cut by wheel flange.
No pockets in heads or beam to collect or hold moisture.
No key slot in strut to cause breakages.
Heads are one pattern for each beam, which with the **Reversible** Strut means—

Only **one Beam** to carry in stock.
Only **one Strut** to carry in stock.
Only **one Head** to carry in stock.

The great popularity and wide success of the Huntoon **"Economy"** Beam has been due to its durability, and the above features, which make it a **Universal** beam.

Also manufacturers of—

Truss Rod Brake Beams.
The "Huntoon" Truck Bolster.
"Pilcher" Trussed Steel Side Frame.
"Joliet" Journal Boxes.
"Peerless," "Perry" and "Burry" Side Bearings.

GENERAL OFFICES:
Railway Exchange Bldg., Chicago

WORKS:
40th St. and Princeton Ave., Chicago

CANADIAN REPRESENTATIVES:
**Moore, Cameron & Hill, Limited**
284 Beaver Hall Hill, Montreal
431 McIntyre Block, Winnipeg

# Nothing Succeeds Like Success

We have now built over eighty Locomotive Coaling Stations and the Map below shows how they are spread all over Canada. There are few Locomotive Coaling Stations in Canada that have not a "W & W" nameplate on them, and when you understand that we have twenty years experience in the construction of Coaling Stations it will be obvious why we obtain so many repeat orders. With our experience we understand just what kind of machinery is required for this severe class of work, and can practically fit up any size or capacity Coaling Station from our stock.

KILL
LAST AD.

Complete erection from foundations up and machinery manufactured and installed. We have an Engineering Department which is at all times ready to co-operate with you. Do you wish Designs, Details and Estimates, we will be only too glad to furnish these on request.

# Williams & Wilson, Limited

## 84 Inspector Street, MONTREAL

"Made in Canada"

# WIRE ROPE

Of Every Kind and for Every Purpose—
Accessories, too

**The DOMINION WIRE ROPE Co., Limited**

Head Office: MONTREAL, Branches: Toronto, Winnipeg

# The Best Ballast Car Ever Built

**Canadian National Railways Standard Ballast Car**

For Ballasting Center Dump

For Ballasting Side Dump

For Coal or General Service

Built of Materials Obtained in Canada

Built to any size or Capacity

*Write for Booklet No. 19 for further information*

—DESIGNED, PATENTED AND BUILT IN CANADA—

## The HART-OTIS CAR CO., Limited, MONTREAL

# "Industrial Works" Cranes

Increase Profits by Reducing Handling Costs

## "Ransome" Mixers

## "Holt" Caterpillars

**Railway and Contractors' Supplies**

Branch:
108 Mail Building
TORONTO

## F·H·Hopkins & Co

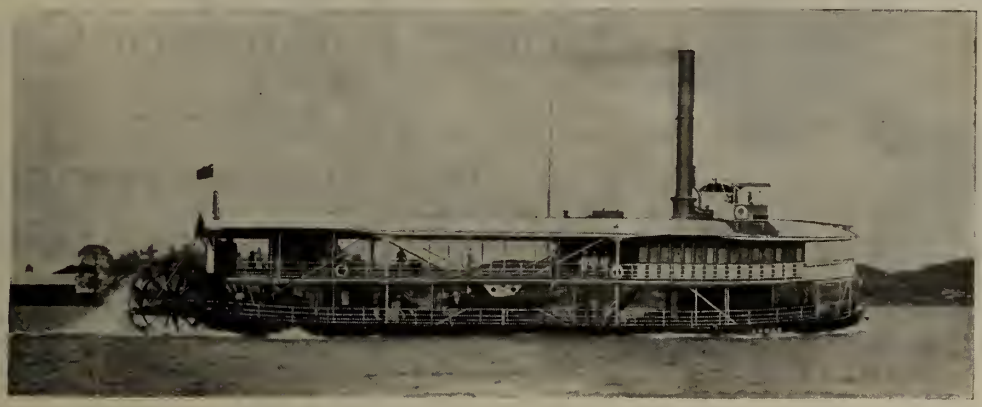
Head Office:
MONTREAL

# YARROWS LTD.

## VICTORIA, B.C., CANADA

Associated with YARROW & CO. LTD., Glasgow

SHIPBUILDERS SHIP REPAIRERS ENGINEERS



Builders of fast shallow draft vessels propelled by sternwheel or Yarrow Patent system of propellers working in tunnels. Vessels shipped in packing cases ready for re-erection.

ADDRESS FOR LETTERS
P.O. BOX, No. 1595,

| Marine Railway, 315 ft. long, 3000 tons D.W. Capacity. | Esquimalt Dry Dock, 480 ft. x 65 ft. |
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"YARROWS, VICTORIA"

After five years general service and the most exacting tests, the Pinless Lid Journal Box is offered in Canadian Service.

## McCord & Company

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# LET US MAKE IT!

That Special Valve or Boiler Fitting or Casting

Our line includes everything in the way of Marine Boiler and Engine Supplies

KILL LAST AD.

## T. McAVITY & SONS, LIMITED

ST. JOHN, N. B., Canada

MONTREAL TORONTO WINNIPEG VANCOUVER

Let "Van Dorn" GEARING Shoulder the Burden

"'Van Dorn' Geared" means up-to-the minute in dependability and long-wearing qualities.

"Van Dorn" gears and pinions have the recommendation of thousands of the largest and most representative gear users.

——And the service they render has justified their choice.

**Why not let us apply our expert gear knowledge to the filling of your requirements? Write**

## The C. E. A. CARR Co.

56 Imperial Bank Bldg., Queen and Yonge Sts.

TORONTO

UNDERFRAME DAMAGE
IS MORE OFTEN CAUSED BY INADEQUATE
ATTACHMENTS THAN BY DRAFT GEARS
OF INSUFFICIENT CAPACITY

# FARLOW DRAFT ATTACHMENTS

Are themselves adequate for service shocks in excess of draft gear capacity, and provide for their correct distribution to the underframe.

**The Perfect Harness**

## The T. H. Symington Company

**New York** **Works at Rochester** **Chicago**

## Port Arthur Shipbuilding Co., Limited

**Port Arthur, Canada**

. Canadian Adventurer, launched at Port Arthur, by H.R.H. Prince of Wales, Sept. 8, 1919.

*Designers and Builders of*

Steel Ships
Boilers
Engines
Etc.

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

# FOR SHIPBUILDERS

Manganese Bronze Cradle
Castings for Q. F. 18-pr. Gun Carriage

**Castings**
of Every
Description
in
**Brass**
and
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Rough or
Machined
Complete
to Specification

## Ottawa Car Manufacturing Co., Ltd.

*W. M. ARNOLD, General Manager*

**OTTAWA - - ONTARIO**

# Norton Jacks

For all Classes of Service

## 10 to 100 Tons Capacity

In Stock for Immediate Shipment.

*Send for Illustrated Catalogue No. 30*

## A. O. Norton, Limited

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Stock Carried by Canadian Agents: **MUSSENS LIMITED**
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# For The Place That's Hard To Get At

**Imperial Tie Tampers will tamp around and under switches, frogs, crossovers, water pans and other places impossible to reach with picks or bars. This is due to the fact that the tamping bar can be turned parallel to the rail and inserted through any space which the tamping face will pass, then turned at right angles and parallel to the cross tie and tamped firmly to the centre of the tie, where it is impossible to strike a blow with a bar or pick.**

**They will not splinter the tie nor shatter the ballast as a hand bar or pick oftens does, and prevent the formation of water pockets and the consequent pumping action of the tie.**

***Ask for the latest Tamper bulletins***

**Two men with Imperials will do as much work as eight men by hand, and do it so well that the track will stand up twice as long as that done by the old method.**

## Canadian Ingersoll-Rand Company, Limited

Sydney Sherbrooke Montreal Toronto Cobalt
Winnipeg Nelson Vancouver

# Canadian Porcelain Co.

## Limited

## Hamilton Canada

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Porcelain Insulators and Pole Line Hardware

# THE JOHN INGLIS COMPANY, LIMITED

## ENGINEERS AND BOILER MAKERS

# ENGINES, BOILERS

AND

# TANKS of all kinds

*Write us for prices and specifications.*

Plant of the John Inglis Co. Limited

Penstocks, Heavy Plate Work, and Special Machinery.

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Representatives in Eastern Canada,—JAS. W. PYKE & CO., Ltd., 232 St. James Street, MONTREAL.
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**A Great Many Large Plants Are Using**

# COMMERCIAL ACETYLENE

**On Small Work**

Repairing a small cast iron bracket at a large shipbuilding plant. Our tanks are convenient, safe and guaranteed to hold quantity and quality gas.

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SAN FRANCISCO, CALIF.
MOBERLY, MO.
W. BERKELEY, CALIF.

**Commercial Acetylene Supply Company, Inc.**

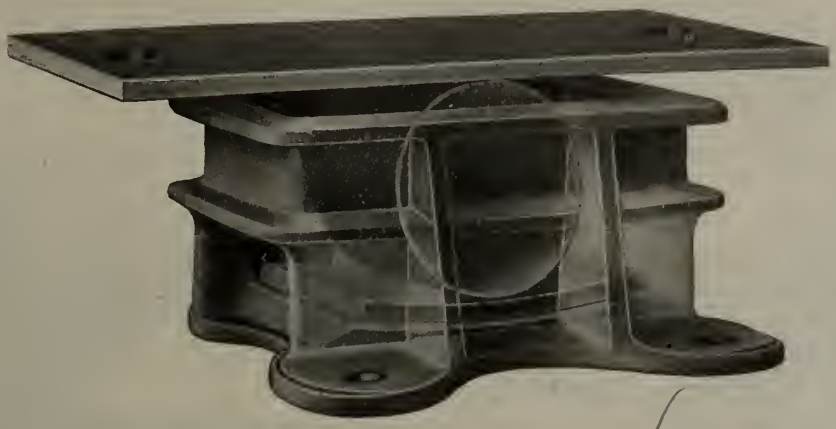
18 TORONTO STREET TORONTO

# Stucki Side Bearings

Simple construction

—

Large bearing surfaces



Frictionless under all service conditions

## The Holden Company, Limited

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Branches—TORONTO WINNIPEG VANCOUVER

# CRANES

Electric and Hand Power Direct or Alternating Current Standard Bridge Cranes.

Revolving Hammer Head and Luffing Boom Types for Shipbuilding and Unloading Wharf.

Also Gantry and Special Types.
(Capacity 2 Tons to 200 Tons)

Coal and Ore Handling Equipments.

## DOMINION BRIDGE COMPANY
LIMITED

*Head Office:* MONTREAL *Branches:* Ottawa, Toronto, Winnipeg

# Dominion Shipbuilding Co., Ltd.

Launching of LE QUESNOY, 4300-ton Steel Freighter.

**Office, Docks and Yards, Harbor Front, Bathurst St.**

**Toronto - - Canada**

# The Star Brass Works

*Largest Exclusive Trolley Wheel Makers in the World.*

**Kalamazoo Michigan**

**Canadian Representatives:**

**Northern Electric Company, Limited**

Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

**Dawson & Co., Limited, 148 McGill St., Montreal**
**352 Donald St., Winnipeg**

# For Railroad and Steamship Upholstery

**The answer to the question, "What fabric is universally used for upholstery?"**

CHASE

GOAT BRAND — TRADE MARK — MADE BY SANFORD MILLS

MOHAIR PLUSH

**Mohair is the logical choice of all upholstery fabrics**

Why? **First—Durability. Second—Fast color. Third—Rich appearance. Fourth—Sanitary.**

How long does it last? **According to quality, eight to twenty-five years.**

What evidence that it is sanitary? **Careful scientific tests through many months by some of America's leading railroads, hotels and homes. Particulars gladly furnished on request.**

What is Mohair? **The lustrous fleece of the Angora goat.**

How strong is Mohair compared with wool? **According to Government tests more than two and one-half times.**

**For more than thirty years CHASE Goat Brand Plush has been the standard with America's largest railroads and steamship lines.**

**Recently there was exhibited a seat covering in excellent condition after a constant service of twenty-four years. It was upholstered with CHASE Goat Brand Plush.**

## L. C. CHASE & CO., Boston, New York, Detroit, Chicago, San Francisco

*Leaders in Manufacturing since 1847*

A LINE OF P H WROUGHT TUBULAR STEEL POLES ON THE BLOOR STREET VIADUCT—TORONTO, CAN.

MADE IN CANADA.

P H

# Tubular Poles

NEAT, UNIFORM AND ORNAMENTAL
in appearance, combined with
GREAT DURABILITY, STIFFNESS AND STRENGTH
make them ideal for
ELECTRIC LIGHT AND POWER
TELEPHONE, TELEGRAPH
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and also for
FLAG POLES,
all sizes and weights.

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# Reid Newfoundland Co.

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Railway and Steamship Lines
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WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

SHEER LEGS AND WHARFAGE AT DEEP WATER PIER

SHOPS EQUIPPED WITH MODERN MACHINERY

PNEUMATIC TOOLS, ELECTRIC AND ACETYLENE WELDING PLANT IN OPERATION

VESSELS PAINTED WITH ANTI-FOULING PAINTS

***Rates on Application***

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**FRICTION DRAFT GEAR**

**CLASS A-18-S**

**THE PERFECT DRAFT GEAR**

**MINER**
**BALANCED SIDE BEARING**

**SAVES RAILS WHEELS AND COAL**

# CANUCK SUPPLY CO., LTD.
**MONTREAL**

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**CHICAGO**

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Accuracy and Quality
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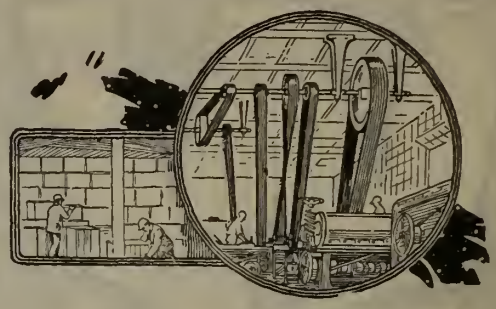

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# Canadian Railway and Marine World

April, 1920

## Valve Motion.

By F. Williams, Mechanical Designer, Canadian National Railways, Moncton, N.B.

The duties which a locomotive valve gear has to perform are exacting in the extreme, as it has to control the distribution of steam to the cylinders with almost perfect precision through a wide range of cut-offs in forward and reverse direction. There is no apparatus on a locomotive upon which the economical working depends so largely, and when we consider that at diameter-speed the movement of the distribution valve is reversed 672 times a minute, we can appreciate with what care the design must be undertaken.

From the point of view of economical steam distribution, valve motion design has today reached a point where it cannot be greatly improved upon, and the chief attention of the designer has for the last few years been taken up with questions of accessibility and low maintenance cost, his aim being to apply a gear which would run and keep square from shopping to shopping with the minimum of attention. Considered from the stand-point of steam distribution alone, I doubt if a well designed and properly set Stephenson gear has ever been excelled, but owing to inaccessibility, high maintenance cost and its great liability to get out of square due to the springing of parts and development of lost motion, the Stephenson gear has become a back number, and I shall only refer to it for purposes of comparison.

For several years past practically every locomotive built in this country has been equipped with an outside gear, the vast majority with Walschaert's, and to this gear I shall devote most attention. Of all locomotive valve gears made, Walschaert's is the simplest to understand, to design and to set, and when this gear has been well designed and correctly set, it will keep square for an indefinite length of time. The simplicity of the gear lies in the fact that the valve receives its motion from two sources, first from the crosshead through the combination lever, and second from the eccentric through the link, and each of these sources of motion can be dealt with separately without considering the influence of the other, both in designing and setting.

The motion derived from the combination lever is equal to the steam lap plus the lead and it attains its maximum travel when the engine is on the dead centers, it is not affected in any way by the reverse gear but remains the same in all position of the lever. The motion derived from the link is simply a symmetrical motion front and back of the center line, and is increased or decreased according to the distance of the link block from the center of the link. When the link block is exactly in the center of the link, there is, of course, no motion from this source and as the block gets by the center the motion is reversed. When the engine is on the front or back dead center the link assumes such a position that the reverse lever can be moved backward and forward through the entire travel without imparting any motion to the valve, and the distance the valve is off center is entirely due to the position of the combination lever which is at its maximum travel at these points.

The proportioning of the length of the combination lever is a simple matter when we have decided on the steam lap and lead required. The length of the combination lever from the radium bar connection to the union link connection must bear the same proportion of its length from the radius bar connection to the valve stem crosshead connection as does half the stroke of the piston to the lap plus the lead plus 1/64 in. The 1/64 in. is added to the lap plus the lead to take care of lost motion. Care must be taken that the length of the combination lever adopted will bring the lower end of the lever to the correct level to connect up with the union link, especially if the union link is connected directly to the wrist pin, which is the practice generally adopted unless the Ripken Kingan main rod arm is used.

I have seen various rules as to the length of the radius bar and eccentric rod, but they are for the most part worthless, as our problem is to apply a gear to a locomotive; we are not permitted to design a valve gear and then build an engine around it. The best rule we can adopt therefore is to make both the radius bar and the eccentric rod as long as circumstances will permit and with ordinary wheel bases this will invariably give satisfactory results. The radius of the link slot center line is of course determined by the length of the radius bar, and the preferred location of the link support bearings is such that the horizontal center line is on a level with the radius bar connection to the combination lever. This location may be varied within reasonable limits, without affect the valve events to any appreciable extent; for instance, on a locomotive with a very large cylinder the steam chest center line and the cylinder center line are of necessity quite a distance apart, and in this case the link support is sometimes lowered an inch or two, to bring the link tail nearer to the horizontal center line of the axle. The angle through which the link rocks should not exceed 45°, and if it can be kept lower so much the better.

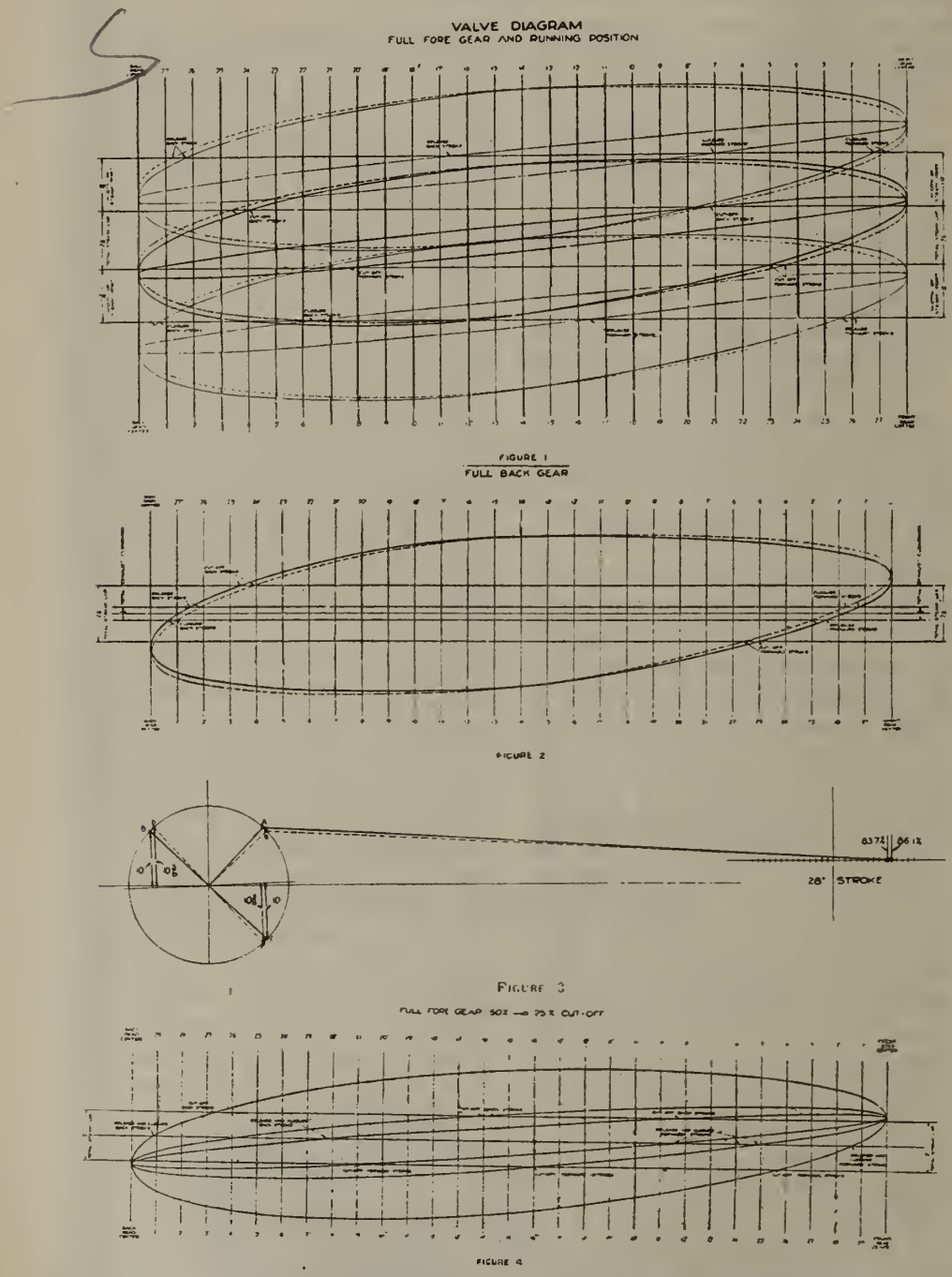
The eccentric rod connection to the link tail should be kept within 3 in. or 4 in. of the horizontal center line of the axle, in order to keep the angularity of the eccentric rod within limits, and owing to this angularity of the rod, it will be found necessary to offset the tail connection of the link in order to give it the same angular travel on either side of the central position. I have heard men with a good deal of experience state that an approximately correct offset is all that is required, but as it is just as easy to make this offset correct as otherwise I always prefer to make it dead right. The eccentric crank must be set so that it brings the link dead on its central position when the engine is on either front or back dead center, and the throw of the eccentric pin must be such that, acting in combination with the radius of the link tail, it will give the required angular travel to the link. The reverse shaft location, length of arm, and swing link are very important considerations, and unless great care is exercised in the arrangement of these details the efficiency of the motion may be considerably reduced. The arc which the reverse shaft arm describes should be so arranged as to reduce the link block slip to a minimum in all positions of the reverse lever, special attention being paid to the running position in fore gear. It is impossible to avoid link block slip altogether, but it can be kept pretty low, and if this is not carefully looked after the effect will be seen in the valve events and also in the wear on the link and link block. The steam chest center line should be outside the cylinder center line far enough to permit of bringing the whole motion into practically a straight line, thus eliminating the necessity for rockers, and doing away with the twisting effect and lost motion which the use of rockers involves.

All road locomotives equipped with Walschaert gear should be so arranged that the link bottom is in the bottom half of the link for fore gear, the eccentric of course following the crank pin. The advantages of this arrangement are that the wear on the link support bearings is diminished and the link block slip in running position may be kept very small, as the swing link describes an arc which is very similar to the arc struck by a point in the bottom of the link, the concave side of both these arcs being uppermost. It is very important that the design of this gear should be as good as it is possible to make it, for, if it is faulty, it is impossible for the valve setter to correct its faults. With a badly designed Stephenson gear, a good valve setter could often get very fair results in running position, by sacrificing the other positions of the reverse gear, but with a Walschaert gear this is out of the question, as it is squared on the dead centers, and, if the design is good, all the valve events naturally come within very close limits of being square, but if they do not there is practically nothing the valve setter can do to correct them.

It must be borne in mind that the chief aim of the designer is to obtain as nearly as possible a perfect steam distribution, but the most important consideration with the valve setter is to get four level beats up the stack. A perfect steam distribution will of course give a perfect exhaust, but a perfect sounding exhaust does not necessarily mean a perfect steam distribution, by any means. The steaming properties of the boiler, and the fuel economy, depend very greatly on the evenness of the exhaust, and if the exhaust is ragged, the vacuum in the smokebox is unsteady and the fire is soon pulled in holes, resulting in a

great waste of fuel. The designer therefore endeavors to obtain a perfect exhaust, by giving as nearly as possible a perfect steam distribution; the valve setter has to get an even exhaust at all costs. The normal setting for a Walschaert gear is square on dead centers, with a constant lead in all positions of the reverse lever, but there is another setting which is sometimes resorted to, and this is to give no lead at all, or a very slight lead in full fore gear and an increasing lead as the lever is notched up toward mid-gear. This variable lead is a feature which is natural to the Stephenson gear, with open rods, and this gear was commonly set with no lead in both fore and back full gear, but in notching up from either of these positions an increasing lead was obtained. It is not a natural feature with the Walschaert gear, however, and if we produce it in the fore gear we do so at the expense of the back gear.

A prevalent idea seems to be that it is detrimental to have any lead at all in full gear, as it hinders the starting of the engine. Some text books also tell us that the object of lead is to cushion the piston at the end of its stroke. If we study the question closely, we will agree, I think, that both of these arguments are incorrect. Lead cannot hinder starting, unless the admission takes place considerably before the piston completes its stroke, and as a matter of fact, the pre-admission in full gear is so small that it can hardly be measured; as for lead cushioning the piston, a glance at a few indicator cards will show us quite plainly that compression and not lead has to take care of this. The main object of lead is to give an unrestricted supply of steam to the cylinder, when the piston begins its stroke, and with the pre-admission down to about 1/64 in. it is impossible that the steam admitted to the cylinder can exert any appreciable turning moment on the axle until the crank pin has gone over the center. Although the lead is constant, on a normally set Walschaert gear, the pre-admission increases as the lever is notched up, so that if the cushioning effect of the live steam is really required, we have this effect increasing as the lever is pulled toward mid-gear. I do not pretend to say that the pre-admission increases to the same extent as on a Stephenson gear, but I think it is generally admitted that the pre-admission is high on this gear in running position. The real object of setting the Stephenson gear with no lead, or 1/16 in. or so blind, in full gear, was, not to overcome the detrimental effect of lead in full gear, as this is non-existent, but to bring the closure point to such a position that the compression would not be excessive when running at high speeds, so that if this variable lead setting with Walschaert gear is justified, it is through its influence on the other valve events, such as cut-off, release, closure, etc., as the lead itself has no influence one way or the other in starting.




We will now take a look at the valve diagram shown in fig. 1, plotted for one of our large passenger locomotives. This engine has 24 x 28 in. cylinder, a 14 in. valve, 6 in. valve travel, ¼ in. constant lead, 1—1/16 in. steam lap and ¼ in. exhaust clearance. The broader ellipse in the center shows the valve travel, in relation to the piston travel, in full fore gear, and the narrow ellipse inside it shows the same thing with the lever notched up to 25% cut-off. The distance from the steam edge to the exhaust edge on the valve over the packing rings is 2¾ in., therefore the similar ellipses which are plotted 2¾ in. above and below the center ellipse, with lighter lines, must represent the movement of the exhaust edges of the valve. The three ellipses shown in dotted lines represent the movement of the valve set with no lead in full fore gear. Picking out the valve events we find that with the ¼ in. lead setting we have the cut-off at 23 in. and 23⅞ in., the release at 25 9/16 in. and 26¼ in. and the closure at 26 13/16 in. and 27¼ in. Set with no lead, however, we have the cut-off at 23 9/16 in. and 24⅝ in., the release at 26⅛ in. and 26¾ in., and the closure at 27¼ in. and 27⅞ in., so that the net result of adopting this latter setting is to delay the cut-off from 83.7% to 86.1%, the release from 92.6% to 94.5% and the closure from 96.6% to 98%, an improvement in the starting position of 2.4, 1.9 and 1.4% of the stroke respectively.

The valve diagram shown in fig. 2 is plotted for the same locomotive in full back gear, the ellipse shown in dotted lines representing the valve movement with the variable lead setting. In this case I have two lines ¼ in. above and below the center line, representing the amount of the exhaust clearance; these lines will determine our release and closure points in the same way that the outside edges of the steam ports did in fig. 1, and will simplify the diagram. A glance at this diagram will show us that the cut-off, release and closure points, are advanced in backgear, by just about the same amount as they were delayed in fore gear, so that whatever we have gained in the foregoing position we have done so at the expense of the back. In the short cut-offs there is so little difference in these two settings that I have only plotted one, which I mentioned before when alluding to fig. 1.

Before we can realize exactly how much or little advantage is to be gained by this variable lead setting in full force

gear, we shall have to analyze the situation a little further and go into the question of starting tractive effort. We all know that the worst starting position for a locomotive is when she is standing with one side just past the cut-off point. In this case the whole starting effort has to come from the other cylinder where the crank has not yet reached the point of maximum leverage. Fig. 3 shows the position of the crank pin of this locomotive at the point of cut-off, the full line indicating position with normal setting and the dotted line with the variable lead setting. It is evident that, when the locomotive is standing in this position, we shall get the minimum starting effort, as all the turning moment has to come from the other crank, which will be either at B b or C c, according to whether A a represents the right hand crank or the left. The effective length of the crank, which is doing the work, is 10 in. for nominal setting and 10⅝ in. for the variable lead setting, or a difference in favor of the variable lead of 6¼%, so that we may say that the minimum starting effort of this locomotive is increased 6¼% by this setting. I do not wish to convey the impression that this locomotive can be improved 6¼% by this means, as the maximum tractive effort is not affected in any way, and the only advantages are that the maximum tractive effort is available through a very slightly wider range of positions, and in the very worst starting position the tractive effort is increased by 6¼%. As soon as the locomotive has turned a wheel the advantage almost entirely disappears, the slight delay in the release and closure points may result in a slight improvement during the early stages of acceleration, but on notching up the two settings are practically identical.

Fig. 4 shows a diagram plotted for one of our mikado locomotives. This locomotive has a 27 x 30 in. cylinder, 14 in. valve, 6½ in. valve travel, ⅛ in. constant lead, 1 in. steam lap and no exhaust clearance. The chief difference from the passenger locomotive settings are reduced lead, reduced steam lap, and elimination of the exhaust clearance.

We have already seen that reducing the lead will give us a later cut-off in starting position, and have decided, I think, that this is an advantage when starting the load. Reducing the steam lap has the effect of lessening the period of expansion, but by reducing the exhaust clearance the period of expansion is lengthened and thus the ill effect of cutting down the steam lap is neutralized. The reduction or total elimination of the exhaust clearance lengthens the period of expansion by delaying the release, and this in itself is a good feature, but it has also the effect of advancing the closure point and the question naturally arises as to why it should be permissible to eliminate exhaust clearance and thus advance the closure point on freight locomotives and not on passenger locomotives. The first reason is that in running position the passenger locomotive is generally notched up to a much earlier cut off than the freight locomotive—about 25% of the stroke instead of 50%—and the second the piston speed of the passenger locomotive averages much higher than that of the freight locomotive.

The passenger locomotive, under consideration, has a piston speed of 1,136 ft. a minute when making 50 miles an hour, or over 40% higher than that of the freight locomotive at 30 miles an hour, and the higher the speed the higher the compression will be, provided that all other conditions are equal. It is a mistake to think that compression always starts from the closure point; it does at very slow speeds, but as the speed increases the compression begins earlier, owing to the fact that the piston has to sweep a considerable volume of steam through a port opening which is narrowing down for the closure, in an increasingly short space of time. By giving this locomotive exhaust clearance, we not only delay the closure point, but also give a greater exhaust port opening, thus allowing the exhaust freer access to the atmosphere, and the result is a freer running locomotive.

You may say that when the locomotive is working at a short cut off less steam is admitted to the cylinder, and, therefore, the piston has less to sweep out on the return stroke, but if we consider for a moment we shall realize that the exhaust begins with the release, and by the time the return stroke has begun there is very little difference in the amount of steam left in the cylinder, whether running on long or short cut off.

When dealing with the question of compression we have to look into the matter from several different view points. From the point of view of economy of steam consumption per unit of power developed, the higher the compression the greater the economy, provided we do not run the compression higher than boiler pressure. This is on account of the clearance volume, and we can readily understand that, the higher the compression the less steam has to be supplied from the boiler to build up the initial pressure, and if the compression reaches boiler pressure there is no steam drawn from the boiler until the piston actually starts its working stroke.

The next thing to consider is the power required, as it is no use trying to run on a very fine thread of steam if we cannot get the tractive effort necessary to keep the load moving. From this aspect of the question, compression is negative effort, and a high compression curve seriously cuts down the area of an indicator diagram and the mean effective pressure, thereby reducing the power delivered.

The third and most important consideration is machine friction, and this generally limits the compression in practice. When the compression is too high, it can generally be detected in the cab, as the locomotive will jig, and ride badly at high speeds, and the effect on the rods and other running gear will be disastrous if this condition is allowed to continue. If we compare fig. 1 and 4 we find that the closure takes place at 76% of the stroke for the passenger locomotive in running position; with the freight locomotive running at the same cut off the closure takes place at 73%, but if we eliminate the exhaust clearance on the passenger locomotive we shall advance the closure point from 76% to 68% of the stroke. This goes to show how much the closure point is affected by the amount of exhaust clearance. For my own part I do not think the actual closure point is of very much importance, but that the exhaust port opening has a great deal more influence on the compression than the actual position of the closure point. I contend that if we pay proper attention to the exhaust port opening, the closure point will take care of itself.

There is no purely mathematical means of determining the most desirable exhaust port opening, and this, like so many other problems in locomotive work, has had to be determined by practical experiments. It is here that we find the chief difference between passenger and freight locomotive setting, and, still referring to figs. 1 and 4, we see that the maximum exhaust port opening in running position for the passenger locomotive is just over 1⅝ in., whereas that of the freight locomotive is just over 1 9/16 in., when running at 50% cut off, while if we notch up the freight locomotive to the same cut off as the passenger locomotive we have a maximum exhaust port opening of only 1¼ in. This maximum port opening is only maintained for a few inches of the stroke, and it is easy to understand that when this port opening begins to narrow down it will form quite a choke for the exhaust, at a high piston speed, and will build up quite a little compression before the closure point is reached.

We all realize that a locomotive exhaust has to be choked to a certain extent, to obtain a high velocity jet up the stack, which will induce a proper draft through the grates, but this choking should be done by the exhaust pipe tip and not by the valve. Any choking which is effected by a correct exhaust pipe tip can build up but very little back pressure in the cylinder, whereas the throttling of the exhaust by the valve builds up considerable back pressure, and its effect on the draft is only detrimental. The area of the bore of the exhaust pipe tip on the passenger locomotive under consideration is about 23 sq. in., and on the freight locomotive 29 sq. in., and the valve displacement necessary to give a port opening equal to the area of the tip will be approximately 11/16 in. for the Pacific locomotive, and ⅞ in. for the mikado. This 11/16 in. port opening you can see from the diagram is maintained for 53% of the stroke on the Pacific locomotive, but on the mikado the ⅞ in. port opening is only maintained for 36% of the stroke when notched up to the same cut off as the Pacific. When the mikado is running at a 50% cut off, which is approximately her running position, the ⅞ in. exhaust port opening is maintained for 58% of the stroke, which compares favorably with the Pacific. I think that this gives us the chief reason why the Pacific setting is found to be more suitable for high speeds and short cut offs, while the mikado setting is better on the slower speeds and long cut offs.

We will now sum up the chief differences between passenger and freight locomotive settings, and as far as possible the reasons for the variation. The passenger locomotive has a greater lead, which gives an unrestricted supply of steam to the cylinder at the beginning of the stroke, and reduces the wire-drawing of the steam at high piston speeds. It has also the effect of increasing the exhaust port opening, which we will at once realize when we consider that the exhaust port opening at the end of the stroke must always be equal to the sum of the steam lap, plus the lead, plus the exhaust clearance, so that the greater any of these three properties are, the greater by that amount is the exhaust port opening at the end of the stroke. The freight locomotive has a smaller lead, in order to get a slightly later cut off, which will increase the

starting effort, and as this locomotive works at relatively lower speeds, it is not subject to wire-drawing to nearly the same extent as the passenger engine. The passenger locomotive has a greater steam lap, which lengthens the period of expansion and also increases the exhaust port opening, as explained before. The freight locomotive has a smaller steam lap, which allows a slightly later cut off in full gear, and though it tends to cut down the period of expansion a little, the ill effect is neutralized by the reduction or total elimination of the exhaust clearance. The passenger locomotive has a greater exhaust clearance, which hastens the release and delays the closure point, but, what is more important, it increases the exhaust port opening the amount necessary to keep the compression below the limit which will give a smooth running locomotive at the high speeds at which it has to work. The freight locomotive has little or no exhaust clearance, which has the effect of delaying the release, which is an advantage. It also has the effect of advancing the closure point and restricting the exhaust port opening, but there are no ill effects to be found from this at the long cut offs and relatively slow speeds at which this engine works. From this comparison we can see that the passenger locomotive setting has been developed to give a smart and free running locomotive at high speeds and short cut offs, while the chief consideration with the freight locomotive setting is to obtain the greatest possible tractive effort at moderate speeds and to run on comparatively long cut offs with the greatest possible economy by delaying the release point as far as possible.

I wish to express my gratitude to W. U. Appleton, Mechanical Superintendent, C.N.R., Moncton, for the help he has given me in getting out this paper, both in the way of suggestions and in affording me opportunities of taking readings from the actual locomotives.

The foregoing paper was read before the Canadian Railway Club recently.

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**Coal Car Shortage in United States**—The Interstate Commerce Commission issued the following circular March 2: The supply of cars available for the transportation of coal is insufficient to meet the demand. Unusual movements, incident upon the strike of coal miners, has brought about an abnormal location of cars. It is desirable that the proper relocation of cars shall be brought about as rapidly and with as little confusion as is possible. Critical situations still exist in which fuel for essential industries and purposes must be provided. The railways and the coal operators have all been working under the uniform mine rating and car distribution rules established by the Railroad Administration, which seem to be generally satisfactory and to meet with general approval. To the end that conflicting and contradictory rules on different roads, and in different fields, may be avoided in the unusual conditions which now exist in the industries and on the roads, the commission recommends that until experiences and careful study demonstrate that other rules will be more effective and beneficial, especially during the remainder of the early spring, the uniform rules as contained in the Railroad Administration's Car Service Section circular CS-31 (revised) be continued in effect.

Passenger fares have been advanced on French railways, 50%, in addition to previous advances.

# Birthdays of Transportation Men in March.

Many happy returns of the day to:—

F. G. Adams, Commercial Agent, T.R. R., and Division Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at St. John's Nfld., April 6, 1878.

S. S. Anderson, General Manager, Sandwich, Windsor and Amherstburg Ry., Windsor, Ont., born there April 14, 1881.

W. H. Ardley, ex Comptroller, G.T.R., and Grand Trunk Pacific Ry., Montreal, born at London, Eng., April 24, 1858.

Jas. Black, Freight Claim Agent, C. P.R., Vancouver, B.C., born near Seaforth, Ont., April 19, 1858.

C. G. Bowker, General Superintendent, Ontario Lines, G.T.R., Toronto, born at Medford, N.J., April 21, 1871.

G. C. Briggs, Supervisor of Buildings, Eastern Lines, Canadian National Rys., Toronto, born at Cockermouth, Eng., April 23, 1886.

F. D. Burpee, Superintendent, Ottawa Electric Ry., Ottawa, Ont., born there, Apr. 25, 1876.

G. Cobb, Superintendent, Western Division, Reid Newfoundland Co., Bishop's Falls, Nfld., born at Coupar Angus, Scotland, April 21, 1885.

A. V. Collins, Travelling Auditor, Canada Steamships Lines Ltd., Toronto, born at Island Pond, Vt., April 21, 1868.

R. J. Collins, Chief Dispatcher, Cranbrook Division, British Columbia District, C.P.R., Cranbrook, born at Winnipeg, April 29, 1883.

J. P. Doherty, Port Agent, Canadian Government Merchant Marine Ltd., St. John, N.B., born at Portland, Me., April 8, 1889.

W. A. Duff, Assistant Chief Engineer, Canadian National Rys., Moncton, N.B., born at Hamilton, Ont., April 20, 1877.

A. Gaboury, Superintendent, Montreal Tramways Co., Montreal, and President Canadian Electric Railway Association, born at Montreal, April 6, 1875.

Lieut.-Col. F. A. Gascoigne, D.S.O., Secretary-Treasurer, Canadian Pacific Ocean Services Ltd., Montreal, born at Gosport, Hants, Eng., April 2, 1866.

J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, born at Udewella Ceylon, April 12, 1875.

V. A. Harshaw, Manager, Fredericton & Grand Lake Coal & Ry. Co., and New Brunswick Coal & Ry., Fredericton, N.B., born at Mono, Ont., April 26, 1865.

E. J. Hilliard, Division Freight Agent, G.T.R., Ottawa, Ont., born at Montreal, April 14, 1870.

J. H. Johnston, Supernitendent, Bridges and Buildings, Eastern Lines, G.T.R., Montreal, born at Uxbridge, Ont., April 22, 1866.

Capt. A. H. Kendall, M.C., Master Mechanic, Quebec District, C.P.R., Montreal, born at Aspatria, Cumberland, Eng., April 4, 1878.

G. F. Knight, Superintendent, St. Malo shops, Canadian National Rys., Quebec, Que., born at Charlottetown, P. E.I., Apr. 3, 1879.

A. A. Larocque, President, Sincennes-McNaughton Line Ltd., Montreal, and Second Vice President, Dominion Marine Association, born at Henryville, Que., April 30, 1865.

G. W. Lee, Commissioner and acting Chairman, Timiskaming & Northern Ontario Ry., North Bay, Ont., born at Renfrew, Ont., April 15, 1871.

A. MacDonald, Traffic Superintendent, Winnipeg Electric Ry., Winnipeg, born April 7, 1872.

W. E. McGill, Assistant Superintendent, Montreal Terminals Division, Quebec District, C.P.R., Montreal, born at Toronto, April 5, 1884.

J. A. Macgregor, Superintendent, Edmonton Division, Alberta District, C.P. R., Edmonton, born at Dufftown, Scotland, April 5, 1873.

G. P. MacLaren, Engineer, Ontario District, Canadian National Rys., Toronto, born at London, Ont., April 4, 1878.

B. R. Marsales, District Freight Agent, Canadian National Rys., Saskatoon, Sask., born at Guelph, Ont., April 13, 1887.

Paul J. Myler, President, Canadian Westinghouse Co., Ltd., Hamilton, Ont., born at Pittsburg, Pa., April 24, 1869.

J. H. Norton, Assistant General Freight Agent, Eastern Lines, Canadian National Rys., Halifax, N.S., born at Shaftesbury, Eng., April 21, 1884.

T. R. Percy, General Agent, Canadian Pacific Ocean Services Ltd., Yokohama, Japan, born in Ireland, April 21, 1888.

G. D. Perry, General Manager, Great North Western Telegraph Co., Toronto, born at Whitby, Ont., April 19, 1858.

S. J. L. Potter, Local Treasurer, Eastern Lines, Canadian Northern Ry., Toronto, born at Burrington, Devonshire, Eng., April 5, 1887.

R. A. Pyne, Superintendent of Motive Power and Car Department, Eastern Lines, C.P.R., Montreal, born at Toronto, April 10, 1874.

Lieut. R. S. Richardson, Superintendent, Canadian National Rys., Fort William, Ont., born at Napanee, Ont., Apr. 9, 1865.

E. W. Smith, Superintendent, Dining and Parlor Car Service, G.T.R., Toronto, born at North Bridge, Mass., April 21, 1869.

J. A. Sutton, District Fuel Agent, Canadian National Rys., Cochrane, Ont., born at Moncton, N.B., April 12, 1894.

J. J. Sullivan, Roadmaster, C.P.R., Lauder, Man., born at Fishers, N.Y., April 29, 1866.

G. M. Thomas District Freight Agent, Canadian National Rys., Hamilton, Ont., born at Dundas, Ont., April 21, 1876.

W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., April 14, 1877.

C. H. Towle, Assistant Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., born at Enfield, Me., April 13 1878.

W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., Montreal, born at Hope, Ind., April 2, 1884.

W. Woollatt, Vice President and General Manager, Essex Terminal Ry., Walkerville, Ont., born at Weedon, Hertfordshire, Eng., April 2, 1855.

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H. E. Whittenberger, General Manager, G.T.R. Western Lines, Detroit, Mich., in remitting his yearly subscription, writes: "I consider Canadian Railway and Marine World a very finished periodical, and take a great interest in reading it."

Steel Rail Orders.—The Algoma Steel Corporation, Sault Ste. Marie, Ont., has booked during the past 6 months, orders for nearly 230,000 tons of steel rails, as follows: 140,000 tons, 85 lb., for C.P.R.; 50,000 tons, 85 lb., and 60 lb., for Canadian National Rys.; 35,000 tons, 100 lb., A.R.A. section, type A, for G.T.R., and also a few small lots of 85 lb. sections.

# Agreement for Acquisition of Grand Trunk Railway System by Dominion Government.

Canadian Railway and Marine World for March contained particulars of the G.T.R. shareholders' meeting in London, Eng., at which it was decided to ratify the agreement arrived at between the Dominion Government and the company's Chairman, Sir Alfred Smithers. Under the authority of an order-in-Council passed Dec. 31, 1919, the agreement was signed by the Minister of Railways, Hon. J. D. Reid, and by the Railway Department's Acting Secretary, and was sent to the Canadian High Commissioner in London for execution by the G.T.R. Co.'s Chairman and Secretary. The agreement is a follows:

Whereas, by an act of the Parliament of Canada, entitled The Grand Trunk Railway Acquisition Act, 1919, the parties hereto were authorized to enter into an agreement for the acquisition by the government, on the terms therein stated, of the entire capital stock of the Grand Trunk except the guaranteed stock amounting to £12,500,000; whereas the issued capital stock of the Grand Trunk (not including the present guaranteed stock) consists of the following:

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| First preference stock, 5% | £ 3,420,000 |
| Second preference stock, 5% | 2,530,000 |
| Third preference stock, 4% | 7,168,055 |
| Ordinary or common stock | 23,955,437 |
| | £37,073,492 |

And whereas the present outstanding debenture stocks of the Grand Trunk, consisting of—

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|---|---|
| Five per cent. G.T. debenture stocks | £ 4,270,375 |
| Five per cent. Great Western debenture stocks | 2,723,080 |
| Four per cent. G. T. debenture stocks | 24,624,455 |
| Four per cent. Northern debenture stocks | 308,215 |
| | £31,926,125 |

are entitled to certain voting powers at meetings of shareholders of the Grand Trunk; witnesseth: that the parties hereto have agreed as follows:

2. **Statement of Control.**—The Grand Trunk represents that the companies, properties and interests comprised in the G. T. R. System are correctly and fully set forth in the first schedule of this agreement, and that it has in such schedule correctly and fully shown how the various companies and their undertakings are controlled by the Grand Trunk, whether by stock ownership and to what extent, and whether by leases, agreements or otherwise, distinguishing in these respects the direct ownership and control by the Grand Trunk from the indirect ownership and control through companies included in the system.

2. **Sale and Purchase of Certain Stocks.**—The Grand Trunk hereby undertakes and agrees to use its best endeavors to cause the sale and delivery to the government, and the government agrees to acquire, in the manner and on the terms hereinafter set forth, the preference and common stock of the Grand Trunk now issued and outstanding to the face value mentioned in the recitals to this agreement.

3. **Part Consideration—Cessation of Voting Powers.**—As part of the consideration for such acquisition, the government agrees to guarantee the payment of—

(a) Dividends payable half-yearly, at 4% per annum, upon the present guaranteed stock; (b) The interest upon the present debenture stocks as and when payable, in accordance with the terms thereof; these guarantees to take effect upon the date of the appointment of the committee of management hereinafter mentioned. The guarantees shall be in form, or substantially in the form, set forth in the second and third schedules, respectively, to this agreement, shall be signed by the Minister of Finance and Receiver General of Canada on behalf of the King in the right of the Dominion of Canada, and, forthwith after the appointment of the committee of management hereinafter referred to, shall be deposited with the High Commissioner for Canada in London, Eng., for the benefit and information of all parties concerned. Provided that concurrently with the deposit of such guarantees, the voting powers at meetings of shareholders of the Grand Trunk now vested in or exercisable by the holders of the present guaranteed stocks and the present debenture stocks, respectively, shall cease and determine absolutely.

4. **Committee of Management.** — Forthwith after the ratification of this agreement, as provided in the said act, a committee of management of the G. T. System shall be formed, consisting of five persons, two to be appointed by the Grand Trunk, two by the government, and the fifth by the four so appointed. The functions of the managing committee shall be to insure the operation of the G. T. System (in so far as it is possible to do so) in harmony with the Canadian National Rys., the two systems being treated, in the public interest, as nearly as possible as one system. No contract or agreement shall be made by the Grand Trunk, or by any company comprised in the G. T. System, and controlled by the Grand Trunk, other than such as are necessary for the usual and ordinary business of the system except with the concurrence of the managing committee, and the approval of the Governor in council. The managing committee may, with the consent of the Governor in council, borrow from the government on Grand Trunk notes, or other obligations or securities approved of by the Governor in council, for the carrying on of the operation or improvement of the G. T. System. The committee shall continue to act until the preference and common stocks are transferred to or vested in the Government, when it shall be discharged.

5. **Examination of Books and Properties.**—The books, minutes, reports, documents, and other records, and all the railways and properties of the companies comprised in the G. T. System, shall at all times be accessible and open to inspection and examination by any person or persons named by the Minister of Railways and Canals of Canada, or by the board of arbitrators hereinafter mentioned; and all proper aid and assistance shall, on request, be rendered to such person or persons by the committee of management and by the officers and employes of the Grand Trunk and its allied companies, including the making and giving of extracts, copies and statements.

6. **Submission to Arbitration.**—The value, if any, to the holders thereof, of the preference and common stock shall be determined by a board of three arbitrators, one to be appointed by the government, one by the Grand Trunk, and the third shall be Sir Walter Cassels, Judge of the Exchequer Court of Canada, who shall be Chairman of the board. Should Sir Walter Cassels die or be unable to act, the said parties shall agree upon another third arbitrator who shall be either the then Judge of the Exchequer Court of Canada, or one of the judges of the Supreme Court of Canada, and who shall likewise be Chairman. Should any vacancy occur in the board of arbitrators other than the third arbitrator, the arbitrator to fill the vacancy shall be appointed in the same way as the arbitrator whose seat has become vacant was appointed.

7. **Arbitration Proceedings.** — The board of arbitrators shall have full power and authority in respect of the control of the arbitration and the proceedings thereof including the administration of oaths and in respect of the admission of evidence. The board shall have power to employ or procure such legal, engineering, actuarial or other assistance and such evidence as it may require. Should the arbitrators require that the evidence of any person be taken de bene esse, or out of Canada, the arbitrators may delegate to any person power to administer oaths, to take such evidence under oath, or otherwise, and to transmit to the arbitrators for use upon the arbitration. The evidence upon the arbitration shall be taken in shorthand and transcribed by competent stenographers appointed by the arbitrators and duly sworn.

8. **Making of Award and Appeals.**— The award shall be made by the arbitrators, or a majority of them, within nine months from the appointment of the arbitrators, or within such further time as the Governor in council may approve. The unanimous award of the arbitrators shall be final, but should the award not be unanimous, and should notice of appeal be given by either party to the other within 30 days after the making of the award, an appeal therefrom, upon any question of law, shall lie to the Supreme Court of Canada, and/or to the Judicial Committee of the Privy Council, if leave be granted by the said committee.

9. **Clerical Errors.**—The arbitrators shall have the power to correct in their award any clerical errors or mistakes, at any time within two weeks after delivery thereof.

10. **Undisclosed Liabilities.**—Should the government, within three months after the making of the award, claim that there existed any liabilities of the Grand Trunk, or of any company comprised in the G. T. System, which were not disclosed to the board of arbitrators prior to the making of their award, the government may, within such period of three months, apply to the board of arbitrators to amend their award, and the board may thereupon decide whether such liabilities existed and were disclosed to them, whether the amount of their award would or would not have been affected thereby, and the amount of the deduction, if any, to be made in respect thereof; and may amend their award accordingly.

11. **Limit to the Amount of the Award.**—The value, if any, so determined shall not be greater than an amount on which the annual dividend at 4% per annum on the aggregate face value of

the present guaranteed stock and the new guaranteed stock taken together would be $5,000,000; that is, the value, if any, so determined shall not exceed $64,166,666.66. The fixing of this limit shall not be taken by the arbitrators as any admission or indication that the value to be determined is the amount so fixed, or any other amount.

12. Issue of new Guaranteed Stock.—Upon the value of the preference and common stock being finally determined under the provisions of this agreement, the Grand Trunk shall create an issue of non-voting 4% capital stock. The amount thereof shall be the amount of the value, if any, of the preference and common stock, determined as above provided, less such deductions therefrom as are to be made under the terms of this agreement. The government shall guarantee to the holders of the new guaranteed stock that there shall be paid a dividend thereon at the rate of 4% per annum, payable half yearly, from the date of the appointment of the committee of management. The new guaranteed stock shall be distributed among the holders of the preference and common stock, upon the transfer to or vesting in the government of such stock, in proportions which shall be determined by the arbitrators. The new guaranteed stock shall be deemed and issued as fully paid stock and free from calls and other liabilities. The new guaranteed stock shall be in the form, or substantially in the form, set forth in the fourth schedule to this agreement, and the guarantee of the government in respect thereof shall be signed and deposited in the same manner as is provided in this agreement with respect to the guarantee of the present guaranteed stock. A copy of the guarantee in this clause provided for shall be endorsed or printed upon the certificates of new guaranteed stock as from time to time issued.

13. Transfer of Preference and Common Stocks—The new guaranteed stock shall be issued in exchange for the preference and common stock upon the transfer to or vesting in the government, or its nominees, of such preference and common stock as aforementioned. Should any shares or any part of the preference and common stock not be transferred to the government, the Governor in council may declare such shares or any such part of the preference and common stock to be the property of the Minister of Finance in trust for His Majesty and upon the making of such declaration the shares or part thereof not so transferred shall immediately become the property of His Majesty, and proper entries thereof in the stock registers and other books in that behalf shall be made. The amount of the new guaranteed stock to which the holders of any such shares or part thereof so vested in His Majesty would be entitled to under the terms of this agreement shall be issued and delivered to such holders, or their representatives, upon proper application being made therefor to the government and the surrender or delivery of such shares to the government or its nominees, or proper evidence of the applicants' rights thereto should such share certificates be lost or destroyed.

14. Redemption of Stocks.—The present guaranteed stock and the new guaranteed stock, or any part thereof, may be called in or redeemed by the government or the Grand Trunk, at par, at any time after five years from the date of the appointment of the said Committee of Management, on six months notice, by advertisement, to the holders thereof.

15. Vacating of Offices.—Upon the preference and common stock being vested in the government, or its nominees, the Grand Trunk shall cause its board of directors, and the board of directors of each Company comprised in the G. T. System, to resign or vacate their offices, as directors, at such time or times and in such manner as may be requested by the government, and nominees of the government shall be duly appointed to the vacancies caused thereby. Should any director of the Grand Trunk, or of any company comprised in the G. T. System, which is within the legislative authority of the Parliament of Canada, neglect to resign or vacate his office in accordance with such request, the Governor in council may declare the office of any such director to be vacant on and after a date to be named in such order, and may appoint a director in his stead.

16. Varying Obligations.—After the execution of this agreement and until the preference and common stock is vested in the government, the Grand Trunk shall refrain, without the approval of the Governor in council, from varying by bylaws, agreement, or in any other manner whatsoever, the rights or liabilities appertaining to the capital stocks or securities of the Grand Trunk, or of any company comprised in the G. T. System, and from increasing, without such approval, except in so far as is necessary in the usual and ordinary conduct of the business of the system, or as may be concurred in by the committee of management and by the Governor in council, the obligations or liabilities of the Grand Trunk or of any company comprised in the G. T. System. The Grand Trunk shall also refrain, without such approval, from declaring any dividends on any of the capital stocks.

17. Superannuation and Pension Funds.—The Grand Trunk Superannuation Fund shall continue in existence, and shall continue to be administered as at present, and in accordance with the rules and regulations governing the same. The rules and regulations of the Grand Trunk pension system shall continue to be applicable to employes of the G. T. System until a general pension scheme applicable to all employes of Canadian Government owned or controlled railways shall be adopted and become effective. The rules and regulations of the Grand Trunk Insurance and Provident Society shall continue to be applicable unless and until the government shall adopt and make effective a general insurance scheme applicable to all employes of Canadian Government owned or controlled railways.

**Companies Controlled by Subsidiary Companies of G.T.R. Co. of Canada**

| | |
|---|---|
| Chicago & Kalamazoo Terminal Rd. Co. | Controlled by G.T. Western Ry. Co. through ownership of 100% of stock. |
| Detroit & Huron Ry Co. | |
| Pontiac, Oxford & Northern Rd. Co. | |
| Chicago, Kalamazoo & Saginaw Ry. | Controlled by G.T.W. Ry. Co. by lease. |
| Detroit & Toledo Shore Line Ry. Co. | G.T.W. owns 50% of stock |
| Toledo Terminal Railway Co. | G.T.W owns 9.68% of stock. |
| Belt Ry. Co. of Chicago | G.T. Junction Ry. owns 1/12 of stock. |
| Chicago & Western Indiana Rd. Co. | G.T. Junction Ry. owns 1/5 of stock. |
| Grand Trunk Milwaukee Car Ferry Co. | Controlled by Detroit, Grand Haven & Milwaukee Ry. through ownership of 100% of stock. |
| G.T. Pacific Branch Lines Co. | Controlled by G.T. Pacific Ry. Co. by ownership of 100% of stock. |
| G.T. Pacific Coast Steamship Co., Ltd | |
| G.T. Pacific Development Co., Ltd. | |
| G.T. Pacific Dock Co. of Seattle | |
| G.T. Pacific Saskatchewan Ry. Co. | |
| G.T. Pacific Telegraph Co. | |
| G.T. Pacific Terminal Elevator Co., Ltd. | |
| The Bulkley & Telkwa Valley Coal Co. | |
| The National Construction Co., Ltd. | |
| The Pacific Northern & Omineca Ry. Co., Ltd. | |
| The G. T. Pacific Alaska Steamship Co., Ltd. | Controlled by G.T. Pacific Dock Co. of Seattle, by ownership of 100% of stock. |
| Barre Granite Ry. | Controlled by C.V. Ry. by ownership of 100% of stock. |
| Bethel Granite Ry. | |
| Central Vermont Transportation Co. | |
| Montreal & Province Line Ry. Co. | |
| Montreal & Vermont Junction Ry. | |
| Southern New England Ry. Co. | |
| Southern New England Rd. Corporation | |
| Southern Vermont Ry. | |
| Stanstead, Shefford & Chambly Rd. Co. | |
| New London Northern Rd Co. | Controlled by C.V. Ry. by lease. |
| West River Rd. Co. | |

**Schedule Companies Directly Controlled by G. T. R. Co. of Canada.**

| | | |
|---|---|---|
| Bay City Terminal Ry. Co. | Stock ownership | 100% |
| Canada Atlantic Transit Co. | " | 100% |
| Canada Atlantic Transit Co. of U.S. | " | 100% |
| Central Vermont Ry. Co. | " | Majority |
| Champlain & St. Lawrence Ry. Co. | " and lease | 100% |
| Chicago, New York & Boston Refrige'r Co. | Stock ownership | 100% |
| Detroit, Grand Haven & Milwaukee Ry. Co. | " | 100% |
| Detroit Terminal Rd. Co. | " | 50% |
| Grand Rapids Terminal Rd. Co. | " | 100% |
| Grand Trunk Junct. Ry Co. | " | 100% |
| Grand Trunk Pacific Ry. Co. | " | 100% |
| Grand Trunk Western Ry Co. | " | 100% |
| International Bridge Co. | " | 100% |
| Michigan Air Line Ry. | " and lease | 100% |
| Montreal & Southern Counties Ry. Co. | " | Majority |
| Montreal Warehousing Co. | " | Majority |
| New England Elevator Co... | " | 100% |
| Ontario Car Ferry Co. | " | 50% |
| Ottawa Terminals Ry. Co... | " | 100% |
| Portland Elevator Co. | " | 100% |
| St. Clair Tunnel Co. | " | 100% |
| Terminal Warehouse Registered | " | 100% |
| The Canadian Express Co... | " | 100% |
| The Erie, London & Tilsonburg Ry. Co. | " | 100% |
| The Lachine, Jacques Cartier & Maisonneuve Ry. Co | " | 100% |
| The Maganetawan River Ry. Co. | " | 100% |
| The Oshawa Ry. Co. | " | 100% |
| The Rail & River Coal Co. | " | 100% |
| The Realty Assets Co., Ltd. | " | 100% |
| The Toronto Belt Line Ry. Co | " | 100% |
| Thousand Islands Ry. Co. | " | 100% |
| Toledo, Saginaw & Muskegon Ry. Co. | " | 100% |
| Toronto Terminals Ry. Co... | " | 50% |
| Transcontinental Townsite Co., Ltd. | " | 100% |
| United States & Canada Rd. Co. | " and lease | 100% |

**Companies Controlled by G.T.R. Co. of Canada by Lease.**

Atlantic & St. Lawrence Ry.
Buffalo and Lake Huron Ry. Co.
Central Counties Ry. Co.
Chicago, Detroit & Canada Grand Trunk Junction Rd. Co.
Cincinnati, Saginaw & Mackinaw Rd. Co.
Lewiston & Auburn Rd. Co.
Norway Branch Rd. Co.
Pembroke Southern Ry. Co.

In no case shall any acquired rights or vested interests in either the pension system or the Insurance and Provident Society be affected.

18. Grand Trunk Pacific.—The Minister of Railways and Canals, as receiver of the G.T.P. Ry. System, may entrust to the committee of management on terms to be approved by the Governor in council, the exercise of such of his powers as Receiver as the Governor in council may deem requisite, in order that the operation and management of the G. T. Pacific System may be conducted in harmony with the operation of other railways and properties under the control of the committee, and upon the transfer to or vesting in the government of the preference and common stock as herein provided for, the Governor in council may, on such terms and conditions as may be deemed necessary in the public interest, order the discharge of the receivership of the G. T. Pacific System, and the termination and withdrawal of the proceedings in the Exchequer Court of Canada relating thereto.

19. G.T.P. Guarantee and Claims.—For the purpose of the valuation provided in this agreement, the obligations of the Grand Trunk as guarantors of any indebtedness of the G. T. Pacific Co., or of the G. T. Pacific Branch Lines, or otherwise, and the claims of the government against either of the above mentioned companies, or against any company forming part of the G. T. R. System, shall not be treated as extinguished or affected by anything contained in the said act.

20. If the arbitrators consider that the market prices or quotations of the stocks are to be taken into consideration in establishing their value, they shall not take into account the fluctuation, if any, in the market prices or quotations of the said preference and common stock caused by the negotiations between the parties hereto, the passing of the said act, or the execution of this agreement. This shall not be taken to mean that the market prices or quotations are relevant matter to be inquired into by the arbitrators.

21. Costs.—Each of the parties to this agreement shall pay its own costs of and in connection with the arbitration subsequent to the date of this agreement, including the remuneration of the arbitrator appointed by it. The remuneration of the third arbitrator, of the secretary of the arbitration board, secretarial, clerical, reporting, travelling and other necessary expenses which may be considered as in the common interests of both parties, shall be equally borne by each party. In order to provide the necessary funds to pay its expenses and its share of the common expenses, the directors of the Grand Trunk shall be entitled to create a fund, by means of assessments on the present debenture stocks and present guaranteed stock, in such proportions as the directors in their discretion may determine, which shall be deducted from any payments on said debenture and present guaranteed stocks as may be necessary:

Should any difference arise as to what is included in the expression "common interests of both parties", as used in this clause, such difference shall be settled by the board of arbitrators on the application of either party.

# Graphic Production Control Discussed.

The paper on graphic production control, by E. T. Spidy, A.M.Am.Soc.M.E., Production Engineer, Angus Shops, C. P.R., Montreal, which was published in Canadian Railway and Marine World for February, was, after its reading, discussed by the Canadian Railway Club's members, as follows:

**L. C. Ord**, Assistant Works Manager, Angus shops, C.P.R. After Mr. Spidy's remarks it is possible that some of the members may think, from the amount of color on the charts, that this subject is a complicated one which requires considerable staff and considerable work. It, however, requires a very small staff to operate, as in a shop of 2,500 men the total additional staff required to handle this would not be more than four or five men, and with this, 50% increase should be obtained in the output without increasing the supervision. This method of control also looks after the movement of material, and in a shop, large or small, it is a familiar sight to see the foreman, who should be watching his men, chasing over to the stores or elsewhere, looking for material which he is short of. Under this system the chasing of material is done by one man and the foreman stops moving from shop to shop. The same condition applies where are several shops handling the same material. One fellow knows that the stores has something he wants and he goes and gets it, but with the schedule man watching, the delivery of material is checked up, and he sees that it is distributed to the shop as required. Where large quantities of material are used for new equipment the tracing proposition is serious, and in the case of some items it is handled in bulk. We carry considerable stock ahead and as the supply begins to run low the check is repeated every day until it is received. This system shows the number of days the shop has been out each class of material. The party concerned is supplied with a list of the outstanding material that is short and he can act on the situation. The staff required to do this is extremely small and the men who specialized on it does more work than several foremen. In any large shop, where any special work is required in a hurry, nothing gives a quicker answer than a schedule. This schedule is not a new method. It is equivalent to putting a lazy man on the basis of a good man. The older experienced foremen planned his next day's work the day before. He knew what he had to do and did not wait until the morning to assign his men to their different work. He wrote up the list of what was to be done and told his men to do it. Various foremen had different methods. This system writes up the list for the foreman the night before and gives it to him in time to assign men to the jobs for the following day, and the men do not work one against the other. In making a chart you have a definite and uniform method and with a large staff every man knows it in time. In a shop where you put four or five men on a car or locomotive, and have some working on the wheels and some on the other parts, if the men could do all the work it would then be a simple matter to take the material as it came along, but the modern shop is gauged up to its maximum and each man specializes, and it becomes more difficult to see that each man gets off the job in time for the next man. The schedule puts that in the hands of each foreman, as it indicates whether any one shop is late repeatedly or whether it is ahead of time. In almost every shop where a job is started a different schedule is required. You do not start off and find out later where you are going to come out at. Before a foreman starts a job he has to make a definite plan of how he is going to do the work, and then he is checked up to see that he carries it out. His plan can be checked up in detail before he starts out and you know how closely he lives up to it. By checking the work and your layout you can see that distribution is controlled before the job starts and each schedule will bring better results later on. The last point is that it does ensure uniformity of output and a certainty of operation that cannot be obtained in any other way.

**A. McAlpin**, Angus Shops, C.P.R., Montreal. Production by schedule has been so clearly stated that, to shopmen at any rate, questions seem hardly necessary. That is as far as the paper goes. But there is one thing not mentioned in the paper that at present time has a distinct bearing on the paper and in the future may have a still more direct bearing. These schedules have all been based on an output under a piecework system, or one might say on an accelerated labor basis. As the Canadian railways have accepted the McAdoo award and as one of the clauses of that award decrees that where the men rate a majority against piecework, it automatically shall cease to exist. I would like to know if Mr. Spidy can enlighten us as to how we are to keep up the labor pace to fulfil the requirements of the present schedule.

**E. T. Spidy.** You ask what would happen to the schedule if the piecework system fails. At Angus shops piecework is in force, which accelerates the output of the individual and this would, in a way, affect the schedule, but the schedule in itself is entirely independent. Should piecework be discontinued the check we get on individual operations by the piecework foremen would also be discontinued. We would still have, however, in every department, the check which is made by the production staff in each shop. Should piecework be discontinued, a certain number of the piecework staff would probably be absorbed into supervision, which would provide extra foremen to check up the work and see that it was done. My own opinion is that a shop without piecework requires a production schedule that is more extensive than one which has piecework, because that provides the only individual check on the work. Just how one is going to prevent a slow up in the output is a matter the supervisors will have to handle, but if you provide the supervisor with a list of work required each day, he has something definite to work to, and the management has a definite check every day, it can be readily seen when he is falling down and where. The schedule will tell you exactly how your shop is being run, which will give the necessary stimulus to get the output.

**W. Blackbird**, Contract Inspector, G.

T.R. I do not consider that our system on the G.T.R. has very much bearing upon the system explained by Mr. Spidy. We have a system of contract which, while it perhaps does not control the output in the same manner as Mr. Spidy's system, gives a stimulus to the men. By having a system of time allowances, based upon the average man's production, the man that is capable of doing a little better, by the extra effort, earns bonus. It has proved to be of very great assistance in maintaining the output, especially in car and motive power department's work. Our schedules are all upon a time basis, and if a man produces an amount of time which exceeds his actual time worked, the excess time, at his hourly rate in the shop, represents his bonus. I do not think the systems are comparable.

W. H. Sample, General Superintendent, Motive Power and Car Departments, G.T.R. May I ask Mr. McAlpin if he has had any experience working with a schedule, on piecework or working on a stated hourly basis, and did he make a comparison of the results?

A. McAlpin: I have to answer in the negative. I am employed at the Angus shops and our output is on a strictly work basis.

J. Burns, Works Manager, Angus Shops, C.P.R.: I do not think we can compare this schedule with piecework as it is an entirely different proposition. As Mr. Spidy explained, the intent of the schedule is to plan the work out so that each unit comes in its proper course, and delay is thus avoided. When we start to build locomotives or cars, we have to have designs or drawings and after that the patterns have to be made and castings and other materials produced. The schedule is framed so that each article comes along in its proper turn. The piecework has nothing to do with this. Of course the piecework or bonus system has to do with the output, but the schedule has to do with it in a different sense. We all know that material coming from the blacksmith shop or the machine shop, if not delivered in time, will finally cause delay in other parts of the shop. If we are to receive steel castings from the outside stores and they are not delivered, and we have a boiler ready, it has to wait until we get the castings. This is where the schedule shows its proper use. Anyone who has seen it operate will certainly know that in large shops it is an absolute necessity, and it can be used in any shop, but in large shops especially, where so many different departments are producing or require material, it is necessary to ensure that no delay takes place at the different parts of the shop. We have found that in our shops where we manufacture parts for locomotives and cars, and also manufacture material for outside points on the system, the machine shop foreman gets orders from the stores for material for outside points at the same time that he is supplying material for the erecting shop, and if the foreman of the erecting shop is waiting for the material, and the man at the outside point is also waiting for it, then somebody has got to come in between who knows where the material should be supplied at first. The schedule man has a schedule for that material and he knows the time the material is to be delivered. He has the matter in hand and can deliver to the stores, also at the same time produce the article for the erecting shop, in time to avoid delay. If we did not have a schedule, to know our actual requirements, we would not know what to do. When you take the system all the way through, it helps both the foreman and the supervision in handling the work. Each one knows just what is required and can bring pressure to bear at the proper time to get the desired results.

W. A. Booth, Chief Draftsman, G.T.R.: I notice that considerable mention has been given in the paper about the drawing office. As a general rule the drawing office comes in for very little credit. I remember my first chief, the late Geo. Holland, saying that if anyone came in for criticism it was generally the drawing office. Go anywhere you will; it is just the same, the drawing office is the bumping post of every mechanical institution. After going through this paper and considering the subject, I am satisfied that everything hinges on the drawing office. That office must prepare the designs and drawings before the patterns can be made, and the foundry, machine and erecting shops are all more or less dependent on that office. I said to one of my principals a short time ago that, as a doctor is to the patient, so the drawing office is to the shop foremen and I make that statement without any fear of contradiction.

W. H. Winterrowd, Chief Mechanical Engineer, C.P.R.: In all fields there has always been incentive to produce efficiently and economically. During the past few years that incentive has become greater and I do not believe that we have ever had a greater incentive than we have at present, to produce efficiently and economically. The greatest majority of successes have been accomplished by individuals, or groups of individuals, who have had a full knowledge of all the facts with which they have had to contend, all possible steps having been taken to eliminate uncertainty. By means of the system which Mr. Spidy has described, all, or the greater part, of uncertainty, or guess work is eliminated. This system puts facts into the hands of the man, or the men, who have to use them, and with this knowledge, and within the sphere described, it is possible for them to carry out their work in the best and most efficient manner.

T. C. Hudson, General Master Mechanic, Canadian National Rys.: I think it would be unwise for the official of any other road to attempt to criticize this system which is more or less new in many respects. In the Canadian National Rys. shops, the output and cost of repairs is watched very closely. It is true, as Mr. Ord has pointed out, that any supervisor in a shop must always look ahead and plan the work that is coming next, but, with the aid of these charts, the foreman knows each day just what he has accomplished. There never has been a time when increased production was more necessary than at present. We have heard the members speaking about day work and piecework, and it brings to our minds the fact that if there is one thing we need to fear, it is the tendency which exists to do a smaller day's work, and, will have to deal with this thing pretty soon or we will suffer. European nations are organizing to increase production and we must get our thinking caps on and study local conditions in order to produce more. It is equally to the interests of the working men to consider this matter also. It will be necessary to get together to bring about the desired results. If these charts will show the workmen what they are doing, at the end of the day, they will be a benefit. I can remember the time when there was keen competition between the little shops and the big shops on the C.P.R. and in those days we used to set a good pace for Angus shops. I am glad to see that they are using the chart system to increase efficiency.

E. T. Spidy: With regard to the question as to how the estimates are arrived at. In the case of locomotive repairs, we have the average costs for the past few years, and, as a rule, the class of job is one which has been done so many times, that it is pretty well known what it should cost, and we use these averages to form our general basis, but the general average is only good in the case of straight repairs; if a job is extra big, we add a certain percentage to the average cost to make our total estimate. In the case of individual shop costs we estimate on the straight piecework basis. We have prices for each job, and by simply adding up the different operations we get the total costs of the job in that shop. Schedule work cuts the time between jobs. Piecework concentrates on the job itself. The schedule aims to cut out the lost time.

## Annual Passes for C.P.R. Employes.

E. W. Beatty, K.C., President, C.P.R., has issued the following circular to officers and employes: Effective Mar. 1, annual passes will be granted to employes coming within the following classifications and will be made good also for employe's wife where desired (one pass for two persons). Employe on a general superintendent's district, who has had continuous service for not less than 10 years, will be granted annual pass good over district on which employed. Such employe who has had continuous service for 20 years and over, will be allowed annual pass good over Eastern or Western Lines, upon whichever employed. Employe of any other department of the service will enjoy the same privilege as above, stating the territory over which pass desired. These privileges and conditions also apply to a pensioner, and to an employe who has been reinstated or re-employed, not out of the service for more than 12 consecutive months, and given seniority upon return. Women employes will be treated the same as male employes, except that passes will be good for themselves only. Upon certain trains, such as 7 and 8, these passes will not be honored.

The company's general pass regulations will continue in force, except in respect of the employes above mentioned.

**No 16-Storey Hotel for Montreal.**—The Montreal Administrative Commission is reported to have decided Mar. 9 to reject the application which the city council had approved for the erection of a 16-storey hotel in the city. The commission took the ground that the city, having good building bylaws, should not permit any variation therefrom. The bylaws permit the erection of 10-storey structures only. It was proposed to erect a $5,000,000 building on St. Catherine St., between Peel and Metcalfe Streets. Lord Shaughnessy and E. W. Beatty, K.C., of the C.P.R., were interested in the project.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Bellechasse and Temiscouata Counties, Que.**—The Minister of Railways stated in the House of Commons, March 22, in answer to questions, that Parliament has not, within the last few years, granted a charter to build a railway between St. Camille, Bellechasse County, and Cabano, Temiscouata County. Parliament has voted subsidies in this connection, but only part of them were granted, they having lapsed.

**Canadian Niagara Bridge Co.**—A press report of March 8 states that M. C. Spratt, special attorney representing the New York Central Rd., Toronto, Hamilton and Buffalo Ry., and Canadian Pacific Ry. companies, which are promoting this bridge building company, had announced that the land under option on Grand Island, in Niagara River, and on the U.S. mainland necessary for the company's purposes had been purchased; that men would be put to work at once clearing up the land on Grand Island, and that work would be started on the construction of the bridge in the spring. Everything in connection with this project is being done as secretly as possible, and no official information is obtainable. (March, pg. 135).

**Dauphin Industrial Railway** — Tenders were received to March 19 by J. A. Gorley, Secretary, Dauphin Rural Municipality, Man., for all or any part of the following equipment: 7 miles, 20 lb. rails, 24 in. gauge, with and without steel ties; 4 curves, 24 in. gauge, 40 ft. radius; 7 switches, 24 in. gauge; 110,000 ft. b.m. tamarac or B.C. fir, 3'x6'x 16'; 1 six ton gasoline locomotive, 24 in. gauge; 1 three ton gasoline locomotive, 24 in. gauge; 4 five ton dump cars, 24 in. gauge, with or without roller bearings; 4 five ton flat cars, 24 in gauge; 1 gasoline or steam shovel ½ to 1 cubic yard capacity.

**Dominion Atlantic Ry.**—The new station recently opened at Bridgetown, N.S., is a conveniently arranged structure 24 x 56 ft., with 20 ft. overhanging at each end, and has in front a walk 390 x 12 ft. The building has a cement pebbled ment, the main structure being of stucco on trussed lath, centered with basedash, with smooth finish above and below, and an asbestos shingle roof. The inside finish is of Douglas fir and birch, the ceilings and sidewalks being sandfinished and cream tinted. It contains an office 14 ft. square; ladies' waiting room, 12 x 24 ft.; men's waiting room, 20 x 24 ft., and baggage room, 20 x 10 ft. The building is heated by hot air. On the opposite side of the track a freight shed 30 x 48 ft. has been built. The contractors for these buildings were J. H. Hicks and Sons.

A press report of March 15 states recent storms and floods in Nova Scotia washed out about eight miles of the company's railway between Plympton and Digby, which will have to be rebuilt. (Dec., 1919, pg. 655).

**Edmonton, Dunvegan and British Columbia Ry.**—The car sheds at Edmonton, Alta., were destroyed by fire recently, along with 2 cars which were being repaired. The building was of frame, 150 x 50 ft. (Nov., 1919, pg. 602).

An Edmonton, Alta., press report of March 15, states that the Alberta Government, desiring to be in a position to make a deal with the E., D. and B.C.R. in the event of the Dominion Government not taking it over, has prepared a bill for submission to the legislature, appropriating $1,000,000 for improvements on the line. The expenditures proposed include $200,000 for ties; a large sum for ballasting all along the line, and particularly between Spirit River and Grande Prairie; $200,000 for leasing additional locomotives, and money to provide for paying interest on the bonds as it becomes due. (March, pg. 134).

**Esquimalt and Nanaimo Ry.**—The British Columbia Legislature has passed an act ratifying the agreement between the City of Victoria, the B.C. Government and the company, respecting the construction of a railway and general traffic bridge on Johnson St. The Lieutenant Governor on March 8, returned the bill to the legislature, recommending the substitution of an amended agreement in place of the one forming Schedule A of the original bill. The amendment desired was considered, and an amended bill was read and sent forward to the committee the same night, and the committee reported approving of the same, March 10.

A press report states that the Marine Department at Ottawa has directed an enquiry to be made to know how the proposed new bridge will affect the Dominion property on the former Songhees Indian Reserve.

A contract has been signed for the purchase of plans for the special span from Strauss Bascule Bridge Co., Chicago, Ill., and we are advised that general detail plans and specifications are being prepared for a 150 ft. single leaf combined railway and highway bridge.

Grading and other work on Lane St., in connection with the approach to the new bridge, is reported to have been started March 3, under charge of F. M. Preston, City Engineer.

There has been deposited with the Public Works Department at Ottawa, a description of the site and plans of a wharf and transfer slip proposed to be built in Nanoose Bay, Vancouver Island. (March, pg. 135).

**Grand Trunk Pacific Ry.**—A recent press report stated that a contract was about to be let for building another dock at Prince Rupert, B.C. It will be an extension of the company's present wharfage area, and will involve an expenditure of $600,000. It will be 860 x 173 ft. and will be provided with a shed 820 ft. long, with a capacity of 25,000 tons. Two tracks will be laid along the dock and provision is also being made for a travelling crane and 2 elevators.

A press report states that the United Farmers of Alberta, Sedelva Branch, has been advised that owing to financial conditions, it will be impossible to proceed with building the Biggar-Calgary Branch this year. The line is in operation from Biggar to Loverna, at the Saskatchewan-Alberta boundary, 105 miles. (Jan., pg. 18).

**Hudson Bay Ry.**—The Lieutenant Governor's speech at the opening of the Manitoba Legislature recently in referring to the Hudson Bay Ry., said: "You will again be asked to consider resolutions requesting the completion of the Hudson Bay Ry., and the transfer of the natural resources of the province to provincial jurisdiction. This road, in operation to the seaboard, and the realization of the long cherished desire of our people to be in possession of their own resources, would permit of the development of the extensive timber resources and rich mine deposits of the northern area, and produce an industrial activity capable of sustaining a large population." The resolutions had not been brought before the legislature at the time of writing.

Western members of the House of Commons met at Ottawa, March 18, and decided to press for the immediate completion of the line. It was stated that a delegation from the Manitoba Legislature would go to Ottawa to ask the Dominion Government to proceed with the work. (Dec., 1919, pg. 654).

**Kettle Valley Ry.**—The Board of Railway Commissioners has authorized the opening for freight traffic of the portion of the line from mile 13.6, near Princeton, B.C., to mile 8, south of Princeton, 5.6 miles.

The British Columbia Legislature is being asked to ratify an agreement between the B.C. Government and the K.V.R. Co. for the building of a railway from Penticton, towards the International Boundary to open up the irrigation settlement in the southern Okanagan valley. The length of the projected line is about 50 miles, exclusive of the stretch of navigation at Dog Lake. Three miles of railway will be built from Penticton to the north shore of Dog Lake, where a wharf will be built and a ferry service put on to the lower end of the lake, from which point the railway will be continued to the irrigation settlement. It is stated that this means the construction of 25 miles of railway during this year. Construction on the remaining mileage will, it is said, be carried on during 1921, the route being along the shore of Osoyoos Lake to the International Boundary at Oroville, Wash. The route is to be laid out by the government.

The Board of Railway Commissioners in Dec., 1919, approved of a route plan of the line from the south end of Dog Lake to the Indian Reserve near Okanagan Falls; about 750 ft.

The British Columbia Legislature is being asked to authorize the B.C. Government to enter into an agreement with the K.V.R. Co. for building a line from Coalmount, near Princeton to the Granite Creek Coal Mines. A press report stated that the agreement had not been completed.

**Montreal, Joliette and Transcontinental Junction Ry.**—The Dominion Parliament is being asked to extend the time within which the company may begin and complete the building of its projected railway from Montreal to Joliette and thence to Parent, Que., on the National Transcontinental Ry., 180 miles. The Quebec Legislature last session voted a subsidy of 4,000 acres of land a mile to the company to aid the construction of the railway, a condition being attached to the effect that if 25 miles of the line are not completed by Dec. 1, 1920, the subsidy will be cancelled.

This company was incorporated by the Dominion Parliament in 1918, with E. J. Walsh, F. T. Delaney, H. S. Short, C. W. Butler and L. J. Kelroe, Ottawa, as provisional directors. The Joliette and Lake Manuan Colonization Ry. Co., incorporated nearly 20 years ago, had power to build over practically the same route, but after some clearing and grad-

ing was done the company went into liquidation, and its assets were offered for sale under a court order in Sept., 1917. (July, 1918, pg. 285).

**Mount McKay and Kakabeka Falls Ry.**—Application is being made to the Ontario Legislature to extend the time during which the company's railway and any authorized extensions thereof may be operated by steam, and to extend the time for the completion of the lines authorized. This railway extends from the Fort William, Ont., city boundary for about 5 miles westerly, and is used for switching by the railways entering Fort William. It was originally designed as an electric railway, the intention being to build from Lot 10, Kakabeka Falls, to the mouth of Mission River, and thence along the shore of Thunder Bay to Squaw Bay. (Oct., 1917, pg. 393).

**Flin Flon and Mandy Mines**—A press report states that the Manitoba Government has decided to build a railway from Pas to the Flin Flon Mine, at an estimated cost of $2,500,000, as soon as the mining companies are prepared to guarantee a certain tonnage of ore. It is stated that the Canadian National Rys. will be asked to operate the line. The object is to provide an outlet for the copper ores of the district, of which the largest is the Flin Flon Mines; another being the Mandy Mine. There have been several rumors to the effect that this Flin Flon property had been sold, the latest being that the International Nickel Co. had bought it for $1,000,000 cash, but this is denied. Another report is to the effect that the Mandy Mine plant and equipment is being transferred to the Flin Flon Mine.

**Quebec Central Ry.**—We are officially advised that tenders have been received for building the extension from Scotts to St. Isadore, Que., to connect with the Quebec bridge, and that it is expected a contract will be awarded by April 1.

The Quebec Legislature, at its last session, granted a subsidy of 2,000 acres of land a mile, not convertible into money by the government, for a further extension of the Quebec Central Ry.'s Chaudiere Valley Branch, from its present terminus at Lake Frontier to St. Pamphille, L'Islet County, 25 miles. The road will follow the boundary line between Quebec and Maine and will open up a rich timber and agricultural section. We are officially advised that no decision has been arrived at by the company as to when construction will be commenced. (May, 1919, pg. 254).

**St. George's Coal Fields Ltd.**—The report presented at the annual meeting held recently at St. John's, Nfld., referred to the development of the company's mining properties which cover an area of 10 square miles. It stated that during Oct., 1919, W. F. Canning made preliminary surveys for building a railway and the provision of shipping facilities when such become necessary. He reported that the country traversed presented no engineering difficulties, and that Little Harbor, in Laporte Bay, is the most suitable point for a shipping port, it being open all the year round and contains water deep enough for the largest ships afloat close to its shores. J. J. St. John is President and T. J. Freeman, Secretary, of the company.

**St. John and Quebec Ry.**—The Lieutenant Governor's speech at the opening of the New Brunswick Legislature, March 11, said among other things:—"I am pleased to know that the Valley Railway has been completed to Westfield, and is being operated by the Canadian National Rys., to St. John. The completion of the railway will not only prove a great convenience and avenue of trade to the people along its whole length from Westfield to Centreville, but will afford another entrance from the west to St. John, one of Canada's winter ports. In view of the heavy burden imposed upon the people to build this railway, it is a matter for sincere congratulation that the government has been able, by reason of the lowered price in the English market of its guaranteed debenture stock and the rate of exchange prevailing, to purchase and cancel such a portion of the outstanding stock as to effect a considerable reduction in the liability for the construction of this road."

A delegation from the Centreville-Grand Falls district waited on the New Brunswick Government at Fredericton, recently, and asked that the extension of the line from Centreville be built as planned originally. The delegation is reported to have been advised that the Dominion subsidy for the portion of the projected extension between Grand Falls and Andover had lapsed or been cancelled in 1912, and that the only funds now available out of the guaranteed bonds in the hands of the Prudential Trust Co., Montreal, amount to $20,000 a mile for about 12 miles of line. The estimated cost of the line from Centreville to Andover, 23 miles, is $50,000 a mile. (Jan., pg. 18).

**Timiskaming and Northern Ontario Ry.**—A press report states that the T. and N.O.R. Commission has bought 40 acres of land adjoining Liskeard station and will use part of it as the site for freight sheds to be built this year.

A deputation from Parry Sound waited on the Ontario Government recently and urged that consideration be given to a project for extending the T. and N.O.R. from North Bay to Parry Sound. Two routes were suggested, one of 77.5 miles and the other 81 miles. The premier is reported to have informed the deputation that consideration would be given the matter when the price of labor and construction material became less prohibitive, and other conditions more favorable. (Nov., 1919, pg. 603.)

**Timiskaming District**—At the opening of the Quebec Legislature's recent session the Lieutenant Governor said: "A railway in the Timiskaming region has become a necessity and my government is taking steps to secure its construction." The building of a line into this region has been discussed for several years past, and several projects have been initiated for the construction of a railway along the Ottawa and Des Quinze River valleys, the most important one being that promoted by the Interprovincial and James Bay Ry. Co., under C.P.R. auspices. The Quebec Legislature offered subsidies in aid of the construction of such a line, but until the present time the conditions have not warranted its construction. The M. J. O'Brien interests have now projected the development of the Des Quinze falls for power purposes, and the construction there of a large pulp and paper mill, thus rendering railway connection necessary. The Nipissing Central Ry. (electric), owned by the Ontario Government and opedated by the Timiskaming and Northern Ontario Ry. Commission, has a Dominion charter to build a line into this territory, and proposals are reported to be already under consideration for building an extension from Liskeard, Ont. Such a line, however, would not serve the large area of Quebec Province, lying east of Lake Timiskaming, which would be opened up by the Interprovincial and James Bay Ry., or any of the Quebec chartered companies which had proposed to build into the territory.

The Quebec Legislature, following up the intimation quoted above, has granted a subsidy of $1,600 a mile to the C.P.R. towards the building of 66 miles of railway, either from the terminus of the branch line from Mattawa, at Timiskaming, or Lumsdens Mills, as it was called formerly, or from Kipawa, a branch of this line, northeasterly by way of Ville Marie, to the Des Quinze River. Provision is made in the act for the payment of a further cash subsidy at the rate of $6,400 a mile for the construction of this railway, in the event of the Dominion Parliament not voting a subsidy for its construction.

**Toronto, Hamilton and Buffalo Ry.**—The Board of Railway Commissioners has authorized the rebuilding of a bridge over the main line at Hamilton, Ont. (Jan., pg. 18).

**Wabash Rd.**—A press report states that owing to increasing traffic, the Wabash Rd. will build a second track between Welland and Bridgeburg, Ont. The Wabash Rd. does not own any track in Canada, but operates under lease the Grand Trunk air line from the Niagara River to the Detroit River.

## United States Railway Notes.

The Director General of the U.S. Railroad Administration announced, March 3, that the condition of the money market for several months had not been such as to warrant the carrying through of the National Equipment Corporation's plan, which was proposed before the railways were returned to private control.

The United States second assistant Postmaster General is reported to have stated recently that the aerial mail service is not costing the country anything, but is saving the people more than $100,000 a year, that it costs considerably less than $400,000 a year to operate a 1,500 lb. mail capacity airplane one round trip daily between New York and Chicago, and by establishment of such a schedule, the Post Office Department has been able to discontinue nearly $500,000 worth of railway distributing space and clerical hire.

**The Capreol, Ont., Railway Y. M. C. A.** Building under construction by the Canadian National Rys., was destroyed by fire Feb. 29, the damage being estimated at about $75,000. We are advised that the building was well advanced to completion, and that rebuilding has been started. An illustrated description of the building was given in Canadian Railway and Marine World for February.

**Canadian National Railway Organization**—The Minister of Railways stated in the House of Commons, Mar. 15, that no action had been taken in the direction of the organization provided for by the National Railway Corporation Act. The government has been waiting until it could be decided what action could be taken in connection with the Grand Trunk Ry. System, so that in forming the organization the government could take into consideration all the railways that go to make up the Canadian National Rys. System.

# Mainly About Railway People Throughout Canada.

J. R. W. Ambrose, Chief Engineer, Toronto Terminals Ry., has been elected Chairman American Railway Engineering Association's Roadway Committee, of which he has been a member since 1910, and of a subcommittee of which he was Chairman in 1915, 1916 and 1917.

George Bradshaw, who was Supervisor of Safety under the U.S. Railroad Administration at Detroit, Mich., has, on the return of the railways to their owning companies entered Pere Marquette Rd's service. He was born at Franklin, Ky., Sept. 12, 1873, and entered railway service Nov. 17, 1902, since when he has been, to May 1, 1909 Assistant Claim Agent, Chicago & North Western Ry., Chicago, Ill.; May 1, 1909, to Mar. 16, 1913, General Safety Agent, New York Central Lines, New York, N.Y.; Aug. 16, 1913, to Sept. 21, 1918, Safety Engineer, G.T.R. and Grand Trunk Pacific Ry., Montreal, Winnipeg and Toronto; Oct. 1918 to Mar. 1, 1920, Supervisor of Safety, U.S.R.S., Detroit, Mich.

Sir George McLaren Brown, European General Manager, C. P. R., London, Eng., arrived in Canada, Mar. 8, on a business trip.

Lt. Col. Botsford Busteed, K.C., who died in Montreal Mar. 24, aged 63, was a brother of F. F. Busteed, C.E., Vancouver, B.C.

H. C. Butler has been apointed Manager, Montreal Locomotive Works, succeeding D. W. Fraser, appointed Vice President in charge of sales, American Locomotive Co., and Montreal Locomotive Works, at New York, N.Y.

Henry J. Cambie, Special Asistant Engineer, C.P.R. and Chief Engineer, Esquimalt and Nanaimo Ry., Vancouver, B.C., who retired from active service Mar. 15, was born in County Tipperary, Ireland, Oct. 25, 1836, and on Sept. 1, 1852 entered the office of Walter Shanly, Chief Engineer, Toronto and Guelph Ry., which was absorbed by the G.T.R. in 1853. From 1853 to 1859 he held various positions with C. S. Gzowski & Co., contractors for the western portions of the G.T.R.; from 1860 to 1862 he was engaged in land surveys and explorations in Ontario, 1863 to 1866 engaged with Sandford Fleming in surveys, exploration and preliminary surveys, Intercolonial Ry.; 1867 to 1869 in charge of location and construction, Windsor and Annapolis Ry.; 1870 to 1873 Division Engineer, Intercolonial Ry., Metis, Que.; 1874 to 1875, Division Engineer, government surveys, C.P.R. in British Columbia, and during this period, with John Trutch, made explorations across the Cascade Mountains by the Similkameen and Tulameen Valleys; 1876 to 1879 in charge of government surveys, C.P.R., in British Columbia, and conducted exploration from Port Simpson by way of the Skeena River, Lakes Babine and Stewart and Peace and Pine River Passes to Lower Slave Lake, also location survey from Yellowhead Pass to Burrard Inlet, and reported on the route by the Thompson and Fraser Rivers, with reference to the comparative advantages of that route and the line to Bute Inlet; 1880 to 1883 in charge of government construction, C.P.R. in Fraser River canyons; 1884 to 1885 in charge of C.P.R. construction Savona, Shuswap and Kamloops, B.C.; 1886 to 1904 Division Engineer, in charge on main line and branches in British Columbia, C.P.R., Vancouver; 1905 to 1907 in charge of construction of Nicola Valley and Similkameen Ry. (C.P.R. branch) Vancouver, and from 1908 to Mar. 15, 1920, Special Assistant Engineer, C.P.R. and Chief Engineer, Esquimalt and Nanaimo Ry., Vancouver.

J. E. Dalrymple, Vice President, (Traffic) G.T.R., Montreal, and Mrs. Dalrymple, visited Algonquin Park, Ont., in March.

W. R. Davidson, who has been appointed General Superintendent, Western Lines, G. T. R., Chicago, Ill., was born at Everton, Mo., Nov. 8, 1871, and entered railway service in Jan. 1890, since when he has been, to July, 1901, operator, Missouri Pacific Ry., at various points; July, 1901, to Mar., 1904, dispatcher, same road, Wichita Kan.; Mar. to Oct., 1904, Chief Dispatcher, same road, Wichita, Kan.; Oct., 1904, to Mar., 1911, Trainmaster same road,

W. R. Davidson,
General Superintendent, Western Lines, Grand Trunk Railway.

Wichita, Kan.; Mar., 1911, to Feb., 1913, Trainmaster, G. T. R., London, Ont.; Feb., 1913, to Mar., 1916, Superintendent G. T. R., London, Ont.; Mar., 1916, to Sept., 1917, Superintendent, G. T. R., Detroit, Mich.; Sept., 1917, to May 1, 1918, General Superintendent, Western Lines, G. T. R., Chicago, Ill.; May 1, 1918, to Mar. 1, 1920, General Superintendent, Eastern Lines, G. T. R., Montreal.

H. G. Dring, European Passenger Manager, C. P. R., London, Eng., arrived in Canada, Mar. 8, on a business trip.

B. J. Farr, who has been appointed Superintendent Motive Power and Car Department, Western Lines, G. T. R., Battle Creek, Mich., was born at Elenburg, N. Y., Sept. 8, 1876, and entered railway service in 1893, since when he has been, to 1898, machinist apprentice, Central Vermont Ry., St. Albans, Vt.; 1898 to 1900, Erecting Shop Foreman, same road, St. Albans, Vt.; 1900 to 1905, General Foreman, same road, St. Albans, Vt.; 1905 to 1906, General Foreman, Motive Power and Car Department, Delaware & Hudson Co., Schenectady, N. Y.; 1906 to 1908, Master Mechanic, Motive Power and Car Department, United Fruit Co., Port Limon, Costa Rica; 1908 to 1914, Engineering Department, Panama Canal, Gatun and Cristobel, Panama; 1914 to 1916, General Foreman, G. T. R., Battle Creek, Mich.; 1916 to Oct., 1918, Master Mechanic, G. T. R., Battle Creek, Mich.; Oct., 1918, to Mar. 1, 1920, Superintendent, Motive Power and Car Department, Grand Trunk Western Lines Rd., (U.S.R.A.), Detroit, Mich.

Robert H. Fish, whose appointment as General Superintendent, Eastern Lines, G.T.R., Montreal, was announced in our last issue, was born at Oakville, Ont., in 1871, and entered G.T.R. service in 1890, since when he has been, to 1900, locomotive fireman; 1900 to Oct. 1, 1908, locomotive man; Oct. 1, 1908, to Jan. 23, 23, 1913, Road Foreman of Locomotives, London, Ont.; Jan. 23, 1913, to Nov. 14, 1916, Trainmaster, Districts 20 and 21, Ontario Lines, Brantford, Ont.; Nov. 14, 1916 to March 1, 1920, Superintendent, Stratford Division, Ontario Lines, Stratford, Ont.

T. J. Gracey, whose appointment as Assistant Auditor of Disbursements, Canadian Northern Ry. System, Toronto, was announced in our last issue, was born at Kingston, Ont., Mar. 21, 1889, and entered railway service Feb. 8, 1906, since when he has been, to June 1, 1915, stenographer and clerk, chief clerk, and superintendent's accountant, Timiskaming and Northern Ontario Ry., North Bay, Ont.; June 1, 1915, to Feb. 16, 1920, Auditor of Disbursements and accountant, same road, Toronto.

D. B. Hanna, President Canadian National Rys., adressed Ottawa Board of Trade Mar. 6, and spoke at Brockville, Ont., Mar. 8, and Kingston, Ont., Mar 9.

Louis Kossuth Jones, I.S.O., Assistant Deputy Minister of Railways and Canals, Ottawa, retired on superannuation, Mar. 31, after 50 years government service. He was born at Cobourg, Ont., June 9, 1849, and educated at Trinity College School, Weston, Ont., and Trinity College University, Toronto. He entered government service as clerk to the Secretary of the Canal Commission, in Mar. 1870, and joined the staff of the District Engineer on the construction of the Intercolonial Ry. in the Miramichi District, Newcastle, N.B., in 1871. In 1874 he was appointed Secretary to Collingwood Schreiber on the latter's appointment as Chief Engineer, Intercolonial Ry., with headquarters at Ottawa, and remained in that position until the completion of the road, continuing with Mr. Schreiber on the latter's appointment as Chief Engineer and General Manager of Government railways, and from 1879, on Mr. Schreiber's additional appointment as Chief Engineer on construction of the C.P.R., during the building of a portion of the road by the government, he was assistant to the Chief Engineer and General Manager, Government Railways. From 1893 to 1897 he was chief clerk, Department of Railways and Canals, and from 1897 to May, 1912, was Secretary; from May, 1912 to Dec., 1914 Assistant Deputy Minister and Secretary, and

from Jan. 1, 1915, to his retirement, Assistant Deputy Minister of that department. In 1882, in addition to his departmental duties, he was appointed Secretary of a board of commissioners named by Sir Charles Tupper, consisting of County Judge Clark, Cobourg, Ont., Chairman; F. Broughton, then General Manager, Great Western Ry., Hamilton, Ont., and Col. D'Arcy Boulton, Cobourg, Ont. to settle contractors' claims in connection with the construction of the Intercolonial Ry., and in 1887 was appointed Secretary to a board of arbitrators, consisting of Chancellor Boyd, Chairman; Thomas Keefer, C.E. for the C.P.R., and C. C. Gregory, for the Dominion Government, to investigate C.P.R. claims against the government in connection with the construction of the British Columbia section of that railway. The first meeting of the arbitrators was held in Feb., 1888, and a later meeting was held in Vancouver, B.C., in June 1888, the arbitration being continued until the summer of 1891, when the award was made. The counsel engaged in the arbitration for the C.P.R. were Edward Blake, Walter Cassels, G. F. Blackstock, and ex-Judge Clark; and for the government, Christopher Robinson, R. B. Osler and W. D. Hogg.

**Orange Jull**, inventor of the rotary snow plough, died in Toronto, Mar. 15, aged 75.

**Sir Hormidas Laporte**, one of the Canadian National Rys. directors, has been elected chairman of Montreal's charter commission, which has been formed to draw up a charter containing all necessary provisions for assuring the peace of the city and its good government by the ratepayers.

**R. S. Logan**, Vice President (Land Tax & Claims) G.T.R., and Mrs. Logan, have returned to Montreal, after spending a month in the south.

**Francis Frederick William Lowle**, whose appointment as Local Freight Agent, C.P.R., Edmonton, Alta., was announced in a recent issue, was born in Gloucestershire, Eng., May 20, 1876, and entered railway service in Mar. 1891, serving to Mar. 1903 in various capacities in the Freight Department, Midland, Ry., at London and Birmingham, Eng.; May 1903 to June 1904, farming in Manitoba; June to Dec. 1904, clerk in Claims Department, C.P.R., Winnipeg; Dec. 1904 to Jan. 1905, clerk, Baltimore & Ohio Rd., Chicago, Ill.; Jan. to May 1905, statistical clerk, Audit Department, Chicago and Eastern Illinois Rd. Chicago, Ill.; July 1905 to June 1906, clerk in wharf freight office, and assistant purser on coast steamships, C.P.R., Victoria, B.C.; June 1906 to July 1907, assistant agent, C.P.R., Skagway, Alaska; July 1907 to June 1916, Freight and Passenger Agent, C.P.R., Skagway, Alaska; June 1916 to Oct. 1919, General Agent, Alaska and Yukon, C.P.R., Juneau, Alaska, and from Mar. 1919, he also acted as British Vice Consul for Alaska.

**F. S. Macdonald**, Superintendent, North Shore Section, Pacific Great Eastern Ry., and brother of G. E. Macdonald, General Manager, P.G.E.R., who has resigned that position, died at Vancouver, B.C., Mar. 11, aged 38, from pneumonia, after a short illness. He was born in Nova Scotia, and went to British Columbia at the age of 18, as telegraph operator on the C.P.R., and was later engaged as an engineer on the construction of the Pacific Great Eastern Ry., being later appointed agent of that road at Squamish, in charge of construction there.

**Capt. Robert McKillop**, who has been appointed Superintendent, London Division, Ontario District, C.P.R., London, Ont., was born at Perth, Scotland, Dec. 26 1884 and entered C.P.R. service June 22 1905, since when he has been, to Apr. 1, 1922, draftsman, in Chief Engineer's office, Montreal; Apr. 1, 1812, to Feb. 8, 1915 Assistant Engineer in charge of Building Department; Feb. 8 to Dec. 13, 1915, Division Engineer, Eastern Division, Montreal; Dec. 13, 1915 to June 12, 1916, Superintendent, District 2, Atlantic Division, Woodstock, N.B.; June 12, 1916 to Feb. 28, 1917, Superintendent, District 3, Eastern Division, now Laurentian Division, Quebec District, Montreal. On Feb. 28, 1917, he was granted leave of absence, to take command of the 2nd Section Skilled Railway Employes, and went overseas Apr. 16, 1917, returning May 22, 1919, demobilized May 22, 1919, and transferred to the general list of officers, the C.P.R. granting him an additional six months leave of absence. From Nov. 1, 1919, he has been acting as relieving Superintendent at various points.

J. D. McDonald,
General Passenger Agent, Western Lines, Grand Trunk Railway.

**Malcolm McMillan**, President, McMillan Bros., Ltd., Railway Contractors, died at Winnipeg General Hospital, Mar. 21, after a long illness. He was born in Bruce County, Ont., 1861, and had lived in Winnipeg for about 40 years.

**A. B. McNaughton**, who has been appointed Superintendent, Portland Division, G.T.R., Portland, Me., was born at Arnprior, Ont., Nov. 10, 1877 and entered transportation service in 1893 in the Canada Atlantic Ry. telegraph department and was, from 1894 to 1907, brakeman and freight and passenger conductor, same road; Nov. 1, 1907, to Dec. 3, 1918, General Yardmaster, G.T.R., Ottawa, Ont., Dec. 3, 1918 to Mar. 1, 1920, Superintendent, Grand Trunk Railway Lines in New England (U.S.R.A.), Portland, Me.

**Hector King Morrison**, who has been appointed Division Engineer, Montreal Division, Quebec District, Canadian National Rys., Montreal, was born at Dartmouth, N.S., Oct. 12, 1885, and entered railway service in 1903 since when he has been, to 1904, chairman, Halifax and Southwestern Ry.; 1904 to 1905, rodman, same road; 1905 to 1906, topographer, Canadian Northern Quebec Ry.; 1906 to 1907, levelman, Canadian Northern Ontario Ry.; 1907 to 1910, transitman, same road; 1910 to 1912 in charge of location party, same road; 1912 to 1914 Resident Engineer, same road, Pembroke, Ont.; Jan. to June 16, 1919, Resident Engineer, Canadian National Rys., Hornepayne, Ont. June 16, 1919, to Mar. 1, 1920, Division Engineer, Superior Division, Canadian National Rys., Hornepayne, Ont.

**P. B. Motley**, Engineer of Bridges, C.P.R., Montreal, addressed the Delphic Club, there, Mar. 5, on the problems overcome in building a railway across the North American continent.

**Charles G. Orttenberger**, whose appointment as General Agent, Passenger Department, G.T.R., Chicago, Ill., was announced in our last issue, was born at Port Huron, Mich., Jan. 21, 1869, and entered G.T.R. service in Dec. 1884, since when he has been to May 1889 clerk, Port Huron, Mich.; May 1889 to Feb. 1896 in Audit Department, Detroit, Mich.; Feb. 1896 to April 1907 chief clerk, city ticket office, Chicago, Ill.; April 1909 to Oct. 1918, City Passenger and Ticket Agent, Chicago; Nov. 1919 to Mar. 1, 1920, General Agent, Passenger Department, Grand Trunk Western Lines Rd (U.S.R.A.) Chicago.

**H. S. Osborne**, formerly Works Manager, Angus Shops, C.P.R., Montreal, died at Montreal, Mar. 17, after a short illness. He was born at Sevenoaks, Kent., Eng., in 1859, and came to Canada in 1880, when he entered railway service in the G.T.R., Point St. Charles shops, Montreal, and transferred to C.P.R. service soon after the organization of that company. He was for some time engaged at the company's Delormier Ave. shops, Montreal, and was transferred to the Angus shops when they were built, and was eventually appointed Works Manager there, holding that position until his retirement from active service about a year ago. He was buried at Mount Royal cemetery.

**E. J. Owens**, heretofore office engineer St. John and Quebec Ry., has been appointed engineer of the New Brunswick Public Works Department's highway division, and will continue to act in a similar capacity for the St. J. & Q.R.

**Dwight W. Pardee**, Secretary, New York Central Rd., and many of its subsidiary companies, including Canada Southern Ry., died at Westfield, N.J., recently, after a long illness.

**F. W. Peters**, General Superintendent, British Columbia District, C.P.R., Vancouver, B.C., has been elected President of the Shaughnessy Golf Club.

**Williams Phillips**, whose appointment as European Manager, Canadian National Rys., and Canadian Government Merchant Marine, Ltd., London, Eng., was announced in our last issue, was born at Toronto, Jan. 31, 1870, and entered transportation service Apr. 1886, since when he has been, to Mar. 31, 1896, in G.T.R. offices, Toronto; Apr. 1, 1896, to Feb. 28, 1902, Northwest Agent, Northwest Transportation Co., Winnipeg; for a portion of this time he was also General Agent, Chicago Great West-

ern Ry., and from Apr. 1, 1900, also Northwest Agent, Northern Navigation Co.; Mar. 1, 1902, to May, 1911, General Eastern Agent, C.N.R., Toronto, in Nov. 1906, he was also appointed General Freight and Passenger Agent, Canadian Northern Ontario Ry., and in Apr. 1910, also acting Traffic Manager, Canadian Northern Steamships, Ltd., and in April 1911, his last position was changed to General Freight and Passenger Agent, Canadian Northern Steamships, Ltd.; May 1911, to May 1912, he was General Freight Agent Canadian Northern Ontario Ry., Central Ontario Ry., Bay of Quinte Ry., Irondale, Bancroft & Ottawa Ry., and Niagara, St. Catharines & Toronto Ry. and Navigation Cos., and also General Freight and Passenger Agent, Canadian Northern Steamships, Ltd.; May 1912, to Nov. 1914, European Traffic Manager, C.N.R., London, Eng., and from Nov. 1914, until the absorption of Canadian Northern Steamships, Ltd., by the Cunard Steamship Co., European Railway and Steamship Manager, C.N.R., and Canadian Northern Steamships, Ltd.; Nov. to Dec. 1916, Freight Traffic Manager, Eastern Lines, Canadian Northern Ry., Toronto; Jan. 1, 1917 to Mar. 1, 1920, Canadian Representative, Cunard Steamship Co., and drector Robert Reford Co., Montreal. After spending some little time in Toronto consulting with the C.N.R. management in connection with his new duties, Mr. Phillips sailed from New York on the s.s. Mauretania, Mar. 23, to take over his new duties. His office will be at Orient House, London.

H. W. Ploss, whose appointment as Commercial Agent, G.T.R., Milwaukee, Wis., was announced in our last issue, entered railway service in Aug. 1889, since when he has been, to Oct. 1891 clerk, G.T.R., Chicago, Ill.; 1891 to 1893 Soliciting Freight Agent, West Shore Line and Reading Despatch, Chicago, Ill.; Nov. 1, 1900 to July 1, 1909 Contracting Freight Agent, G.T.R., Milwaukee, Wis.; also from Mar. 19, 1906, to July 1, 1909, Agent, Reading Despatch, Milwaukee, Wis., and also acting as Agent of the Milwaukee and Michigan lines Grand Trunk Despatch and Northern Express lines; July 1, 1909 to Mar. 1, 1919, Commercial Agent, G.T.R. Milwaukee, Wis.; Mar. 1, 1919 to Mar. 1, 1920, General Agent Freight Department, Grand Trunk Western Lines Rd. (U.S.R.A.) Milwaukee, Wis. He is President of the Milwaukee Traffic Club, and was also for a number of years, Chairman of the Milwaukee Freight Committee until its dissolution, when the U.S.R.A. assumed control of the railways.

**Mrs. Alfred Price**, wife of the General Manager, Eastern Lines, C.P.R., Montreal, died there recently after a long illness.

**Bernard Joseph Quilty**, whose appointment as Trainmaster, C.P.R., McAdam, N.B., was announced in our last issue, was born at St. John, N.B., Nov. 1, 1878, and entered C.P.R. service in December 1896 and has been, to Dec. 1905 Trainmaster; Dec. 1905 to Nov. 1918, conductor; Nov. 1918 to Feb. 1920, Yardmaster, Fairville, N.B.

**John M. Riddell**, General Agent, G.T.R., Portland, Me., died Mar. 10, at Westmount Que., on his 71st birthday, after a long illness. He was born at Port Dover Ont., and entered railway service in 1874 with the Port Dover and Lake Huron Ry., now part of the G.T.R.. He was for some time agent at Woodstock and Stratford, Ont., and in 1882 was appointed Assistant Superintendent, Stratford Division, and later, Assistant Superintendent at Toronto, Belleville and Montreal successively. In 1896 he was appointed Freight Agent at Montreal, and in 1907 was transferred to Portland, Me., where he had charge of import and export freight, and held that appointment until his death. G. T. Riddell, of the G.T.R., and C. P. Riddell, Secretary Railway Association of Canada, are sons. He was buried at Westmount.

**Hon. Walter Rollo**, Ontario Minister of Labor, has been appointed Chairman of the Ontario Legislature's railways committee.

**H. R. Safford**, who has been appointed Assistant to President, Chicago, Burlington and Quincy Rd., Colorado and Southern Lines, etc., Chicago, Ill., was born at Madison, Ind., in 1875 and prior to graduation in civil engineering from Purdue University in 1895 was engaged with an engineering corps operating on the Pennsylvania lines immediately west of Pittsburg, Pa. In 1895 he entered Illinois Central Rd. service, remaining

**William Phillips,**
European Manager, Canadian National Railways and Canadian Government Merchant Marine, Ltd.

with it until May, 1910, and holding the following positions: 1895, rodman; 1896 to 1897, Resident Engineer; 1897 to 1900, Assistant Engineer; 1900 to 1901, Roadmaster, Amboy Division; 1901, Roadmaster, Freeport Division; 1902, Roadmaster, St. Louis Division; 1903 to 1905, Principal Assistant Engineer; 1905 to 1907, Assistant Chief Engineer; 1907 to 1910, Chief Engineer, Maintenance of Way; 1910 to Oct. 1911, not in railway service; Oct. 1911 to Sept. 1918, Chief Engineer, G.T.R., Montreal; Sept. 1918 to Mar. 1, 1920, Engineering Assistant, Central Western Region, U.S. Railroad Administration, Chicago, Ill.

**W. H. Spicer**, whose appointment as Assistant General Freight Agent, Western Lines, G.T.R., Detroit, Mich., was announced in our last issue, was born at Montreal, Sept. 29 1871, and entered railway service Nov. 1, 1890, since when he has been to May 1, 1896 Travelling Car Agent, Western Lines, G.T.R., Detroit, Mich.; May 1 to July 1, 1896, Travelling Car Agent G.T.R., Montreal; July 1, 1896 to Jan. 1, 1898, Travelling Car Agent, G.T.R., Portland, Me.; Jan. 1 1898 to Mar. 1, 1910, Travelling Car Agent; G.T.R., Boston, Mass.; Mar. 1, 1901 to Apr. 1, 1902, Agent, National Despatch-Great Eastern Fast Freight Line, Battle Creek, Mich.; Apr. 1, 1902 to Mar. 2, 1905, chief clerk, General Freight Department Western Lines, G.T.R., Chicago, Ill.; Mar. 1 1905 to July 1, 1909, Agent Lackawanna-Grand Trunk Fast Freight Line, Milwaukee, Wis.; July 1, 1909 to Dec. 1, 1912, Commecial Agent, G.T.R., Detroit, Mich.; Dec. 1, 1912 to July 1 1918, Division Freight Agent, G.T.R., Detroit Mich.; July 1, 1918 to May 1, 1919, Division Freight Agent, Grand Trunk Western Lines Rd. (U.S. R.A.); May 1, 1919 to Mar. 1, 1920, Assistant General Freight Agent, G.T.W. L.R., (U.S.R.A.) Detroit, Mich.

**H. E. Suckling**, Treasurer, C.P.R., Montreal, while being driven to the Toronto union station, Mar. 13, in company with E. Alexander, Secretary; G. Hodge, Assistant to Vice President, Eastern Lines, and E. P. Flintoft, Assistant General Solicitor, after having attended the company's annual dinner, was slightly injured when the automobile collided with a street car.

**R. D. Waugh**, Chairman, Greater Winnipeg Water District Commission, which operates the Greater Winnipeg Water District Ry., has been appointed by the Council of the League of Nations, as a member of the board to investigate damage done during the war in the Saar district in France.

**Barton Wheelwright**, who has been appointed Engineer Maintenance of Way, Portland Division, Eastern Lines, G.T.R., Portland, Me., was born at Minneapolis, Minn., Mar. 12, 1888, and entered G.T.R. service July 1, 1911, since when he has been, to Mar. 1, 1912, draftsman on grade separation, Toronto; Mar. 1, 1912 to Dec. 1, 1914, Block Signal Inspector, Montreal; Dec. 1, 1914, to Jan. 14, 1916, Assistant Signal Engineer, Montreal; and from Jan. 14, 1916 acting Signal Engineer.

**H. H. Williams**, who has retired from business after 43 years work, has attended to C.P.R. real estate matters in Toronto for several years, including purchase of right of way for freight terminals, the North Toronto station site, and the renting of the office building at King and Yonge Sts.

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**Presentation to Wm. Phillips.** On the eve of leaving for London, Eng., to take up his duties as European Manager Canadian National Rys. and Canadian Government Merchant Marine, Ltd., William Phillips was the recipient of a handsome leather travelling case fitted with silver, from a number of shipping friends in Montreal. The inscription within the case read: "Presented to Wm. Phillips, by a few of his shipping friends, as a token of esteem and respect on the occasion of his leaving Canada for England." The shipping people who subscribed to the presentation included the Hon. L. C. Webster, W. I. Gear, P. A. Curry, W. F. Forbes and Thomas Robb; J. T. Walsh, W. G. Annable, J. B. Binning, D. W. Campbell, W. A. Coates, H. W. Cowan, E. W. Foulds, A. E. Francis, Thos. Harling, A. M. Irwine, T. C. Lockwood, W. T. Marlow, E. J. McClure, J. W. Nicoll, R. B. Teakle, Leo H. Tobin.

# Canadian Pacific Railway Construction, Betterments, Etc.

St. John, N. B. Bridge—A press report of Mar. 9, stated that work on the foundations of the new railway bridge across the St. John River at the Reversible Falls, St. John, would be started within the next few weeks, and that it is expected to have the bridge ready for traffic in the summer of 1921. While the general location of the bridge has been decided upon, the location of the main piers has not yet been definitely settled, as the borings to establish the nature of the rock bottom are not completed. The main span will be of the cantilever type, and of approximately the same length and height as the present bridge, while the 480 ft. western approach will be of concrete construction instead of steel, as is the present approach. The boring tests of the foundations, a press report states, being made by the Foundation Co., Montreal.

Interprovincial and James Bay Ry.—In connection with the subsidy of $1,600 a mile, and the special subsidy of $6,400 a mile (the latter subsidy being payable in the event of the Dominion Government declining to grant any subsidy), voted by the Quebec Legislature in aid of the construction of a line from Timiskaming or Kipawa, Que., via Ville Marie to the Des Quinze River Falls, we are officially advised that the C.P.R. has already built a line from Kipawa to mile 10, Mercier Y., and has completed surveys to the crossing of the Kipawa River. A survey party in charge of W. H. Roberts, Assistant Engineer, is in the field locating a route for the line from the Kipawa River to the Des Quinze River at approximately mile 66 from Kipawa.

London to Sarnia, Ont.—A Sarnia, Ont., press report of Mar. 9, stated that it was expected that E. W. Beatty, President, and other C. P. R. officers would visit London, Sarnia and intervening points at the end of April or early in May, to look over the ground with a view to building a line from London to Sarnia.

Saskatchewan Branch Line—A press report states that it is planned to start construction this year on an extension of the Wilkie-Cutknife Branch, from the latter place, northwesterly, and also on a line from Coronation to Empress, on the Saskatchewan-Alberta boundary.

The Board of Railway Commissioners has approved revised general location of the Leader Southeasterly Branch, Sask., mile 29 to 50.1, and general location from mile 88 to 153.6.

One of the branch lines, for the building of which extensions of time and other powers are being asked from the Dominion Parliament, is projected from Asquith northwesterly to Tp. 42, Range 20 west 3rd meridian, Sask., at Cloan, mile 14 on the Wilkie-Cutknife branch. Protests are being made by Battleford residents against this line, on the ground that when power was originally obtained to built a line from Asquith northwesterly, Battleford was mentioned as the terminus, and no change was made in this regard when extensions of time were granted in 1912 and 1915.

Weyburn-Sterling Line—Application is being made to the Dominion Parliament for an extension of time for the completion of the Weyburn-Sterling line, which is now in operation to Manyberries, Alta., from the west, and to the Alberta-Saskatchewan boundary at Altawan from the east, leaving a gap of about 37 miles to be built. We are officially advised that tenders will be invited for the grading on this mileage very shortly, but that owing to labor conditions it is not expected to complete more than half the work this year, and to complete the balance probably in 1921.

Alberta Branch Lines—The Board of Railway Commissioners has approved the route map for a branch line from Pashler, Alta., 15 miles east of Medicine Hat, on the main transcontinental line, northeastrly, mile 0 to 109.3.

A press report states that construction has been in progress all winter on the line from Acme, easterly via Drumheller to Empress, Alta., and that it is expected to have the Acme-Drumheller section completed this year. This section is 37 miles long, and grading was reported to be 22% completed at the end of 1919. The grading is being done by the John W. Stewart Construction Co., Vancouver, B. C.

Lethbridge Division Bridges — The Board of Railway Commissioners has authorized the rebuilding of bridges at mile 2.3 Taber subdivision, and at mile 45.5 Crowsnest Subdivision, Lethbridge Division, Albert District.

Connaught Tunnel—A Dominion order-in-Council, was passed Mar. 5, granting the company the surface rights over the Connaught tunnel and the right of way of the approaches thereto, from mile 75.75 to 87.51, Mountain Subdivision, British Columbia District, subject to certain reservations. The C. P. R. has surrendered to the Crown the right of way on the original route of that section of the railway, which was used prior to the building of the tunnel.

Vancouver Pier—A press report states that work was expected to be started on Mar. 8 on the dredging and filling of the site of the pier to be built between piers A. and D., Burrard Inlet, Vancouver. The Pacific Dredging Co., Vancouver, is reported to have the contract. (Mar. pg. 122.)

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Intercolonial and P.E.I. Rys. Provident Fund—The Minister of Railways stated in the House of Commons, Mar. 17, that the Railways Department contributed $100,000 during the year ended Mar. 31, 1919, to the Intercolonial and Prince Edward Island Rys. Provident Fund. The number of employes entitled to participate in the fund in 1919 was 12,223, and the average amount contributed by the men was $8.18.

Railway Bridge Across St. John Harbor—At a meeting of St. John, N.B.. City Council, Mar. 9, a suggestion was made that the C. P. R. instead of rebuilding its bridge at the Reversible Falls, should put the money into a bridge across the harbor. The mayor stated that the question of the building of a railway bridge across the harbor had been discussed with D. B. Hanna, President Canadian National Rys. Mr. Hanna informed him that while the C.N.R. would like to make use of the facilities on the west side at times, but it had no interest in a project which would place it under tribute to any other railway.

## Freight and Passenger Traffic Notes.

The Pere Marquette Rd. district freight office at London, Ont., will, a press report states, be closed, and the staff moved to Walkerville, Ont.

Canadian passenger agents are reported to have discussed at a recent meeting the question of adding the differential on currency to prepaid charges for passenger tickets from Canadian grounds to the United States.

The C. P. R. shore line from St. John to St. Stephen, N. B., has not been operated, a press report says, since February, owing to snow and floods, until Mar. 16, when it was reopened between St. Stephen and St. George.

The Board of Railway Commissioners ordered recently that the increased rates on commutation tickets which railways proposed to put into effect Mar. 1, should not be put in operation until the conclusion of the investigation by the board.

The Minister of Railways stated in the House of Commons Mar. 17, that 14,273 passengers had been carried on the Quebec and Saguenay Ry., and that there was a deficit of $9,048.72 on the operation of the railway of from Oct. 1, 1919, to that date.

A new switching agreement is being negotiated between the railway companies entering Winnipeg, and the manufacturers and merchants. It was reported Mar. 5 that several points had been settled and that further conferences would be held to adjust the matters not agreed upon.

The Alberta and Great Waterways Ry., which is a branch of the Edmonton, Dunvegan and British Columbia Ry., has advised shippers that railway service on the line from Lac La Biche to navigable water near McMurray, Alta., will be discontinued April 1, and until such time as weather conditions warrant a resumption.

Travel Bureau, Ltd., has been incorporated under the Ontario Companies Act, with authorized capital of $10,000, and office in Hamilton, Ont., to buy and sell steamboat, railway and other tickets, foreign exchange, letters of credit for travellers and others, foreign money and securities, and to carry on a general brokerage business. The provisional directors are: H. A. Alwyn, J. P. Bell, M. C. Hart, M. W. Morton, and G. L. Williams, Hamilton, Ont.

A new schedule of cartage charges is reported to have been arranged for the collection and delivery of freight in Winnipeg, between the railway companies and of the Board of Trade Shippers' Bureau. The new charges were to become effective Mar. 15. Within what is known as the 'inner limits' they will be 5c per 100 lbs. on carloads and 7c on less than carloads, with a minimum of 35c. Beyond the inner limits the advanced rates will be 6c per 100 lbs. on carloads and 8c on less than carloads, with a minimum of 50c. On certain light and bulky articles the rates fixed are slightly higher.

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Taxi and Auto Transportation, Ltd., has been incorporated under the Quebec Companies Acts, with $95,000 authorized capital and office in Montreal, to carry on business as carriers of persons and things by means of automobiles, autotaxis, autobusses, drays, omnibusses and other vehicles throughout Quebec Province.

# Railway Rolling Stock Orders and Deliveries.

The Pacific Great Eastern Ry. has ordered three cabooses from Canadian Car and Foundry Co.

The Minneapolis, St. Paul and Sault Ste. Marie Ry. has ordered 500 box cars from Haskell and Barker Car Co.

Canadian Car and Foundry Co., between Feb. 15 and March 15, delivered 12 sleeping cars to Canadian National Rys., and 204 repaired box cars to the Grand Trunk Ry.

W. R. Smith, General Manager and Chief Engineer, Edmonton, Dunvegan and British Columbia Ry., is reported to have stated recently that the company was securing two more locomotives.

The C.P.R., between Feb. 13 and March 15, received 2 vans, 2 passenger locomotives, 2 freight locomotives, and 1 double track snow plough, from its Angus shops, Montreal.

Canadian National Rys., in addition to the working equipment mentioned in our last issue, has ordered 4 rail loaders, 3 15-ton coaling cranes with buckets, and 3 15-ton bridge cranes, with 35 ft. boom, from F. H. Hopkins and Co., Montreal.

The G.T.R. has ordered 10 8-wheel switching locomotives (0-8-0) from Canadian Locomotive Co., and is building 25 6-wheel switching locomotives (0-6-0) at its Montreal shops, the boilers for which will be built by Canadian Locomotive Co.

The Canadian National Rys. was stated, in Canadian Railway & Marine World for March, to have ordered two ¾ yd. Erie steam ditchers, from F. H. Hopkins & Co., Montreal. We are advised that the information furnshed us in this connection was erroneous, and that the order was for two ¾ yd. Marion ditchers.

The G.T.R. has asked tenders for the supply of 1,000 flat cars, 50 baggage and express cars, 15 express refrigerator cars and 10 express horse cars, for its Canadian lines; and for 3,000 automobile cars and 25 6-wheel switching locomotives (0-6-0), similar to those being built at it Montreal shops for use on its lines in the U.S., west of Detroit and St. Clair Rivers.

The C.P.R. sleeping cars, 18 of which have been ordered from National Steel Car Corporation, Hamilton, Ont., as announced in our last issue, will be 73½ ft. long over body corner posts, and will be built complete with body, frame, steel work and trucks by the Car Corporation, and the interior work will be completed by the C.P.R. at its Angus Shops, Montreal. The trucks will be of the 6-wheel type, with American Steel Foundries clasp brake, and Commonwealth cast steel frame. The bodies will be fitted with Westinghouse air brakes, and Miner friction draft gears and buffing device.

Canadian National Rys. 1,150 general purpose (coal) cars, ordered from Eastern Car Co., as announced in our last issue, will have the following general dimensions, etc.:

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|---|---|
| Length, inside | 36 ft. 4½ in. |
| Width, inside | 9 ft. 1¾ in. |
| Truck centers | 26 ft. |
| Wheel base | 5 ft. 6 in. |
| Weight | 44,400 lb. |
| Trucks | Arch bar |
| Journals | 5½ x 10 in. |
| Journal boxes | McCord |
| Side bearings | Miner balanced |
| Bolsters and brakebeams | Simplex |
| Brakebeam support | Creco 4 point |
| Door mechanism | Enterprise |
| Handbrake | Miner ideal |
| Draft gear | Cardwell friction |
| Couplers | Class D, 6 x 8 in. |
| Airbrakes | Westinghouse K.C., 10 x 12 in. |

The Canadian National Rys. improved Hart convertible ballast and general service cars, 350 of which have been ordered from the Hart-Otis Car Co., as mentioned in our last issue, will be of 50 tons capacity, and will have the following dimensions,—

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|---|---|
| Length over end sills | 36 ft. 8 in. |
| Width over side sills | 8 ft. 9 in. |
| Length inside as hopper car | 20 ft. 10 in. |
| Length inside as gondola car | 34 ft. 8 in. |
| Width inside | 8 ft. 8 in. |
| Width overall | 10 ft. 3¾ in. |
| Width at top | 9 ft. 9⅞ in. |
| Height from rail to top of floor | 4 ft. 4¼ in. |
| Height from rail to top of car | 8 ft. 4¼ in. |
| Height inside | 4 ft. |
| Truck centers | 26 ft. 8 in. |
| Wheel base of truck | 5 ft. 6 in. |
| Length of hopper door opening | 16 ft. 8½ in. |
| Width of hopper door opening | 2 ft. 1 in. |

The G.T.R. has ordered 25 light switching locomotive boilers from Canadian Locomotive Co. They are to be fitted with a smoke prevention device, and are to be applied to the 25 class F9 switching locomotives, which the G.T.R. is building at its Point St. Charles shops. Following are the chief details:

| | |
|---|---|
| Type | Radial stayed |
| Diar., front | 69 9/16 in. |
| Diar., largest | 76 in. |
| Firebox | 96⅞ x 75¼ |
| Tubes, no. and diar. | 178 2 in.—28 5¾ in. |
| Tubes, length | 12 ft. 4 in. |
| Heating surface, firebox | 168 sq. ft. |
| Heating surface, tubes | 1,168 sq. ft. |
| Heating surface, flues | 608.5 sq. ft. |
| Heating surface, arch tubes | 26 sq. ft. |
| Heating surface, total | 1,970.5 sq. ft. |
| Grate area | 50.60 sq. ft. |
| Staybolts | Brown's iron |

Canadian National Rys. 500 steel frame box cars ordered from Eastern Car Co., as announced in our last issue, will have the following general dimensions, etc.:

| | |
|---|---|
| Capacity | 40 tons |
| Length, inside | 36 ft. |
| Width, inside | 8 ft. 6½ in. |
| Truck centers | 26 ft. 10 in. |
| Wheel base | 5 ft. 6 in. |
| Weight | 41,500 lb. |
| Trucks | Arch bar |
| Journals | 5 x 9 in. |
| Journal boxes | McCord |
| Side bearings | Miner balanced |
| Bolsters and breakbeams | Simplex |
| Brakebeam support | Creco 4 point |
| Roof | Winslow improved, type B |
| Draft gear | Miner twin spring |
| Couplers | Class D, 6 x 8 in. |
| Airbrake | Westinghouse K.C., 8 x 12 in. |
| Door fixtures | Camel |

Canadian National Rys. 6 all steel snow ploughs ordered from Eastern Car Co., as mentioned in our last issue, will have inside lining of wood, and side wings, front cutters and ice cutters will be operated by air from the cupola. Following are the chief details:

| | |
|---|---|
| Length, inside | 19 ft. 3⅝ in. |
| Width, inside | 18 ft. 1 in. |
| Truck centers | 18 ft. |
| Wheel base, front truck | 4 ft. 2 in. |
| Wheel base, rear truck | 5 ft. 3 in. |
| Weight | 63,800 lb. |
| Front truck, type | 40 ton arch bar |
| Rear truck, type | 30 ton arch bar |
| Journal boxes | McCord |
| Bolsters and brakebeams | Simplex |
| Side bearings | Laughlin |
| Headlight | Pyle National |
| Draft gear | Keyed yoke |
| Couplers, rear | Class D, 6 x 8 in. |
| Couplers, front | Pilot |

The G.T.R. has ordered 10 eight-wheel switching locomotives (0-8-0) from Canadian Locomotive Co. Following are the chief details:

| | |
|---|---|
| Weight in working order | 240,000 lb. |
| Wheel base of engine | 15 ft. 6 in. |
| Wheel base, engine and tender | 50 ft. 6½ in. |
| Heating surface, firebox | 235 sq. ft. |
| Heating surface, tubes | 2,497 sq. ft. |
| Heating surface, total | 2,732 sq. ft. |
| Driving wheel, diar. | 56 in. |
| Driving wheel, centers | Cast steel |
| Driving journals, diar. and length | 11 x 20 and 10 x 13 in. |
| Cylinders, diar. and stroke | 26 x 30 in. |
| Boiler, type | Radial stayed |
| Boiler, pressure | 170 lb. |
| Tubes, no. and diar. | 228 2 in. and 32 5¾ in. |
| Tubes, length | 15 ft. |
| Injectors | Hancock non-lifting, 5,000 gal. |
| Safety valves | World |
| Brakes | Westinghouse American |
| Packing | King metallic |
| Superheater | Locomotive Superheater Co. |
| Weight of tender, loaded | 166,360 lb. |
| Water capacity | 9,000 U.S. gal. |
| Coal capacity | 10 tons |
| Tank, type | Water bottom |
| Tender truck | 4 wheel equalized |
| Tender truck wheel | 33 in. |
| Wheel, type | Solid rolled steel |
| Journals, diar. and length | 6 x 11 in. |
| Brakebeam, type | Huntoon steel |

Canadian National Rys. 30 six wheel switching locomotives (0-6-0) ordered from Canadian Locomotive Co., as mentioned in our last issue, will have the following general dimensions, etc.:

| | |
|---|---|
| Weight in working order | 150,000 lb. |
| Wheel base, engine | 12 ft. |
| Wheel base, engine and tender | 41 ft. 1¼ in. |
| Heating surface, firebox | 132 sq. ft. |
| Heating surface, tubes and arch tubes | 1449.7 sq. ft. |
| Heating surface, total | 1,581.7 sq. ft. |
| Driving wheel, diar. | 51 in. |
| Driving wheel, centers | Cast iron |
| Driving journals, diar. and length | 8½ x 11½ in. |
| Cylinders, diar. and stroke | 21 x 26 in. |
| Boiler, type | Straight top |
| Boiler, pressure | 180 lb. |
| Tubes, no. and diar. | 157—2 in. 24—5½ in. |
| Tubes, length | 12 ft. 5 in. |
| Airbrakes | Westinghouse E.T. 6 |
| Packing | Metallic |
| Fire brick | Security |
| Valve motion | Walschaert |
| Cab | steel, wood lined |
| Headlight | 10 Pyle National type K, and 15 Schroeder Electric Taylor and Arnold casing |
| Weight of tender, loaded | 96,000 lb. |
| Water capacity | 3,800 imp. gals. |
| Coal capacity | 6 tons |
| Truck type | 4 wheel arch bar |
| Wheels, diar. | 33 in. |
| Wheel, type | 10 Davis C and 15 cast iron chilled |
| Journal, diar. and length | 4¼ x 8 |
| Brakebeam | Simplex |
| Airbrake | Westinghouse K.D., 8 x 12 in. |

The Canadian National Rys. cabooses, 80 of which have been ordered from Canadian Car and Foundry Co., and 20 from Preston Car and Coach Co., will be of center sill construction, with six 5 by 9 in. sills and two 7 in. ship channels, bolted below the two center wood sills, which will form the draft sill. They will have wooden frames, with bolster post 4 by 2½ in., intermediate post 4 by 2½ in. The outside and inside will be sheathed, and the inside of the roof will also be sheathed, to provide proper insulation; double board roof on the exterior with rubberoid paper between, and tar paper between the frame and the inside sheathing; floors double boarded, with tar paper between; cupola, full width of roof, with sliding window on side, double windows on front and back, and cars equipped with walk-over seats; trucks, Simplex with elliptic springs, and Miner twin spring draft gear; brakes, standard freight, Westinghouse K.C. 812. Following are the general dimensions:

| | |
|---|---|
| Length over end sills | 30 ft. 0 in. |
| Truck centers | 20 ft. 4 in. |
| Truck wheel base | 4 ft. 10 in. |
| Width over eaves | 9 ft. 9½ in. |
| Height overall | 14 ft. 5⅝ in. |

The Canadian National Rys 25 Santa Fe (2-10-2) locomotives, ordered from the Montreal Locomotive Works, as mentioned in our last issue, will have the following chief details:

| | |
|---|---|
| Weight on drivers | 256,000 lb. |
| Weight on truck | 33,000 lb. |
| Weight on trailer | 31,000 lb. |
| Weight, total | 320,000 lb. |
| Wheel base, driving | 20 ft. 6 in. |
| Wheel base, engine and tender | 70 ft. 2¾ in. |
| Cylinders, diar. and stroke | 26 x 32 in. |

| | |
|---|---|
| Cylinders, spread | 10 ft. 6½ in. |
| Driving wheel, diar. | 57 in. |
| Driving wheel centers | 50 in. |
| Driving wheel center, material | Cast steel |
| Driving journals | 11½ x 22<br>10 x 12 |
| Trailer wheel diar. | 31 in. |
| Trailer wheel journals | 7 x 12 |
| Engine truck wheels | 31 in. |
| Engine truck wheel journals | 7 x 12 |
| Frames, width | 6 in. |
| Boiler, type | Extended wagon top radial stay |
| Boiler, diar. inside first ring | 78 in. |
| Boiler pressure | 200 lb. |
| Firebox, length and width | 144⅛ x 84¼ in. |
| Tubes, no. and diar. | 270 2 in.<br>43 5⅜ in. |
| Heating surface, tubes | 2,390 sq. ft. |
| Heating surface, flues | 1,023 sq. ft. |
| Heating surface, f.b. tubes | 41 sq. ft. |
| Heating surface, firebox | 240 sq. ft. |
| Heating surface, total | 3,699 sq. ft. |
| Superheating surface | 850 sq. ft. |
| Grate area | 66.7 sq. ft. |
| Tractive power | 64,500 lb. |
| Factor of adhesion | 3.96 |
| Center of boiler from rail | 9 ft. 10 in. |
| Superheater | Schmidt |
| Reverse gear | Screw |
| Cab top | Vestibule |
| Tender frame | C.N.R. standard 10 x 13 channels |
| Tender, wheel diar. | 34 in. |
| Tender truck, type | equalized |
| Tender journals | 6 x 11 in. |
| Tank type | Water bottom |
| Water capacity | 10,000 U.S. gal. |
| Coal capacity | 17 tons |
| Coal pusher | Locomotive Stoker Co.'s horizontal |

The Canadian National Rys. Pacific type locomotives, 32 medium and 10 heavy, ordered from the Montreal Locomotive Works, as mentioned in our last issue, will have the following chief details:

| | Medium. | Heavy. |
|---|---|---|
| Weight on drivers | 166,000 lb. | 175,000 lb. |
| Weight on truck | 50,000 lb. | 49,000 lb. |
| Weight on trailer | 50,000 lb. | 49,000 lb. |
| Weight, total | 266,000 lb. | 273,000 lb. |
| Wheel base, driving | 13 ft. | 13 ft. |
| Wheel base, engine and tender | 66 ft.5¾ in. | 66 ft. 6¾ in. |
| Cylinders, diar. and stroke | 23½ x 28 | 24 x 28 |
| Cylinders, spread | 10 ft. 3¾ in. | 10 ft. 4 in. |
| Driving wheel, diar. | 69 in. | 69 in. |
| Driving wheel centers | 62 in. | 62 in. |
| Driving wheel centers material | Cast steel | Cast steel |
| Driving journals, Main | 10½ x 21 | 10½ x 21 |
| Others | 10 x 13 | 10 x 13 |
| Trailer wheel, diar. | 48 in. | 48 in. |
| Driving wheel journals | 9 x 14 | 9 x 14 |
| Engine truck wheels | 33 in. | 33 in |
| Engine truck wheel journals | 6½ x 12 | 6½ x 12 |
| Frames, width | 5 in. | 5 in. |
| Boiler, type | Straight top radial stay | Extended wagon top radial stay |
| Boiler, diar. inside first ring | 71⅝ | 72½ |
| Boiler pressure | 200lb. | 200lb. |
| Firebox, length and width | 108 x 75¼ | 108¼ x 75¼ |
| Tubes, no. and diar. | 182 2 in.<br>28 5⅜ in. | 228 2 in.<br>32 5⅜ in. |
| Heating surface tubes | 1,945 sq. ft. | 2,378 sq. ft. |
| Heating surface, flues | 804 sq. ft. | 897 sq. ft. |
| Heating surface, f.b. tubes | 27 sq. ft. | 27 sq. ft. |
| Heating surface, fire box. | 188 sq. ft. | 215 sq. ft. |
| Heating surface, total | 2,964 sq. ft. | 3,517 sq. ft. |
| Superheating, surface | 677 sq. ft. | 757.3 sq. ft. |
| Grate area | 56.4 sq. ft. | 56.5 sq. ft. |
| Tractive power | 38,100 | 39,700 |
| Factor of adhesion | 4.36 | 4.4 |
| Center of boiler from rail | 9 ft. 5 in. | 9 ft. 8 in. |
| Superheater | Hungerford - Cameron | Schmidt |
| Reverse gear | Screw | Screw |
| Cab top | Vestibule | Vestibule |
| Tender frame | C.N.R. standard 10 and 13 in. channels | C.N.R. standard 10 and 13 in. channels |
| Tender, wheel diar. | 36 in. | 36 in. |
| Tender, truck type | Equalized | Equalized |
| Tender journals | 6 x 11 | 6 x 11 |
| Tank type | Water bottom | Water bottom |
| Water capacity | 6,500 imp. gal. | 9,000 U.S. gal. |
| Coal capacity | 10 tons | 10 tons |
| Coal pusher | Locomotive | Stoker |

## Canadian Pacific Railway Orders.

It was announced on Montreal Mar. 24 that the C.P.R. had sold $12,000,000 6% equipment notes through the United Financial Corporation of Montreal, and the Guaranty Trust Co. of New York. The notes, which mature serially in from one to 12 years, will be offered shortly in the United States by a syndicate headed by the Guaranty Trust Co. The equipment against which the new securities will be issued, involving an outlay of some $15,000,000, will all be built in Canada, thereby assuring to the car building and allied industries a highly substantial volume of business for some months to come.

Up to Mar. 27 no official announcement had been made as to the rolling stock to be built and ordered, but it is said that the programme includes a number of locomotives, 53 sleeping cars, 12 dining cars, 13 compartment cars, 24 baggage cars, 2,500 box cars, 500 refrigerator cars, 500 automobile cars, and 67 are cars. A large portion of these orders will be built at the company's Angus shops, Montreal, but considerable will be placed outside. As stated in Canadian Railway & Marine World for March, orders have been given Canadian Car & Foundry Co., for 35 steel frames for sleeping cars, and to the National Steel Car Corporation for 18 sleeping cars, including body frames, steel work and trucks, the interiors to be completed by the C.P.R. We are also advised of orders having been given for 2,500 fifty-ton boxe cars, 1,500 to Canadian Car & Foundry Co., and 1,000 to Nation Steel Car Corporation, and it is said 500 have been ordered from Eastern Car Co. It is also said that the box cars will be of the United States Railroad Administration type, except that arch bar trucks will be used, instead of steel frame side type, and that the C. P. R. grain hopper will be installed.

The company has ordered five cabooses to be built at its Angus shops.

## Canadian National Railways Earnings.

| | 1920 | 1919 |
|---|---|---|
| January | $ 7,726,562 | $ 6,787,517 |
| February | 6,516,059 | 6,265,562 |
| | $13,783,621 | $13,053,079 |

Approximate earnings for three weeks ended March 21, $4,892,646, against $4,338,033 for same period, 1919.

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan... | $13,914,569 | $13,328,628 | $585,941 | *$967,571 |
| | $13,914,569 | $13,328,628 | $585,941 | *$967,571 |
| Incr. | $ 886,241 | $ 1,853,812 | ..... | ..... |
| Dec. | ..... | ..... | $967,571 | ..... |

Approximate earnings for February, $13,208,000, and for three weeks ended March 21, $9,657,000, against $10,882,000, and $7,946,000 for same periods, 1919.

*Decrease.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $ 5,054,034 | $ 5,867,445 | *$ 813,411 | †$ 97,406 |
| | $ 5,054,034 | $ 5,867,445 | *$ 813,411 | †$ 97,406 |
| Incr. | $ 651,805 | $ 749,211 | ..... | ..... |
| Decr. | ..... | ..... | $97,406 | ..... |

†Deficit. *Decrease.

Approximate earnings for February, $4,664,778, and for three weeks ended March 21, $3,755,257, against $4,088,029, and $3,618,738 for same periods, 1919.

## Grand Trunk Railway Construction, Betterments, Etc.

Ottawa Central Station—A press report states that alterations and improvements estimated to cost $60,000 are being made to the car sheds at this station. The car shed is being extended to the edge of the Rideau Canal, and a concrete platform is being built between tracks 1 and 2. It is expected that the erection of the steel work will be started about April 15, and that the whole work will be completed by June 15. The work is being done by the company's maintenance force, except the steel work, the contract for which has been let to the Dominion Bridge Co.

Montreal-Brockville Track—A press report states that about 140 miles of track between Montreal West, Que., and Brockville, Ont., will be relaid with 100-lb. steel rails during this year, and that the new rails will be laid on the westbound track, except for a stretch on the east track between Morrisburg and Summerstown, Ont.

Allandale-Collingwood Bridges — The Board of Railway Commissioners has authorized the company to use for traffic bridges 291, 292 and 293 over Mad River, Batteaux Creek and Pretty River, respectively, between Allandale and Collingwood, Ont. (Mar. pg. 124.)

Telephone Dispatching Installation—A press report states that it is proposed to instal a telephone despatching system on the line from Hamilton to Sarnia, about 150 miles, at a cost of approximately $200,000 during this year.

London Freight Shed Burned — The company's freight shed and offices on York street, between Wellington and Waterloo Sts., London, Ont., were destroyed by fire Mar. 6, involving an estimated loss of from $125,000 to $150,000. The buildings were considerably damaged by a fire about five years ago, and have been merely patched up since. The mayor and representatives of the Chamber of Commerce and the Board of Trade are reported to have sent a joint message to the company's headquarters at Montreal, asking that steps be taken to erect modern freight sheds and offices. A press report states that a freight shed and a 2-story office building, to cost approximately $30,000 are to be erected at once, and that it is expected to have the work completed by June 1.

East London Reclamation Yards—A press report states that work on laying out the reclamation yards in East London, Ont., will be put in hand as soon as the necessary authority is received from Montreal.

London Division Track Relaying—The relaying of the track between London and Sarnia, Ont., with 100-lb. rails in place of the present 85-lb. rails will, it is said, be started about May 1. It is reported that 40 miles of track east of London will also be relaid with 100-lb. rails.

Railway Lands Patented — Letters patent were issued during February, respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia as follows:

| | Acres |
|---|---|
| Canadian Northern Ry. | 156.636 |
| Canadian Pacific Ry. grants | .40 |
| Canadian Pacific roadbed and station grodnds | 75.22 |
| Edmonton, Dunvegan and British Columbia Ry. | 3.45 |
| Grand Trunk Pacific Branch Lines Co. | 182.77 |
| Total | 418.476 |

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the board are given in full on another page of this issue.

29,370. Jan. 30.—Approving Fredericton and Grand Lake Coal and Ry. Co. standard passenger tariff C.R.C. 4.

29,371. Feb. 14.—Extending to May 15 time within which Canadian National Rys. shall build class 3 station and extension of passing track at Elie, Man.

29,372. Feb. 16.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for Parker Creek Coal Co. at mile 85.7, Calgary Branch, Sec. 21, Tp. 38, Range 23, west 4th meridian, Alta.

29,373. Feb. 16.—Ordering C.P.R. to rearrange and rebuild waiting room at Carmichael, Sask., by June 1.

29,374. Feb. 16.—Approving revised location Canadian Northern Pacific Ry. Kamloops—Vernon—Kelowna—Lumby Branch, mile 41, east from Kamloops Jct., B.C.

29,375. Feb. 12.—Authorizing Lake Erie and Northern Ry. and Toronto, Hamilton & Buffalo Ry. to operate over crossing and interlocking plant at Brantford, Ont.

29,376. Feb. 16.—Authorizing G.T.R. to build spur for Canadian Oil Cos., near Pottersburg, Ont.

29,377. Feb. 19.—Suspending orders 29,312 and 29,336, Jan. 30 and Feb. 5 respectively, regarding car supply at Fort William and Port Arthur, Ont., for carriage of grain to Eastern Canada for domestic consumption.

29,378. Feb. 20.—Authorizing Toronto, Hamilton & Buffalo Ry. to rebuild bridge over Main St., Hamilton, Ont.

29,379 Feb. 20.—Authorizing Esquimalt & Nanaimo Ry. to use British Columbia Electric Ry. on Store St., Victoria, B.C., to Canadian Puget Sound Lumber and Timber Co.

29,380. Feb. 20.—Authorizing British Columbia Electric Ry. to build spur on Store St., Victoria, B.C., for Canadian Puget Sound Lumber & Timber Co

29,381. Feb. 20.—Approving route map of C.P.R. Pashley Northeasterly Branch, mile 0 to 109.3.

29,382. Feb. 20.—Authorizing Saskatchewan Government to make crossing over C.P.R. s.e. ¼ Sec. 11, Tp. 34, Range 25, west 2nd meridian, Sask.

29,383. Feb. 14.—Rescinding order 19,514, June 9, 1913, re G.T.R. speed limitation at crossing of Queen St., Mount Forest, Ont.

29,384. Feb. 19.—Authorizing G.T.R. to use bridge between Lots 17 and 18, St. Marys, Ont. Ont.

29,385. Feb. 17.—Approving clearance at G.T.R. siding for I. Cohen, Kingston, Ont.

29,386. Feb. 20.—Authorizing Kettle Valley Ry. to open its line for freight traffic from mile 13.6, Princeton, to mile 8, south of Princeton, 5.6 miles.

29,387. Feb. 20.—Authorizing Canadian Northern Western Ry. to cross highway in n.e. ¼ Sec. 4, Tp. 22, Range 12, west 4th meridian, Alta.

29,388. Feb. 19.—Approving revised general location of C.P.R. Leader Southeasterly Branch, mile 29 to 50.1, and general location from mile 88.0 to 153.6.

29,389. Feb. 21.—Dismissing application of Saskatchewan Supply & Fuel Co. for modification of Rule 2 (b) of Canadian Car Demurrage Rules, to afford free time for alternative placement orders for unloading cars, also for allowance of free time for paying freight charges.

29,390. Feb. 21.—Authorizing C.P.R. to build spur for Robert McNair Shingle Co., at mile 0.8 loco Branch, Cascade Subdivision, B.C.

29,391, 29,392. Feb. 21.—Authorizing Canadian National Rys. to cross and divert road in n.e. ¼ Sec. 1, Tp. 23; and n.e. ¼ Sec. 36, Tp. 19, Range 12, west 4th meridian, Alta.

29,393. Feb. 21.—Authorizing C.P.R. to build spur extension for Tees and Persse, Ltd., Regina, Sask.

29,394. Feb. 23.—Authorizing Canadian Northern Pacific Ry. (Kamloops-Vernon-Kelowna-Lumby Branch, to cross and divert highway at mile 59.8, east from Kamloops Jct., B.C.

29,395. Feb. 23.—Approving alteration in location of G.T.R. siding authorized by order 15318, Nov. 10, 1911.

29,396. Feb. 23.—Amending order 28497, July 7, 1919, re bridge to be built by Toronto, Hamilton & Buffalo Ry., over its track near Vinemount, Ont.

29,397. Feb. 23.—Authorizing Canadian National Rys. to cross and divert highway in s.e. ¼ Sec. 19, Tp. 2, Range 7, east principal meridian, Man.

29,398 to 29,400, Feb. 24.—Approving Bell Telephone Co.'s agreements, Feb. 3, with Goulais Bay Telephone Co., Algoma District; Feb. 4, with Greenwood Telephone Association, Algoma District, and with Mornington Tp., Perth County, Ont.

29,401. Feb. 20.—Authorizing City of St. Boniface, Man., to continue Rue Messier, across C.P.R. Emerson Branch.

29,402. Feb. 24.—Extending to Mar. 24 time within which G.T.R. shall install bell at crossing of Victoria Road, near Guelph, Ont.

29,403. Feb. 25.—Relieving C.P.R. from providing further protection at highway crossing near Versailles Station, Que.

29,404. Feb 24.—Approving revised location of Canadian Northern Pacific Ry., Kamloops—Vernon—Kelowna—Lumby Branch, at mile 29 south from Vernon, B.C.

29,405. Feb. 23.—Authorizing Canadian National Rys. to change spur and build additional spur to siding for P. Burns & Co., Prince Albert, Sask.

29,406. Feb. 25.—Authorizing Vancouver, Victoria & Eastern Ry. and Navigation Co., and British Columbia Electric Ry. to operate over crossing on Georgia St., Vancouver, B.C.

29,407. Feb. 27.—Suspending, pending, hearing, tariffs of G.T.R., C.P.R., Canadian National Rys., Toronto-Hamilton & Buffalo Ry., New York Central Ry., and Central Vermont Ry., showing increase in commutation rates, effective Mar. 1.

29,408. Feb. 24.—Authorizing G.T.R. to install improved type of automatic bell at crossing of Main St., Lucan, Ont.

29,409 Feb. 25.—Amending order 29,220, Jan. 2, re Canadian National Rys. highway crossing in s.e. ¼ Sec. 9, Tp. 26, Range 17, west 3rd meridian, Sask.

29,410. Feb. 24.—Relieving C.P.R. from providing further protection at crossing of Prince de Galles St., at Laval Rapids, Que.

29,411. Feb. 26.—Ordering Canadian National Rys. to install improved type of automatic bell at crossing of main road leading to crossing of Red River, St. Jean Baptiste, Man.

29,412 Feb. 28.—Authorizing Canadian National Rys. to cross highway between Secs. 7 and 18, Tp. 29, Range 16, west first meridian, Man.

29,413. Feb. 23.—Relieving G.T.R. from providing further protection at crossing of North Augusta Road, Brockville, Ont.

29,414. Feb. 27.—Authorizing Saskatchewan Government to make crossing over Canadian National Rys. station grounds at Tichfield, Sask.

29,415. Feb 27.—Authorizing G.T.R. to build siding for Windsor Petroleum & Refining Co., Tecumseh, Ont.

29,416. Feb. 28.—Authorizing C.P.R. to build spurs for Robert Bell Engine & Thresher Co., Winnipeg.

29,417. Feb. 27.—Rescinding order 28,613, July 30, 1919, re building by Great Northern Ry. of glance pier or crib from bridge 539, between Princeton and Brookmere, B.C., and ordering that stream be diverted to the west side of railway from bridge 539 to bridge 538.

29,418. Feb. 27.—Rescinding order 26137, May 22, 1917, respecting appointment of temporary agent by C.P.R. at Domain station, Man.

29,419. Feb. 28.—Extending to June 1 time within which Canadian National Rys. shall build freight and passenger station, and passing track at Rosebud, Man., as required by order 27,875, Nov. 18, 1918.

29,420. Feb. 20.—Dismissing application of residents of Pine Beach and vicinity, Dorval, Que., for order that Pine Beach be made a stopping place during summer, half way between Strathmore and Dorval, on G.T.R. and C.P.R.

29,421. Mar. 2.—Authorizing Canadian National Rys. to rebuild bridge over Yamachiche River, mile 98.88 from Quebec.

29,422. Feb. 22.—Authorizing C.P.R. to build its Langdon North Branch, Acme to Empress, at mile 48.5, under Grand Trunk Pacific Branch Lines Co.'s tracks in s.w. ¼ Sec. 21, Tp. 29, Range 24, west 4th meridian.

29,423. Mar. 2.—Approving revised location of C.P.R. Archive-Wymark Branch, mile 0 to 24.7.

29,424. March 3.—Dismissing complaint of T. H. Taylor Co., Chatham, Ont., that carload of flour loaded and sealed by them at Chatham, Ont., out-turned a shortage at Sydney, N.S., and claim is refused by carrier on ground that car reached its desination with shipper's seals intact.

29,425. March 4.—Authorizing G.T.R. to build spur for City of Welland and Vaughan Seed Co., Welland, Ont.

29,426. March 4.—Authorizing C.P.R. to build connection spur with Key Valley Ry. (Schroeder Mills and Timber Co.'s lumber railway), at mile 74.70, Parry Sound Subdivision, Ont.

29,427. March 4.—Authorizing C.P.R. to build spur and three sidings, with crossover track and transfer tracks, for Strong Lumber Co., at mile 7.86, Sudbury District, Ont.

29,328. March 3.—Authorizing Canadian National Rys. to build spurs for Portage Milling & Transfer Co., St. Boniface, Man.

29,429. March 3.—Authorizing Canadian National Rys. to build spur for Saskatchewan Co-operative Creameries, North Battleford, Sask.

29,430. March 3.—Authorizing Canadian National Rys. to build extension of spur for Carrol Wilson, Ltd., Block 7, Hudson's Bay Reserve, 8dmonton, Alta.

29,431. March 3.—Authorizing G.T.R. to rebuild bridge 19 at mile 2.87, Stratford Division, Ont.

29,432. March 3.—Amending order 29,402, Feb. 24, re time for installation of automatic bell by G.T.R. at Victoria Road crossing near Guelph, Ont.

29,433. March 5.—Extending for 3 months from date, time within which distant signals may be installed where C.P.R. crosses Canadian Northern Ontario Ry., at Central Ontario Jct. (Bonarlaw).

29,434. March 4.—Authorizing Bell Telephone Co. to operate its telephone lines by attaching two cables to Gouin bridge, crossing Richelieu River, between St. Johns and Iberville, Que.

29,435. March 2.—Ordering on application of Freight Adjusting Bureau of Vancouver, B.C., that shoddy blankets are entitled to rate provided for specified articles of dry goods in item 250 of Canadian Freight Association Commodity Tariff 1-A, C.R.C. 14.

29,436. March 2.—Ordering on application of United Grain Growers, Ltd., Winnipeg, that rating of road graders set up, be reduced to 1½ first class subject to Rule 6, of Canadian Freight Classification 16, as amended by Supplement 10.

29,437. March 9.—Approving Kettle Valley Ry. location south end of Dog Lake to Indian Reserve near Okanagan Falls townsite, about 750 ft.

29,438. March 9.—Approving Canadian National Rys., Acadia Valley Branch right of way, as located through Tps. 27 and 26, Ranges 28 and 29, west 3rd Meridian, Sask., mile 0 to 11.88, and authorizing its construction across 15 highways.

29,439. March 9.—Approving agreement Feb. 16, between Bell Telephone Co. and Pleasant View Telephone Co., Grey County, Ont.

29,440. March 9.—Relieving Brantford & Hamilton Electric Ry. from providing further protection at crossing of the Stone Road, just east of Cainsville, Ont.

29,441. March 6.—Ordering British Columbia Electric Ry. to furnish certain train service between Vancouver and New Westminster, B.C.

29,442. March 8.—Authorizing C.P.R. to take certain lands owned by E. Agnew, in west half of lot 6, Con. 2, Nassagaweya Tp., Ont.

29,443. March 10.—Approving combined shipping bill, way bill and receipt form of Algoma Central & Hudson Bay Ry., for use of British-America Express Co.

29,444. Mar. 10.—Authorizing town of Maple Creek, Sask., to make highway crossing over C.PR. at Sidney St.

29,445. March 11.—Authorizing Saskatchewan Government to make crossing over C.P.R. in s.e. ¼ Sec. 1, Tp. 12, Range 13, west 3rd Meridian.

29,446. March 11.—Authorizing G.T.R. to operate over siding to be built by Toronto Harbor Commissioners for Barrett Co.

29,447. March 11.—Approving change in C.P.R. function numbers at Tillsonburg, Ont., that all home and distant dwarf signals are to be pipe-connected and that all signals are to operate in the upper quadrant.

29,448, 29,449 March 12.—Authorizing C.P.R. to rebuild bridges 2.3 Taber Subdivision, and bridge 45.5, Crowsnest Subdivision, Lethbridge Division, Alta.

29,450. March 12.—Authorizing Hull Electric Co. to build spur for Federal Stone and Supply Co., Hull, Que.

29,451. March 11.—Authorizing C.P.R. to build spur for Harris Abattoir Co., Toronto.

29,452. March 12.—Authorizing G.T.R. to build spur for Geo. Hall Coal Co., of Canada, Ltd., Montreal.

29,453. March 12.—Authorizing G.T.R. to use bridges 291, 292 and 293 over Mad River, Batteaux, Creek, and Pretty River, respectively, between Allandale and Collingwood, Ont.

29,454. March 9.—Authorizing Railways & Canals Department to connect Grand Trunk Pacific Ry. and Canadian National Rys at Lobstick, Chip Lake, Snarling Jct., Pocahontas and Henry House, Alta.

29,455 to 29,460. March 13.—Authorizing Canadian National Rys. to cross 6 highways in Alberta with its Munson to Wayne second track.

29,461. March 13.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for M. Vitaly at mile 52.1, Alberta Coal Branch, in s.e. ¼ Sec. 19, Tp. 47, Range 19, west 5th meridian, Alta.

29,462 to 29,464. March 13, 12.—Authorizing Canadian National Rys. to cross highways at 3 points in Alberta with its Munson to Wayne second track.

29,465. March 15.—Authorizing Canadian National Rys. to build spur for McNall Co., Regina, Sask.

29,466. March 15.—Relieving C.P.R. from providing further protection at Sudbury Road, Chelmsford, Ont.

29,467. March 17.—Approving supplement 1 to Ottawa Electric Ry. Standard Passenger Tariff, C.R.C. 1, effective Apr. 5.

29,468. March 16.—Dismissing application of town of Pointe Claire, Que. for leave to divert

farm crossing over C.P.R. and G.T.R., within the town limits into a public crossing.

29,469. March 17.—Authorizing Grand Trunk Pacific Ry. to build spur for Red Mountain Lumber Co., in s.e. ¼, Lot 5500, Range 4, Cariboo District, B.C.

29,470. March 8.—Relieving C.P.R. from speed limitation of 10 miles an hour at pedestrian crossing in Riverdale Park, Toronto.

29,471. March 15.—Ordering that side road at crossing of highway by Michigan Central Rd., known as Stone Road crossing, 2 miles east of Welland, Ont., be diverted to the Stone Road, and orchard trees on triangular parcel north of railway cut down.

29,472. March 12.—Ordering that crossing of G.T.R. and C.P.R. at Kingston, Ont., be protected by interlocking plant to be installed by C.P.R.

29,473. March 9.—Disallowing tariffs of C.P.R., G.T.R., C.N.R., New York Central Rd., Quebec, Montreal & Southern Ry., Napierville Jct. Ry. and Montreal & Southern Counties Ry., increasing rates on milk in passenger or mixed service.

29,474. March 18.—Authorizing Canadian National Rys. to build spur to serve block 123, and to rearrange Scott Fruit Co.'s spur, at Regina, Sask.

29,475. March 18.—Authorizing Canadian National Rys. to cross and divert highway between secs. 7 and 8, Tp. 18, Range 20, west principal meridian.

29,476. March 18.—Approving revised station site of Grand Trunk Pacific Branch Lines Co., at Lorlie, Sask.

29,477. March 18.—Authorizing Canadian National Rys. to install standard portable station at McDiarmid, Ont.

29,478. March 18.—Ordering London and Port Stanley Ry. forthwith to erect shelter with heating, apparatus and proper light at east end of Base Line Road, Westminster Psychopathic Hospital, London, Ont.

General order 283. Feb. 24.—Declaring track scale allowances to be made by railways subject to Board's jurisdiction, also tolerance for variation in weights disclosed in check weighing or reweighing passed without alteration of billed weight.

General order 284. March 8.—Providing increases in existing charges for heated refrigerator cars.

General order 285. March 2.—Dismissing application of Canadian Manufacturers' Association and others for order directing extension of Canadian Car Demurrage Rules, to provide for the average demurrage plan.

General order 286. March 4.—Authorizing all telephone companies under the Board's jurisdiction to charge tolls published in their respective tariffs filed with the board.

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**Superannuated Intercolonial Ry. Employes.** In answer to an enquiry, Is the Government aware that old superannuated I.R.C. employes are receiving inadequate pensions and not at all in relation with the cost of living?" the Minister of Railways stated in the House of Commons, Mar. 22, that the question of increased pensions for them cannot be dealt with until a final scheme is decided upon, which will be uniform for the whole Canadian National Rys. System. The Railways Department is not ready to grant the employes an annual bonus, similar to the one granted to civil servants.

**The Victoria Rolling Stock and Realty Co.** is applying to the Ontario Legislature for an act to amend the statutes of 1881, Chap. 58, Sec 1, which provides for the issue of debentures for the purpose of the company to be a first charge upon "such personal property, rights and credits of the company as shall be specified in the bylaw authorizing such issue." The amendment desired is the striking out of the word "personal."

**Lotbiniere & Magantic Ry. Transfer.** The Minister of Railways stated in the House of Commons Mar. 22, that an order-in-Council, passed Dec. 1, 1919, gives the government authority to buy this railway, but that the transfer had not been made.

**J. E. Morazain,** General Superintendent, Quebec Division, Canadian National Rys., in remitting his subscription, writes: "Canadian Railway and Marine World is a welcome monthly visitor."

## Proposed Purchase of Inverness Ry. and Coal Co.'s Railway.

The Minister of Railways in replying to questions in the House of Commons, Mar. 10, said the Dominion Government had not bought the Inverness Ry. and Coal Co.'s railway on Cape Breton Island, N.S., but it had made an effort to do so. The committee representing the bondholders urged that the government take over the railway as a feeder for the Canadian National Rys. system, the transfer to be made on a basis similar to that on which certain branch lines in New Brunswick had been taken over. On this basis, it was agreed that the price be $150,000 for 60.91 miles of railway, and 4.6 miles of sidings, exclusive of the company's pier at Port Hastings; the rolling stock and equipment to be paid for on a price to be agreed upon between the committee and the Canadian National Rys. directors, but such price not to exceed $175,000. Supplies on hand to be taken over at valuation to be made by the President Canadian National Rys. The bondholders committee expressed a willingness to accept the offer, and the negotiations are still pending. The government hopes to complete the purchase on the basis agreed to. It is reported that Sir Wm. Mackenzie controls a majority of the bonds and that he is not willing to accept the terms offered.

## Fire Protection for Wooden Bridges and Trestles.

At the Railway Fire Protective Association's last annual meeting a report was presented on this subject, it being stated that 90% of fires on wooden bridges and trestles on railways are caused by locomotive sparks. Following are the principal recommendations:

That effective spark screens be provided in the front end of all locomotives and carefully maintained.

That ash pans and grates be made tight and kept in good working order, as the dropping of hot coals or ashes is a source of a large amount of the trouble.

That special places be provided for dumping cinders and ashes, and that grates be not shaken down except at safe points.

That all combustible refuse, such as dry leaves, dead grass, weeds, brush and rubbish, be cleared away from under and around all wooden bridges.

That the decks of all wooden bridges, between the rails be covered with 22 galvanized iron, to prevent sparks from setting fire to the structure should they be dropped from the locomotive.

That all wooden bridges be coated with a fireproof or fire-retardent paint, demonstration having proved some of them to be of excellent protection and that they can be applied at a cost no greater than that of ordinary paint.

That one water barrel and one pail be provided for all wooden bridges of a length of 50 ft. or less, and two water barrels and two pails, one to each barrel, be provided for all bridges whose length is more than 50 ft. up to a length of 150 ft., and one water barrel and one pail for each additional 150 ft.

That where a bridge requires one or two barrels and pails, the same be placed at the ends of the bridge, located at proper clearance from the track and buried in the ground to within 6 in. of the top, and where barrels and pails are located in the middle of the bridge they be located at proper clearance from the rails and that the top of the barrel be provided with wood or iron cover.

In the past great difficulty has been experienced in keeping pails intact with the water barrels, especially where galvanized iron pails or fire buckets have been used, and they are invariably missing when wanted, and it is therefore recommended that a square wooden bucket of unfinished lumber be provided and that it be suspended in the water inside of the barrel.

That all locomotives be equipped with fire fighting apparatus.

## Freight Rates on Lumber.

The Canadian Lumbermen's Association at its recent annual meeting in Quebec discussed freight rates and passed the following resolution: 'Whereas, the situation frequently arises that sales of lumber, etc., are made for delivery from a given point on one line of railway to a destination on some other line, between which points the railway companies have no through commodity rates in effect, be it therefore resolved that the Canadian Lumbermen's Association, in annual meeting assembled, authorizes the incoming committee on transportation to take such steps as may be necessary to obtain the filing of tariffs by the railways, providing through commodity rates between points on two or more railways, said rates to conform to rates for similar mileage between other points which may be in effect already."

The following were appointed members of the transportation committee: Chairman, A. E. Clark, Toronto; E. R. Bremmer, Ottawa; W. B. Snowball, Chatham, N. B.; J. F. Gregory, St. John, N. B.; A. H. Campbell, Montreal; W. T. Mason, Montreal; G. T. Edwards, Ottawa.

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**St. John and Quebec Ry. Operation**—The Minister of Railways stated in the House of Commons, Mar. 17, that an agreement for the operation of the St. John and Quebec Ry. was made between the Dominion and New Brunswick Governments Nov. 9, 1916, the Dominion Government to pay the St. John and Quebec Ry. Co. 40% of the gross proceeds. The Dominion Government did not make an agreement to secure running rights for the St. J. and Q. Ry. over the C.P.R. from Westfield Beach and St. John, but such an agreement was made by the St. J. and Q. Ry., under which the company is to pay interest on a proportion of the value of the joint section, plus a proportion of all working expenses on a wheelage basis. The line is being operated by Canadian Government Rys. as a part of the system.

**Standard Time for Railways.** The Minister of Railways stated in the House of Commons, Mar. 22, that it had not been decided whether the Canadian National Rys. will operate under standard time during the ensuing summer. In answer to a further enquiry as to whether the government would compel privately owned railways to use the same time, the Minister said that all railways would, of necessity, use the same time.

**Quebec & Saguenay Ry. Freight Rates.** The Minister of Railways stated in the House of Commons, Mar. 22, that local class freight rates on the Q. & S. R. are not higher than those on other railways. They were fixed by Canadian National Rys. traffic officials.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canada Steamship Lines, Ltd.**—W. P. O'BRIEN, Agent, Victoria pier, Montreal, was mentioned in our last issue as having been agent at Quebec, Que., prior to his present appointment. This is incorrect; M. P. Connolly is General Agent at Quebec, Que.

**Canadian Government Merchant Marine, Ltd.**—B. C. KEELEY has been appointed General Agent at Vancouver, B.C.

**Canadian National Rys.**—H. R. ARTHUR, Trainmaster, Saskatoon, Sask., has been appointed Trainmaster, Lucerne, B.C., vice H. W. Culver, resigned.

J. FERGUSON has been appointed Trainmaster, Prince Albert, Sask., vice W. C. Owens, transferred to Saskatoon, Sask.

T. J. GRACEY, heretofore Auditor of Disbursements and Acountant, Timiskaming and Northern Ontario Ry., Toronto, has been appointed Assistant Auditor of Disbursements, Canadian Northern Ry. System, vice T. R. Ralph, deceased, and not Auditor of Disbursements, as erroneously stated in our last issue. Office, Toronto. R. S. GOSSETT, is Auditor of Disbursements, Canadian Northern Ry. System.

H. R. KEMPSVILLE, heretofore conductor, Division 2, Central District, has been appointed Trainmaster Neepawa, Man., vice W. A. Kirkpatrick.

E. R. LOGIE has been appointed Division Engineer, Superior Division, Hornepayne, Ont., vice H. K. Morrison, transferred to Montreal.

H. K. MORRISON, heretofore Division Engineer, Superior Division, Hornepayne, Ont., has been appointed Division Engineer, Montreal Division, Quebec District, vice T. Kearney, transferred. Office, Montreal.

W. C. OWENS, heretofore Trainmaster, Prince Albert, Sask., has been appointed Trainmaster, Saskatoon, Sask., vice H. R. Arthur, transferred to Lucerne, B.C.

S. H. SYKES, recently Assistant to Chief Engineer, Eastern Lines, Canadian Northern Ry., Toronto, has been appointed District Engineer, Canadian National Rys., Vernon, B.C., vice Major W. G. Swan, D.S.O., resigned on his recent appointment as Chief Engineer, Vancouver Harbor Commission.

**Canadian Pacific Ry.**—G. ANDERSON has been appointed Roadmaster, Empress, Alta., vice J. Daem, transferred to Maple Creek, Sask.

D. BERTIE, heretofore Travelling Passenger Agent, C.P.R., and Canadian Pacific Ocean Services, Ltd., Minneapolis, Minn., has been appointed Travelling Passenger Agent, same companies, Duluth, Minn.

A. M. BIRD, heretofore Roadmaster Kingston, Ont., has been appointed Roadmaster between Megantic and Kylehead, Moosehead Subdivision, New Brunswick District. Office Brownville Jct., Me.

HENRY J. CAMBIE, who has been in the C.P.R. service since its inception, latterly as Special Assistant Engineer, at Vancouver, B.C., and Chief Engineer, Esquimalt & Nanaimo Ry., retired Mar. 15.

W. F. CAWLEY has been appointed Travelling Passenger Agent, C.P.R. and Canadian Pacific Ocean Services, Ltd., Minneapolis, Minn., vice E. G. Rennels, transferred.

J. DAEM, heretofore Roadmaster, Empress, Alta., has been appointed Roadmaster, Maple Creek, Sask., vice J. V. McNab, whose appointment as Divisional Engineer, Saskatoon, Sask., was announced in our last issue.

C. F. A. FLUGGE, formerly Agent, at Hamburg, Germany, has been reappointed to that position on the re-opening of the agency there.

C. H. FOX, heretofore Division Engineer, Regina, Sask., has been appointed Assistant District Engineer, Manitoba District. Office Winnipeg.

E. B. FRASER, heretofore Shop Foreman, Winnipeg, has been appointed Locomotive Foreman, Wilkie, Sask., vice W. P. Crawford.

T. J. LACKEY, heretofore acting

H. E. Whittenberger,
General Manager, Western Lines, Grand Trunk Railway.

Roadmaster on the Bruce Division, has been appointed Roadmaster, Kingston subdivision, Kingston, Ont., vice A. M. Bird, transferred.

CAPT. R. McKILLOP, heretofore acting as relieving Superintendent, has been appointed Superintendent, London Division, Ontario District, vice A. Williams, transferred.

L. C. STOCKBRIDGE has been appointed Travelling Passenger Agent, C.P.R. and Canadian Pacific Ocean Services, Ltd., Minneapolis, Minn., vice D. Bertie, transferred to Duluth, Minn.

**Chicago, Burlington and Quincy Rd.**—H. R. SAFFORD, formerly Chief Engineer, G.T.R., Montreal, and latterly Engineering Assistant, Central Western Region, United States Railroad Administration, Chicago, Ill., has been appointed Assistant to President C. B. & Q. R. Office, Chicago, Ill.

**Chicago, Milwaukee & St. Paul Ry.**—F. O. FLINN, formerly Agent, Victoria, B.C., from 1917 in the Royal Air Force, overseas, and latterly in transportation service at Seattle, Wash., has been appointed Commercial Agent, Victoria, B.C.

G. W. HIBBARD, formerly General Passenger Agent, Western Lines, has been appointed General Agent, Vancouver, B.C.

**Grand Trunk Ry.**—A. BEARDSHAW has been appointed Locomotive Foreman, Turcot, Que., vice J. D. McCuaig, promoted.

G. BRADSHAW, Supervisor of Safety, Grand Trunk Western Lines Railroad, having resigned to enter another company's service, that position has been abolished. Safety First work through the safety committees is being handled by G.T.R. Western Lines.

W. R. DAVIDSON, heretofore General Superintendent, Eastern Lines, Montreal, has been appointed General Superintendent, Lines in the U.S., west of Detroit and St. Clair Rivers, J. J. Corcoran, formerly General Superintendent, Western Lines, G.T.R., and latterly General Superintendent, Grand Trunk Western Lines Rd. (U.S.R.A.), having resigned to enter another company's service. Office Chicago, Ill.

W. H. EDMONSON, heretofore Assistant to Federal Manager, Grand Trunk Western Lines Rd. (U.S.R.A.) Detroit, Mich., has been appointed Assistant to General Manager, Western Lines, G.T.R. Office Detroit, Mich.

B. J. FARR, heretofore Superintendent, Motive Power and Car Department, Grand Trunk Western Lines Rd. (U.S. R.A.) Detroit, Mich., has been appointed Superintendent of Motive Power and Car Department, Western Lines, G.T.R. Office, Battle Creek, Mich.

W. C. FOSS has been appointed Purchasing Agent, Western Lines, G.T.R. Office, Detroit, Mich.

S. HUSSARD, heretofore at Toronto, is reported to have been appointed General Yardmaster, Brockville, Ont., vice C. F. McEwen, assigned to other duties there.

T. T. IRVING, heretofore Chief Engineer, Grand Trunk Western Lines Rd., (U.S.R.A.) Detroit, Mich., has been appointed Chief Engineer, Western Lines, G.T.R. Office, Detroit, Mich.

J. S. LILLIE, formerly Assistant Land and Tax Commissioner, Western lines, G.T.R., and latterly Land and Tax Agent, Grand Trunk Western Lines Rd., (U.S.R.A.) has been appointed Land and Tax Agent, Western Lines, G.T.R., reporting to the Assistant to General Manager. Office, Detroit, Mich.

J. D. McCUAIG, heretofore Locomotive Foreman, Turcot, Que., has been appointed General Foreman, motive power shops, Ottawa, vice F. Foster.

A. B. McNAUGHTON, heretofore Superintendent, Grand Trunk Lines, in New England, (U.S.R.A.) Portland, Me., has been appointed Superintendent Portland Division, G.T.R., with jurisdiction from Portland to west yard limit board at Island Pond, Vt. Office, Portland, Me.

J. McWOOD, heretofore Master Car Builder, Eastern Lines, Montreal, has been appointed General Foreman, in charge of Ottawa Shops and outside points on Districts 30, 31 and 32, Eastern lines, reporting to Master Car Builder, Eastern Lines. Office, Ottawa.

D. C. MESSEROLL, heretofore General Travelling Car Inspector, Montreal, has been appointed Master Car Builder, Eastern lines, vice J. McWood, transferred. Office, Montreal.

W. J. PIGGOTT, heretofore Trainmaster, Allandale, Ont., has been appointed Superintendent, Stratford Division, Ontario Lines, vice R. H. Fish, whose appointment as General Superintendent, Eastern Lines, Montreal, was announced in our last issue. Office, Stratford, Ont.

B. WHEELWRIGHT, heretofore acting Signal Engineer, has been appointed Engineer, Maintenance of Way, Portland Division, reporting to General Superintendent Eastern Lines, Montreal. Office, Portland, Me.

Grand Trunk Pacific Ry.—The position of Trainmaster at Melville, Sask., held formerly by C. B. MUTCHLER, whose appointment as Assistant Superintendent there was announced in our last issue, has been abolished.

R. A. HARLOW, heretofore instrument man, has been appointed Roadmaster, Pacific to Prince Rupert, B.C., vice O. Carlson, on leave of absence through illness. Office, Prince Rupert, B.C.

Lehigh Valley Rd.—F. V. HIGGENBOTTOM has been appointed Canadian Passenger Agent, Toronto.

E. R. THORPE, heretofore in G.T.R. service, has been appointed General Agent, L.V.R., in charge of Freight and Passenger Traffic, Toronto.

Michigan Central Rd.—W. A. BECKER, heretofore appointed Local Freight Agent, St. Thomas, Ont., vice W. H. King, retired on superannuation.

Pacific Great Eastern Ry.—G. E. McDONALD, General Manager, is reported to have resigned, to enter the Blackstone Coal Co.'s service at Edmonton, Alta.

Pere Marquette Ry.—F. H. ALFRED, heretofore Federal Manager, Pere Marquette Rd., (U.S.R.A.) has been appointed President and General Manager. Office, Detroit, Mich.

E. N. Brown, heretofore Chairman and President, has resigned the position of President, but retained that of Chairman of the Board.

J. L. CRAMER, heretofore Federal Treasurer, Pere Marquette Rd., (U.S.R.A.) has been appointed Vice President, Treasurer and Assistant Secretary. Office, Detroit, Mich.

F. M. GOODFELLOW, heretofore chief clerk, London, Ont., has been appointed Travelling Freight and Passenger Agent, London, Ont., vice W. M. Guy, promoted.

W. M. GUY, heretofore Travelling Freight and Passenger Agent, London, Ont., has been appointed Division Freight Agent, London, Ont., vice R. W. Youngs, deceased.

W. E. MARTIN, heretofore Treasurer, P.M.R. Co., has been appointed Assistant Treasurer. Office, New York.

S. L. MERRIAN, heretofore General Solicitor, Pere Marquette Rd., (U.S.R.A.) has been appointed General Counsel. Office, Detroit, Mich.

Union Pacific Ry.—G. W. VAUX, latterly General Manager, Ziegler Co., Ziegler, Ill., has been appointed General Agent, U.P.R., at Toronto.

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Daylight Saving and Standard Time—There will be no alteration of railway time this year under daylight saving, for Canada as a whole, according to a statement, reported to have been made by a Railway Association of Canada's official Mar. 24, but where municipalities and districts enact daylight saving bylaws provision is made so that the railways may alter their schedules of local trains to suit local conditions if thought desirable.

# Canadian National Railways Construction, Betterments, Etc.

Bridgewater Station on the Halifax and South Western Ry. was destroyed by fire Mar. 9, the loss being estimated at $10,000. It contained the auditing department, dispatcher's and telegraph offices and passengers' waiting room.

St. John, N.B., Station—A press report states that owners of property on North St., St. John, N.B., have been notified that the properties have been acquired for the Canadian National Rys. The government is said now to own all the properties from the station along North St. to the Mission church on Paradise Row. The object of the purchase is reported to be the erection of a new station, which it is stated will cost about $1,000,000. A. P. Barnhill, K.C., one of the C.N.R. directors, is reported to have stated that plans had been definitely settled, and that before anything was arranged there would have to be a conference with the C.P.R. as to track levels.

Rebuilding of Canadian Northern Ry. between Cap Rouge and Portneuf. This section of line, some 30 miles, which was washed out in 1918, and the operation of which had to be abandoned, has been repaired after 5 months work, and train service has been resumed. The principal portion of the work consisted of heavy rock filling, for shore protection, and took approximately 150,000 cu yd. of heavy rock, also the rebuilding and filling of approximately a mile of crib protection work. The track had to be raised for some miles, in some places as much as 10 ft., the filling being made of loose rock, and later on the track was lined up and ballasted with broken stone. On account of the high cliffs, in close proximity to the line, large culverts had to be built to carry off the heavy flow of water from the many creeks and other natural drainage. The following large equipment was used on the work: 2 steam shovels; about 50 12-20 yd. air dump cars; 5 locomotives, 2 heavy rock drilling outfits and cranes. V. T. Bartram, Toronto, was the contractor.

Gosford Branch.—The opening of the Gosford branch line for traffic is being advocated by the district board of trade. The section of the line from Valcartier to River Aux Purs, 5.25 miles, is reported to have been out of operation for some years on account of the condemnation of a bridge over the Jacques Cartier River.

St. Charles River Bridge.—We are officially advised in regard to the bridge to be erected across the St. Charles River at mile 8.7 from Quebec, Batiscan Subdivision, that the substructure will consist of a through plate girder span, 106 ft. 0¾ in. center to center and will be erected on the two existing masonry abutments. The contract for the bridge has been let to the Dominion Bridge Co.

Chaudiere Station.—The Minister of Railways, replying to questions in the House of Commons Mar. 17, said Chaudiere Station in Levis County, Que., is under the Dominion Government's control. The station there was burned about four years ago and was replaced by a box car, but the government is not aware that this car had been condemned by the board of health. It is proposed to build a station at Chaudiere, but on account of the old building having been destroyed, as a result of a collision for which the G.T.R. was responsible, the question of the size and cost of the new station has been a matter of negotiations with the G.T.R., and the government expects to arrive at a definite understanding on the matter in the near future.

Acadia Valley Line.—The Board of Railway Commissioners has approved of a right of way plan for this branch as located through Tps. 27 and 26, Ranges 28 and 29, west, 3rd meridian, Sask., mile 0 to 11.88, and has authorized construction across 15 highways there. A contract for the construction of this line, 25 miles, was let in April, 1919, to Grant Smith & Co. and MacDonnell, Ltd., Vancouver, and considerable grading has been done.

Munson to Wayne Second Treak.—The Board of Railway Commissioners has authorized the building of a second track across 8 highways, between Munson and Wayne, Alta. The distance between these two points is 18 miles, and 6.75 miles of the second track work was completed in 1919.

Alberta Branch Lines.—Replying to questions in the Alberta Legislature Mar. 16, the Premier gave information relative to the construction of Canadian Northern Ry. branch lines, for the construction of which the legislature authorized a guarantee of bonds as to principal and interest. The lines to be built were: From Strathcona, via Camrose to Calgary, 230 miles, and from north of Calgary to Lethbridge, 125 miles, a total of 355 miles. The southerly 96.87 miles are yet to be built.

From the crossing of above line and Little Bow River south, via Macleod to the International boundary, 110 miles, none of which has been built.

From Camrose to Vegreville, 45 miles, which has been completed.

From near Macleod to the western boundary of Alberta, 65 miles, none of which has been built.

Bonds in respect of these four lines were sold to the extent of 88.245% of the guarantees executed, and there remains to the Provincial Treasurer's credit, $1,201,791.85, of the proceeds, which will be paid out on further progress of the works. There was paid to the company in respect of the uncompleted sections of the lines $188,600 for the first, $182,325 for the second, and $86,282.30 for the third.

Edmonton Car Shops.—A press report states that the penitentiary buildings at Edmonton, Alta., are being pulled down, and that the site will be utilized for erecting car shops for the Canadian National Rys., including the Grand Trunk Pacific Ry.

Peace River Branch.—A press report of Mar. 19, stated that the trestle over the Little Paddle River had been completed and that track laying was in progress beyond that point, and that it was expected to reach Greencourt about a week thereafter.

Canadian Northern and Grand Trunk Pacific Ry. Connections.—The Board of Railway Commissioners has authorized the Department of Railways to connect Canadian Northern Ry. tracks with Grand Trunk Pacific Ry. tracks, at Lobstick, Chip Lake, Snaring Jct., Pochantas and Henry House, Alta. These points are all in the Jasper Park coal mining areas.

**Kamloops - Vernon - Kelowna - Lumby Line.**—The Board of Railway Commissioners has approved revised location plans of this line, mile 41 east from Kamloops Jct., B.C.

**Vancouver Island Lines.**—A press report states that the Victoria City Council has granted permission for the erection of a temporary frame station building and freight shed north of Point Ellice Bridge, near Esquimalt Road, reserving the right to cancel the permit by giving six months notice. The permanent station will be, it is said, erected near Johnson St. (Mar., pg. 123.)

# Traffic Orders by Board of Railway Commissioners.

**Track Scale Allowances and Tollerance.**

General order 283, Feb. 24.—Re track scale allowances and tolerance; Upon hearing the matter at Ottawa, Mar. 18, 1913; Vancouver, May 19, 1913; Calgary, May 26, 1913; Edmonton, May 27, 1913; Regina, May 29, 1913; Winnipeg, May 30 1913, and Fort William, June 4, 1913; the Canadian Pacific, Grand Trunk, Grand Trunk Pacific, Canadian Northern, Canadian Northern Quebec, and Ottawa & New York Railways, Canadian Freight Association, Canadian Manufacturers' Association, Canadian Lumbermen's Association, the Montreal, Toronto, Edmonton, Winnipeg and Regina boards of trade, British Columbia Lumber & Shingle Manufacturers, and Massey-Harris Company, being represented at the hearings, and what was alleged; and upon reading the further written submissions filed, it is ordered, with respect to freight traffic referred to herein, carried between points in Canada, that railway companies publish and file tariffs to provide for the following allowances per car from the ascertained gross weights of loaded cars; subject to the condition that the said allowances shall not operate to reduce the net weights of the ladings of the cars below the minimum carload weights provided for in the tariffs applicable thereto:

1. For temporary or permanent racks, on flat or gondola cars, loaded with bark, provided the weight of the racks is not included in the stencilled tare of the car is . . . . 1,000 lb.

2. For temporary protectives as follows:

(a) Blockage, dunnage or temporary racks, in connection with carload shipments of agricultural implements, machinery, stoves, acid in carboys, and vehicles of all descriptions . . . . Actual weight, but not more more than 650 lb.; the shipper to certify to the weight of the said protectives on the shipping order and bill of lading

(b) Temporary racks, stakes, standards, strips, braces, or supports, in connection with carload shipments of commodities, other than those specified above, requiring such provision for safe transportation when loaded on flat or gondola cars . . . . Actual weight when ascertainable, but not more than 500 lb.; the shipper to certify to his ascertained weight of the said protectives on the shipping order and bill of lading.

3. For lumber used by shippers in lining box (not refrigerator) or stock cars for shipments of perishable freight. . . . . Actual weight, but not more than 800 ft. at 2½ lb. a foot; the shipper to certify to the measurement of the lumber so used on the shipping order and bill of lading. Also, a further allowance of the actual weight, but not exceeding 500 lb. of the stove and fuel, if furnished by the shipper.

4. For foreign matter not part of the lading, such as snow, ice, manure, or refuse, in or on cars at the time of weighing . . . . An estimated allowance adequate to the actual conditions in each case.

And it is also ordered that, irrespective of the aforesaid allowances, the tariffs of the said railway companies include the following definition and directions, viz.:

For tolerance, i.e., variations in weights disclosed in check-weighing or reweighing passed without alteration of the billed weight:

(a) On ashes, brick, cinders, clay, drain tile (soft), dolomite, ganister, gravel, mill-scale, ore, sand, slag, stone (all kinds except "cut") and other similar bulk freight, loaded on flat or open top cars . . . . 1% of the weight of the lading, but not less than 1,000 lb. a car.

(b) On all other freight (including coal and coke) the weight of which is not subject to change from its inherent nature . . . . 1% of the weight of the lading, but not less than 500 lb. a car.

**Charges for Heated Refrigerator Cars.**

General order 284, Mar. 8—Re application of Canadian Freight Association, on behalf or railway companies for an order rescinding general order 173, Oct. 26, 1916, and authorizing the said railway companies to publish and file charges for the use of heated refrigerator cars on the basis of 1½c a car per mile, with a minimum charge of $2 a car, in addition to the regular freight charges. Upon hearing the matter at Toronto, April 13, 1917; Ottawa, April 17, 1917; Regina, June 21, 1917; Vancouver, Nov. 21, 1919; Calgary Nov. 27, 1919; Edmonton, Nov. 28, 1919; Saskatoon, Nov. 29, 1919; Regina, Dec. 1, 1919; Winnipeg, Dec. 2, 1919; Fort William, Dec. 3, 19179; and Ottawa, Jan. 7, 1920, in the presence of representatives of Canadian Freight Association, Canadian Manufacturers' Association, the Toronto, Montreal, Winnipeg, Regina and Calgary boards of trade, Ontario Fruit Growers' Association, Nova Scotia Fruit Growers' Association, British Columbia Credit & Traffic Association, Nova Scotia Shipping Association, Western Canada Fruit Jobbers' Association, Ontario Vegetable Growers' Association, Niagara Peninsula Fruit Growers' Association, Quebec Department of Agriculture, Canadian Pacific and Grand Trunk Railways, Canadian National Rys., and Michigan Central Rd., and what was alleged; and upon reading the further written submissions filed it is ordered that the general order 173, Oct. 26, 1916, be amended to permit increases in existing charges for heating refrigerator cars by the carriers, in addition to the freight rates pertaining to the ladings thereof, and also in addition to the charges, if any, for the use of the said cars, as follows:

(a) Between points west of and including Port Arthur, Ont.; also between points east of and including Westfort, Ont., from 1c a car per mile, subject to a minimum total charge of $2 a car, to not more than 1½c a car per mile, subject to a minimum total charge of not more than $2 a car.

(b) From points east of Port Arthur to points west of Westfort, and from points west of Westfort to points east of Port Arthur, the maximum charges authorized by the general order 173, when increased not more than 50% to apply.

And it is also ordered that the tariffs to give effect to this order may be published and filed not less than seven days previously to the date, or dates, on which they are intended to come into force.

**Average Demurrage Plan Refused.**

General order 285, Mar. 2.—Re application of Canadian Manufacturers' Association for an order directing the extension of the Canadian Car Demurrage Rules, so as to provide for what is known as the average demurrage plan. Upon hearing the matter at Toronto, April 25, 1911; Vancouver, May 19, 1913; Calgary, May 26, 1913; Edmonton, May 27, 1913; Regina, May 29, 1913; Winnipeg, May 30, 1913; Fort William June 4, 1913, and Ottawa, June 16 and 17, 1913, in the presence of representaives of Canadian Manufacturers' Association, Canadian Retail Coal Dealers' Association, Canadian Lumbermen's Association, Canadian Car Service Bureau, Montreal Lumber Association, Montreal Grain Exchange, Toronto, Vancouver, Calgary, Edmonton, Regina, Winnipeg and Montreal boards of trade, Canadian National Rys., Canadian Pacific, Grand Trunk and Grand Trunk Pacific Railways, Michigan Central and Pere Marquette Rds., Winnipeg shippers, Great West Saddlery Co., Winnipeg Sandstone Brick Co., D. Ackland & Sons, Manitoba Bridge & Iron Works, Dominion Bridge Co., the Beaver Soap Co., Vulcan Iron Works, J. D. Clark Billiard Co., Winnipeg Cabinet Factory, Parker Whyte, Ltd., Alaska Bedding Co., Canadian H. W. Johns-Manville Co., Manitoba Linseed Oil Mills, Martin-Senour Co., Canada Cement Co., Alsip Brick Tile & Lumber Co., Canadian Carbon Co., Winnipeg Steel Granary & Culvert Co., Gurney Northwest Foundry Co., Winnipeg Paint & Glass Co., Manitoba Gypsum Co., Perfection Concrete Co., George Gale & Sons and Anthes Foundry, and what was alleged; and upon reading the further written submission filed it is ordered that the application be refused.

**Transportation of Dangerous Articles Other Than Explosives.**

General order 287, March 22.—Re general order 203, Aug. 11, 1917, approving the regulations for transportation by freight of dangerous articles other than explosives, as amended by general orders 206, 207 and 260, Sept. 7, Oct. 26, 1917, and March 17, 1919 and re application of People's Gas Supply Co. for order repealing or amending second paragraph of rule 1861 (j) of the regulations aforesaid. Upon hearing the matter at Ottawa, June 10, 1919, the People's Gas Supply Co., Canadian Railway War Board, Bureau of Explosives, Compressed Gas Manufacturers' Association, L'Air Liquide Society, and Commercial Acetylene Supply Company, being represented and what was alleged, it is ordered that the general order 260, March 17, 1919, be amended by striking out the second paragraph of clause (j) of rule 1861, and substituting therefore the following, namely:

"Cylinders containing acetylene gas must not be shipped unless they were charged by a person, firm, or company,

having possession of complete information as to the nature of the porous filling, the kind and quantity of solvent in the cylinders, and the meaning of such markings on the cylinders as are prescribed by the board's regulations and specifications applying to containers for the transportation of acetylene gas.

"That every manufacturer of cylinders for the shipment of acetylene gas in Canada shall file with the Inspector of the Bureau of Explosives, at Toronto, complete information as to the nature of the porous filling, the kind and quantity of solvent in the cylinders, and the meaning of such markings on the cylinders as are prescribed by the board's regulations, together with the serial numbers of the cylinders, using a particular kind of filler; and that, upon application of any manufacturer of acetylene gas to the Bureau of Explosives for information necessary to enable him to comply, in the recharging of the same, with the regulations of the board, the same shall be furnished."

### Shortage on Flour.

29,424. March 3.—Re application of T. H. Taylor Co., complaining that a carload of flour loaded and sealed by them at Chatham, Ont., out-turned a shortage at Sydney, N.S., and that its claim therefor has been refused by the carrier, on the ground that the car reached its destination with the applicant company's seals intact, and applying for a ruling that the checking out of the lading was an obligation on the carrier. Upon reading what is alleged in support thereof and on behalf of the Canadian Manufacturers' Association, it is ordered that the complaint be dismissed.

### Freight Rate on Shoddy Blankets.

29,435. March 2.—Re application of the Freight Adjusting Bureau, Vancouver, B.C., for a ruling of the board that shoddy blankets are entitled to the rate provided for specified articles of drygoods in item 250 of Canadian Freight Association's Commodity Tariff 1-A, C.R.C. 14. Upon hearing the application at Vancouver, Nov. 21, 1919, the applicant and Canadian Freight Association being represented and what was alleged, and upon reading the board's Chief Traffic Officer's report, and its appearing that item 250 of the said tariff must be read in connection with item 265, it is ordered and declared that shoddy blankets shipped since July 31, 1918, were and are entitled, by the language of the tariff, to the rate of $2.65, provided for in item 250 of the said tariff.

### Classification of Road Graders.

29,436. March 2.—Re application of United Grain Growers of Winnipeg, for a reduction in Canadian freight classification rating of road graders, set-up, from double first class to first class, subject, when loaded on flat cars, to a minimum weight of 5,000 lb. Upon hearing the matter at Winnipeg, Nov. 15, 1919, the applicants and Canadian Freight Association being represented, and upon reading the further written submissions filed, and the report of the board's Chief Traffic Officer's report, it is ordered that the application for the first class rating be dismissed, and it is also ordered that the rating of road graders, set up, be reduced to 1½ first class, subject to rule 6 of Canadian Freight Classification 16, as amended by Supplement 10 thereto; the said change to be included in the forthcoming Supplement 13 to the said Classification, and to come into force on the effective date thereof.

### Disallowance of Milk Tariffs.

29,473. March 9.—Re application on behalf of National Dairy Council for an order suspending C.P.R. Tariff C.R.C. no. E-25, to take effect June 1, 1919, increasing rates on milk, in passenger or mixed passenger and freight, train service; the application of the Toronto Board of Trade for an order suspending G.T.R. Tariff 693, C.R.C. no. E-2756, effective June 1, 1919, and other similar tariffs, increasing rates for the transportation of milk in baggage oars; and order 28,355, May 28, 1919, suspending certain increased tariffs. Upon hearing the matter at Ottawa, June 10, 1919, the National Dairy Council, Toronto Board of Trade, Farmers' Dairy Co., Toronto; Ottawa Dairy Co., High Cost of Living Commission, Montreal Dairy Co., Border Chamber of Commerce, Windsor, and C.P.R. and G.T.R., being represented, and upon reading the further written submissions filed, it is ordered that the following tariffs, viz.:

Canadian Pacific Ry. C.R.C. no. E-25; Grand Trunk Ry. C.R.C. no. E-2756; Canadian National Ry. C.R.C. no. E-29; New York Central Rd. C.R.C. no. 249; Quebec, Montreal & Southern Ry. C.R.C. no. 271; Napierville Jct. Ry. C.R.C. no. 113; Montreal & Southern Counties Ry., Supplement 2 to C.R.C. 22,

be, and they are hereby, disallowed.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and Public Elevators in the East.

| Week ended Mar. 5, 1920. | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William | | | | | | |
| C.P.R. | 95,154 | 22,048 | 73,931 | ..... | 43,063 | 234,196 |
| Empire Elevator Co. | 279,341 | 217,855 | 206,116 | 9,208 | 50,276 | 762,796 |
| Consolidated Elevator Co. | 265,605 | 64,928 | 57,511 | 23,217 | 13,322 | 424,583 |
| Western Terminal Elevator Co. | 526,205 | 30,658 | 97,736 | ..... | 50,149 | 704,748 |
| Ogilvie Flour Mills Co. | 258,099 | 28,327 | 24,888 | 14,806 | 8,208 | 334,328 |
| G. T. Pacific | 791,369 | 327,836 | 42,467 | 18,610 | 33,599 | 1,213,881 |
| Grain Growers' Grain Co. | 937,391 | 294,577 | 199,735 | ..... | 65,004 | 1,496,707 |
| Fort William Elevator Co. | 204,714 | 354,870 | 36,265 | 4,739 | 16,559 | 617,147 |
| Northwestern Elevator Co. | 456,381 | 31,993 | 45,614 | 44 | 69 | 534,051 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 1,904,709 | 791,837 | 281,864 | 225 | 59,052 | 3,037,688 |
| Sask. Co-op. Elevator Co. | 1,539,422 | 457,588 | 76,192 | 40,522 | 27,569 | 2,141,293 |
| Canadian Government Elevator | 188,744 | 99,308 | 27,632 | 55,971 | 17,763 | 389,418 |
| Thunder Bay | 368,766 | 499,629 | 99,819 | 6,956 | ..... | 994,266 |
| Davidson and Smith | 95,441 | 35,532 | 13,860 | ..... | ..... | 146,871 |
| Eastern-Richardson | 372,532 | 194,664 | 49,372 | 9,340 | 35,581 | 661,489 |
| Total Terminal Elevators | 8,283,822 | 3,451,650 | 1,333,002 | 186,836 | 441,349 | 13,696,659 |
| 1. Private Terminal Elevators | 260,692 | 165,875 | 116,711 | 1,170 | 3,184 | 547,632 |
| 2. Country Elevators | 17,045,861 | 11,288,883 | 1,751,343 | ..... | 359,144 | 30,485,231 |
| *Total Interior Terminal Elevators | 2,602,834 | 1,402,015 | 107,860 | 7,735 | 21,816 | 4,142,260 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 4,500 | 103,314 | 109,072 | ..... | ..... | 216,886 |
| Midland Elevator Co. | 28,071 | 295,062 | 24,561 | ..... | ..... | 347,694 |
| Tiffin, G.T.P. | 285,665 | ..... | ..... | ..... | ..... | 285,665 |
| Port McNicoll | 306,267 | 426,444 | 3,415 | ..... | ..... | 736,126 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 520,278 | 56,100 | ..... | ..... | ..... | 576,378 |
| West Can. Flour Mills Co., Ltd. | 134,094 | ..... | ..... | ..... | ..... | 143,094 |
| Toronto Campbell Flour Mills Co. | 139,081 | 21,083 | ..... | ..... | ..... | 160,164 |
| Kingston— | | | | | | |
| Commercial Elevator Co. | ..... | 33,284 | ..... | ..... | ..... | 33,284 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 60,793 | 185,909 | 52,760 | ..... | 3,439 | 302,901 |
| Montreal Warehousing Co. | 441,323 | 21,192 | ..... | ..... | ..... | 426,515 |
| Ogilvie Flour Mills Co. | 265,848 | 2,200 | 7,492 | ..... | ..... | 275,540 |
| Quebec Harbor Commissioners | ..... | 21,116 | ..... | ..... | ..... | 21,116 |
| West St. John, N.B., C.P.R. | 356,458 | ..... | 274,317 | ..... | ..... | 630,775 |
| St. John, N.B., Can. Nat. Rys. | 412,355 | ..... | 38,441 | ..... | ..... | 450,796 |
| Halifax, N.S., Can. Nat. Rys. | 275,232 | ..... | ..... | ..... | ..... | 275,232 |
| Total Public Elevators | 3,721,165 | 1,165,704 | 510,058 | ..... | 3,439 | 5,400,366 |
| Total Quantity in Store | 31,914,374 | 17,514,127 | 3,818,974 | 195,741 | 828,932 | 54,272,148 |

*Quantity for each individual interior terminal elevator not received.

## Railway Finance, Meetings, Etc.

**Algoma Central and Hudson Bay Ry.**—Philadelphia, Pa., press dispatch, Mar. 13, President Cunningham, of the Lake Superior Corporation, has announced that negotiations have been completed for the re-financing of the Algoma Central and Hudson Bay Ry. The terms are: The present outstanding issues of $10,080,000, and H. B. R. 1st mortgage 8% bonds, fully guaranteed by the Lake Superior Corporation as to principal and interest, to be converted into an issue of $10,080,000 3% bonds, guaranteed by the Lake Superior Corporation as to the first 10% of the principal, and as to the first 1% of the annual interest.

**International Railway of New Brunswick**—The Lieutenant Governor in his speech at the opening of the N.B. Legislature Mar. 11, announced that during the recess bonds guaranteed by the N. B. Government in connection with the construction of the International Ry. of N. B. to the amount of $896,000 had been paid off by the company and cancleled.

**Canadian Northern Pacific Ry. Construction Suit.**—S. D. Hogan, of Innisfree, Alta., is suing the National Construction Co., Mackenzie, Mann & Co., Ltd., the Canadian Northern Pacific Ry., and the Canadian National Rys. in the Alberta Supreme Court, to recover $115,898.29 for alleged breach of contract. The claim states that plaintiff in Mar., 1912, contracted to build a section of the Canadian Northern Pacific Ry., between mile 34.8 and 48.18, west of the Yellowhead Pass Summit, the work to be completed by Aug. 1914. The contract was completed within the time specified and involved an expenditure of $1,075,05.77 at contract prices, and $21,112.86 for additional work. Plaintiff states that there was paid on account $98,027.34, and he is now suing for the balance with interest from 1914.

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TORONTO, CANADA, APRIL, 1920.

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# Removal of Grain by Rail from Fort William and Port Arthur Elevators.

In the House of Commons on Mar. 19, J. A. Robb, M.P. for Chateauguay-Huntingdon, Que., called the Minister of Railway's attention to a letter from a Winnipeg grain shipping firm, dated Mar. 13, stating that there had been no coarse grain shipped out of Fort William, for domestic purposes, since Mar. 1. The Minister of Railways in reply read a letter from Chief Commissioner F. B. Carvell, of the Board of Railway Commissioners to the Deputy Minister of Railways, dated Mar. 19, as follows: "In reply to yours of yesterday re the shipment of oats from the head of the lakes, I beg to state that the whole story of what the board has done since the close of navigation would be a rather lengthy one. Early in the season we attempted to regulate loadings out of elevators in an equitable manner to all parties concerned, and on Dec. 6 we received a telegram from Chairman Stewart, of the Wheat Board, as follows:

"'The C.P.R. through Grant Hall has assured us an all rail movement of grain from Fort William east of a minimum of 125 cars a day. We would like this apportioned as follows: 20 cars for coarse grains domestic and export, 40 cars for domestic wheat, 65 cars for export wheat to Atlantic seaboard ports including Portland and St. John. Canadian National Rys. through C. A. Hayes have assured us of minimum movements of 50 cars a day which we would like apportioned as follows: 15 cars for coarse grains domestic and export, 10 cars for domestic wheat, 25 cars for export wheat to Atlantic seaboard ports, including Portland and Halifax. Undoubtedly roads can improve this movement and haul more domestic wheat and export and domestic coarse grains than the total of 85 cars a day and until further advised we would like these interests to benefit to the full extent of the increased movement, but the 65 cars on C.P.R. and 55 cars on Canadian National for export wheat are irreducible daily average minimums and should take precedence over other grains. Will you be kind enough to confirm this to the railway companies accordingly?'

"Some discussion took place with the railways and with Mr. Stewart about issuing an order, but all parties agreed that, in so far as it was possible, 175 cars a day would be shipped out. The Wheat Board asked for a priority order for the 85 cars a day for export wheat. This we declined to grant, until satisfactory evidence was furnished as to dates of sailings, tonnage, etc., and, as this data has never been furnished the board, we have, therefore, refused to give a priority order; but there was a general understanding, as we understood it, between the railways, the Wheat Board, the Lake Shippers' Association, and ourselves that the percentage of different grains, both export and domestic, as set forth in Mr. Stewart's telegram would be adherred to as closely as possible. Unfortunately, the weather conditions during January and February made it impossible for the railways to furnish 175 cars a day for this particular movement, and it very soon became apparent that some interests would not be able to receive the amount of grain required. In the course of a few weeks, this board became convinced that coarse grains were not receiving their due percentage of shipments, and, therefore, in order to see that our intentions were carried into effect, on Jan. 30 this board issued an order the operating portion of which is as follows:

"'That on Monday, Feb. 2, and on each succeeding Monday until otherwise ordered by the board, the C.P.R. provide at least 125 cars and the Canadian Northern Rys. at least 50 cars at the elevators at Fort William and Port Arthur, for the receipt, handling and carriage of grain, other than wheat, also flaxseed, for domestic use in Canada; the said cars to be allocated in proportion to the cars ordered for which the necessary documents have been surrendered.'

'During the next three Mondays, including Feb. 16, 545 cars of domestic coarse grains, mostly oats, were shipped out, and, on account of severe weather conditions, we then concluded that coarse grains, mostly oats, were shipped their fair percentage, the result being that, on Feb. 17, this order was suspended. Since that date up to Mar. 13, 211 cars of domestic coarse grains have been shipped, more than 90% of which would be oats. In addition to the above statement, according to information furnished us by the Lake Shippers' Association on Mar. 16, for the fortnight ended Mar. 13, 420 cars of coarse grain have been shipped from western points direct to the east. During the same period, the Lake Shippers' Association inform us that a total of 153 cars of domestic grains of all kinds have been furnished the local mills and 819 cars of export wheat. This board receives daily from the Lake Shippers' Association, the C. P.R. and the Canadian National statements of the number of cars loaded and handled, and at present we are subdividing the coarse grains under different headings, so that we are in a position to know exactly how much of each kind of grain is moving out daily, and, early in this present week, we came to the conclusion that coarse grains were not receiving their fair proportion. Telegraphic corespondence was entered into with the Lake Shippers' Association on Mar. 15, and, after the exchange of a number of telegrams, on Mar. 18 the following order was issued by wire:

"'Your telegram yesterday received re coarse grain movement from head of lakes. This board requires that beginning tomorrow and until further orders 20% of all cars loaded from all elevators at head of lakes be assigned to coarse grains for domestic consumption which is practically the percentage set forth in Mr. Stewart's telegram to me of Dec. 26, 1919. Please confirm."

Yesterday afternoon confirmation was received as follows: "If the daily returns require a change in these directions, the board will not hesitate to take whatever action may be necessary. I think, however, I shall point out the very serious conditions under which grain has been handled during the past two months, and I am satisfied that the railway companies have handled every car which it was humanly possible to get over their roads. Their first great difficulty has been weather conditions not only around the head of the lakes, but at the ter-

minals, where hundreds of cars have been frozen in from Halifax, N.S., to Portland, Me., and probably never in the history of railroading in this country have as many cars been held up at ocean terminals, owing to weather conditions, as have been in that condition since the first day of February. Added to this have been the most abnormal weather conditions from the operating standpoint. but probably even beyond both these difficulties has been the shortage of cars, due very largely to the fact that there are about 20,000 more Canadian cars on United States lines than there are U.S. cars on Canadian lines, and without cars it is impossible to handle freight. I again wish to emphasize the splendid manner in which the railway companies have worked with this board, in order to produce the maximum result and have ever been ready to carry out any wish which we have expressed."

# Attachment for Ballast Spreader.

The attachment to a ballast spreader, illustrations of which, from photographs taken on a locomotive back, at a terminal on the Eastern Lines C.P.R., are given herewith. It consists of a steel channel frame, designed to fit snugly over the front of the spreader plow, over all, without the removal of anything on the spreader. The channel contains a set of chisels, and is fastened to the front of the spreader plow by special bolts, simply and effectively. Each ice cutting chisel is held in frame independently; the chisels are interchangeable, and can be quickly and individually removed for redressing. They are also adjustable in the frame to regulate the cut desired below the top of rail. In this way they can be reground several times, or until the cutting portion is entirely used up and worn out, thereby extending the life of cutters to a maximum. A pair of flanged shoes is fastened under the frame, and spreader plow front which rides the rails, similar to that of a snow plow, and actuates the device to the center line of the track. Its construction is simple, durable and inexpensive, combined with special features which render it absolutely effective, for freeing railway tracks, for safe and economical operation, of any ice, frozen cinders and other elements encountered in winter accumulation, which is especially found in yard terminals, where the climate reaches a very low temperature, and material which could not be removed by any other known means, other than hand picking, which involves manual labor. This renders the ice cutting attachment an enormous labor saver.

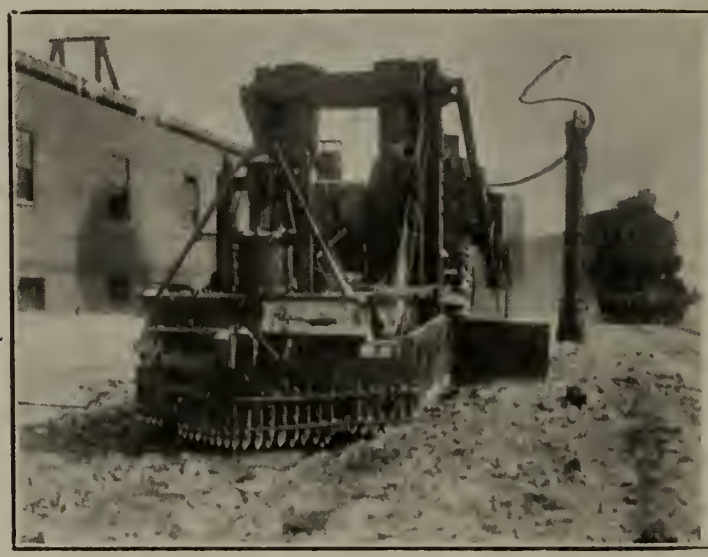


Figure 1.

Figure 2.

Figure 3.

Fig. 1 shows the condition of the tracks previous to running of the ice cutter, accumulation of ice, cinders and other sediments being well above the top of the rails and frozen very hard. It also shows the arrangement of the cutting chisels in general on the attachment, Fig. 2 shows the machine and device in operation, and Fig. 3 shows the results obtained in one operation, the track freed and cleaned out well below top of rails, the depth varying according to desire, as the cutters are adjustable, and cut can be regulated to the depth required.

This attachment can be applied conveniently to any car or spreader, but it is best to attach it to a spreader, and also the more economical, as the spreader is in winter used freely for the removal of snow, and this avoids the tying up of other equipment which would be the case if it was applied to a car.

The device was tried on the C.P.R. in 1918-1919, and proved so successful that this winter there are some 20 attachments in service on the Eastern Lines. One man operates the spreader, easily raising and lowering it for obstructions, and it will do the work of hundreds of men, and besides the saving in this respect, it gives quick use of yard tracks, as it only takes a few minutes to remove the cars, run the ice cutter through, and put the cars back.

# The Canadian Pacific Railway Officials' Annual Dinner at Toronto.

The C. P. R. officials' fourth annual dinner, the holding of which was suspended during the war, but was revived at Montreal in Mar. 1919, was held at the King Edward Hotel, Toronto, on Mar. 13, being attended by some 600 officials, from all the principal points on the system, from the Atlantic to the Pacific, and from Great Britain and United States. Special trains were run from Montreal and Winnipeg to Toronto, for those attending from those districts. Those at the head table were Sir Geo. McLaren Brown, European General Manager, who presided; His Honor L. H. Clarke, Lieutenant-Governor of Ontario; Hon. Henry Mills, Ontario Minister of Mines; the Mayor of Toronto; W. G. Chester, Chairman, C. P. R. Employes Co-operative Board, and the following company officials: E. W. Beatty, K.C., President; Grant Hall, Vice President; W. R. MacInnes, Vice President, Traffic; A. D. MacTier, Vice President, Eastern Lines; W. N. Tilley, K.C., Consulting Counsel; C. Murphy, General Manager, Western Lines; F. L. Wanklyn, General Executive Assistant; Col. J. S. Dennis, Chief Commissioner of Colonization and Development; J. Leslie, Comptroller; C. E. E. Ussher, Passenger Traffic Manager; E. Alexander, Secretary; H. E. Suckling, Treasurer; H. A. Beatty, M.D., Chief Medical Officer; J. H. Walsh, General Manager, Quebec Central Ry.

During the service of the dinner, and before the toasts, a musical entertainment was given, and a number of moving pictures were shown, illustrating the C. P. R. from the Atlantic to the Pacific. Letters of regret at inability to attend were read from the Ontario Premier, from Lord Shaughnessy, Sir Edmund Osler, and Sir John Eaton of the company's directorate; I. G. Ogden, Vice President, Finance, and D. C. Coleman, Vice President, Western Lines, Lord Shaughnessy expressed the earnest hope that the occasion would be as interesting, inspiring, and enjoyable as it had been in the past. I. G. Ogden said: "I regret that it will not be possible for me to join you at the dinner, where I am sure the best of feeling will prevail, and at which some of the addresses to be given will be as good to be well digested as the best things at the dinner can be. My feelings to the officers and employes of the company have only changed since my letter of a year ago to be stronger, and to look more on all connected with the company as my best friends. The more we see and know of other constructions and systems the brighter becomes the C. P. R. star as the brilliant sign of all that is good and best for this our country. It will long remain the great strength on which the people of Canada may well depend. I wish you all an enjoyable and beneficial meeting, which should be looked forward to for renewal each year."

Sir George McLaren Brown in proposing the health of the guests, said: "In some situations, it is almost impossible to keep ones emotions within bounds. My present position, presiding over this gathering of C.P.R. men and their friends in the capital city of my native province, and your more than kindly reception have opened wide the gates for my emotions, and, as it were, have set my mind travelling swiftly backward over my 34 years service with our great Canadian institution, the C.P.R., that standing monument to Canadian intelligent foresight, courage and enterprise—that great organization of which all Canadians must indeed be proud—that great company which has placed Canada on the map. As I look about this gathering, and recognize so many friends of my old C.P.R. days in Canada, I indeed admit it tugs at my heart strings and words fail me; yet I would like to be able to tell you how much this moment means to me. I was delighted when I found that in the ordinary course of my duties I would be able this year to be present at this gathering, but I admit that I was startled, and have not yet recovered from it, when in Montreal a few days ago I was told that I was to preside this evening. I realize my inability to fill the position properly, yet I want you to know how deeply I feel the honor you have done me, and how much I appreciate your extreme kindness. What I have said is, however, not to the toast which it is my privilege to propose, and though I have gone off on a tangent I feel that both our guests, and you, my friends and associates, will under the circumstances forgive my momentary departure from the programme. It is my privilege to propose the toast to our guests whom we so delight to welcome and who so greatly honor us by their presence. Although I am conscious of my inability to do justice to the occasion, I rest easy in mind in the certainty of the enthusiasm of the reception of the toast; the certainty of the sincerity of the welcome of our guests. I couple with the toast the names of four distinguished fellow countrymen who in their respective spheres have made their niche in the community, the Lieut. Governor of Ontario, Mr. Lionel Clark, Hon. Henry Mills, Minister of Mines for Ontario; the Mayor of Toronto, Mr. T. L. Church, and Mr. W. G. Chester, Chairman of the C.P.R. Employes Co-Operative Board. The Lieutenant Governor in his distinguished career has won not only title to great personal honor and success, but to what is of greater importance; he has established the most enviable record in public service which those who know him best will tell you is of far greater satisfaction to him than any personal honors he has gained. In Henry Mills, I think I recognize someone whom I first met years ago when we were both younger in years in the service of our great company. We can both look back on many years of strenuous work, and if he will permit it from an old C.P.R. employe, I would like to tender him personal congratulations on his success, and in saying this I am sure I but echo the congratulations of every member of the old brigade, and as for a quarter of a century or more he merited the confidence reposed in him by the C.P.R. so now onward as a Minister of the Crown, he will, by the exercise of his sound and sterling qualities, merit the confidence of the people of Ontario, and if I might be permitted to indulge in a little prophecy I would predict that before long he will find that his sphere will be extended so as to embrace the greater interests of the whole Dominion. I consider, and you no doubt do too, that we are indeed fortunate in having with us the Mayor of Toronto, Mr. Church, whose name and that of the Queen City of the Dominion are synonymous. His record needs no statement. You find it in this beautiful Canadian city for which he has done so much. I am particularly delighted to be able to pay my tribute to Toronto, for though for a time in my early youth I only saw Toronto from the famous mountain top which characterizes the city of my birth (Hamilton), I had many happy hours in Toronto as a school boy, and despite the prejudices of some of my friends, have constantly to look upon Mr. Church's city as the premier city of Canada. Of course I do not always express myself so emphatically, for the very obvious reason that I have no desire to lose any of my Montreal friends. We welcome Mr. Chester in a dual capacity, as our guest, as chairman of the Employes Co-Operative Board, and as a fellow employe, known and esteemed for many, many years by most of us tonight. I am at a loss to know how to addres him; whether as a guest or as a fellow worker. As a guest, he represents interests of a vast section of the personnel of the organization, and his presence here indicates to me that happy association of all concerned which is so essential to the proper maintainance and advance of the C.P.R., which is a responsibility for us all. So long as mutual friendly understanding, tolerance and confidence is maintained between us employes and the company's executive, none of us who pride ourselves in the association with this great enterprise need have any fear for the future of the company, because it is only in this way that we are enabled to see things in their proper perspective, and thereby guide our course in the best interests of all concerned. If I might be permitted at this moment to make a few observations, which possibly to some may seem irrelevant, which to my mind are quite pertinent, I would like to speak of the phase of my experiences during the past five years. Prior to the war, in working in the ordinary course of my duties I made the acquainance of several of the men prominent in the labor world in the old country, but it was not until the war came that I was privileged to come into intimate association with them. During those years I met many men prominent in the labor world of England on very intimate terms, and I would pay my tribute to them with but few and immaterial exceptions. I found them of sound judgment, of strong character and unselfishly working to the betterment of humanity, and I have not the slightest doubt that you have such men in similar positions in Canada. In England these men urged some very necessary social reforms, which undoubtedly they have definitely brought about, and there are no people in the community more keenly alive to the necessity for observance of law and order, their advocated methods are constitutional and not bolshevistic, and without doubt their counsels in the affairs of state can do only good and not harm."

The Lieutenant-Governor of Ontario responded and proposed the toast of the company, warmly eulogizing its management. Hon. Henry Mills, Ontario Minister of Mines, who, until assuming his present office a short time ago, was a C. P. R. locomotive man, running out of Fort William, responded and proposed the toast of the company's vice-presidents and officers. T. L. Church, Mayor of Toronto, who also responded for the guests, proposed the toast of the company's employes.

### President Beatty's Speech.

E. W. Beatty, K.C., in responding to the toast of the Company, said: "One of the duties which the Company's bylaws, if my preference were consulted, should contain, would be that the Chairman of the company, or some other officer, was obligated to make public speeches. It has unfortunately fallen to my lot to be compelled to speak in several places in Canada since Oct. 1918, and I sincerely believe it is one of the most arduous and least interesting of any of the phases of activity pertaining to the office.

When I was at college in this city, and afterwards when I practiced law in Montreal, I prided myself upon the fact that never on any ocasion, outside of a court or a commission, did I indulge in speech-making, either platform, or after dinner. In my ignorance I considered that that was a creditable record, especially for one who had actively practiced law for upwards of 17 years. It came to pass, however, that my nemesis overtook me, and I was compelled in January, 1919, to make what was my first public appearance in that capacity in Montreal. It was a Sunday night gathering of the Fifth Sunday Association, composed largely of railway men, and wishing to make myself at home with the audience, or rather induce them to be at home with me, and in an amateur effort to secure their sympathy, I told them it was my first appearance as a speaker, and I also told them the following story, which was a true story, and designed also to secure a friendly reception. Some years ago I gave my first and only indication of wealthy instincts by contracting appendicitis. In due course an eminent surgeon spent 13½ minutes of his valuable time in removing the cause of the trouble, and when convalescing I said to the assisting surgeon that I would like to have the fee fixed for this eminent gentleman's exhibition of digital dexterity. He was in due course approached, and the first question he asked was: 'What does Mr. Beatty do?' The answer that he got was: 'He is only a poor lawyer; in fact I understand a very poor lawyer indeed.' The result was that the minimum fee was fixed in my case.

"Now, as I say, I told that story, and after the meeting was over a G.T.R. employe met a C.P.R. employe on the street, and the C.P.R. man said to the G.T.R. man: 'What did you think of the old man's speech?' (The old man being me). 'Well,' drawled the G.T. man, 'He first said that he was a damned poor speaker, and then he told us that he was a damned poor lawyer. On the whole I thought it was a damned poor speech.' So you see there are important personal reasons why I should welcome a change in the functions of the office, which would permit someone else to do the public speaking.

"If ever I do make a speech, however, I can say with perfect honesty that I would rather speak to the C.P.R. officers and employes than to any other audience, and particularly am I glad on this occasion to say a few words because this dinner is taking place in my former home city, a city of great commercial and transportation importance, under somewhat different auspices than former dinners in that we have been honored by several distinguished men, including the Lieutenant-Governor, the presence of all of whom I wish to assure them is very welcome and deeply appreciated. If I might further particularize, without invidiousness. I would like to mention the gratification we all feel at the presence of Hon. Mr. Mills, Minister of Mines, and Mr. W. G. Chester, representing the company's employes. Mr. Mills stepped off one of our locomotives to take his present portfolio, and there is one mineral substance with the use of which he is very familiar. I refer to coal. If there is anything in the way of defects in the quality of coal that he has not discovered, and mentioned, during the last few years, I do not know what it is. With that branch of his duties he comes to his new office extraordinarily well equipped, and I have no doubt will administer the important functions of that office with the same efficiency as he showed in this company's service. Mr. Chester represents the backbone of this enterprise, and he typifies in himself that loyalty to the interests he represents, combined with co-operation and fairness, which has made his association with the company's officers one of great advantage to both.

"I notice, too, among the invited guests, my friend, the Mayor of Toronto, whose insistence upon the rights of his city in all matters of controversy has been remarkable. We have not been able to agree always with the city's contentions, but we have been sensible of the pertinacity with which their views have been presented and the underlying sincerity of their appreciation of the interests of their municipality, which has characterized their presentation. I do not wish you to understand that in all the controversies between the city and the railways, the railways have been right. I know of several cases in which a more generous appreciation of the needs of the municipality, and a general financial support to them by the companies, would have avoided controversies, both bitter and expensive, and of far reaching consequences. In this city and its prosperity this company has a tremendous stake. It is the chief commercial center of Ontario, an enormous shipper and receiver of goods, served by three railways; I think well served by them, but certainly served to the advantage of the traffic on their respective lines. It was my home for many years, and in spite of that its progress continued. I left it 19 years ago, and in spite of that it grew. The city has always been represented by two directors from Toronto, who were among the oldest of those associated with the C.P.R. enterprise. Sir Edmund Osler and the late Mr. W. D. Matthews have been connected with the company for many years. The former for 35 years, and the latter for 31 years prior to his death. From their association on the board, we have received the counsel and assistance which was so essential to the company's succes, and to them we, who have succeeded to the responsibilities of executive and other offices, owe a great and lasting debt of obligation. There has recently been added to the board, in succession to the late Mr. Matthews, Sir John Eaton, who, by reason of his widespread interests as a citizen of Canada, is a very outstanding and important member of this community. The members of the board look forward to his association with them with the greatest pleasure.

"In common with all of you I regret the absence of the company's Chairman, but I realize that it would be asking a good deal of him, especially when his proper ambition is to be relieved of as many duties as possible, in order that he may consider his time entirely his own—in the period of respite which he has earned, by his long, distinguished and notable services to this company.

"On the occasion of our last dinner the railway situation was somewhat different than it is today. It has now advanced another step, in what some regard as being the logical consequences of the first step, and we are met with the rather unique situation of the existence of two strong railway systems in Canada, both backed by adequate credit and both desirous of fulfilling, to the best of their ability, their share in supplying the transportation requirements of the country.

"Some people have regarded the railway situation as highly controversial, and it was, to the extent that the adherents of the two systems of administration, privately owned and publicly owned, have been insistent on the correctness of their respective views, and expressly apprehensive of the results of any other system than that which they advocated. To my mind, to regard it as controversial is now unnecessary and unwise, and the chief consideration of all of us is, as to what will be the result to the country as a whole, in the matter of railway service, and to ourselves in particular, as one of those engaged in supplying a large part of that service. The C.P.R. has been built up, over a long period of years, into an organization of which we may all be conceivably and properly proud, and an organization, the usefulness of which, in public service, is probably now more important than at any other period of its history. It is a company which can only continue to succeed, by being administered with strict integrity, and in accordance with the highest business ethics. Upon its success in service, depends its rewards.

'There has always been competition, and there always will be competition, and the character of business competition does not alter in any of its essential details as the years pass on. Our competitor is and will be a very extensive system, which will probably increase in magnitude. We all hope it will be a success, and we do not need to be altruists in order to harbor that hope. I think I can say to you with perfect candor that no man in Canada has more reason to hope for its success than I have; for two reasons, first, because its success as a railway undertaking means a gradual release of the burden on the taxpayer, and the C.P.R. is a fairly heavy taxpayer, and secondly, because the factors which contribute to its success will ensure the further and continued success of the C.P.R. If the traffic development of the country is such as to support the Canadian National Rys. system, it will undoubtedly be sufficient to add to the support of the C.P.R. You will, therefore, appreciate that on national and selfish grounds the success of the Canadian National Rys. is something that every C.P.R. official should desire. It involves competition, of course, keen competition. Competition, which is both keen and honest, cannot help but redound to the advantage of the competitors, to the improvement in the character of the service they render, and to the resultant advantage of the people and communities served. Personally, I have no fear of the competition adversely affecting this company or its interests, and the reason why I think I have a right to that confidence is to be found in the organization itself, and the char-

acter of the officers and men who comprise it, officers and men who I think can be relied on to play the game of transportation competition as it was meant to be played, adroitly, persistently, aggressively and fairly. In years gone by it was considered an act of proper aggressiveness for one competitor to decry the methods and wares of his rival. This is not the case today. It is foolish to depreciate your competitors outwardly or otherwise, foolish for two reasons; first, because they probably do not deserve your depreciation of them, and secondly, because it is bad business.

"Now in this competition, or in any transportation situation, which exists or is likely to exist in Canada, we have the advantage of the traditions of the company, and the ideals and standards which have been set for us by the men who formerly guided its destinies. It is difficult for me to refer to the former President, and present Chairman, in language other than that of affection and admiration. I have known him so well, so intimately, personally, officially and professionally, for so long a time, that I have a deep appreciation of the influence of his character, and his standards upon the practical commercial prosperity of this company, and the imprint which those personal qualities have upon his associates and subordinates. It would not do for any officer to now forget the debt which he owes in the way of the opportunity of service which has been afforded him by the work of these men who preceeded him. It would equally not do for him to overlook the fact that the high characters of these men contributed largely to their success, and that the standards of personal integrity, official courtesy, and commercial efficiency, which they followed, are just as effective and just as necessary today as ever before. It is not necessary for me to mention to you any of the outstanding factors in connection with the company, which render your association with it so important to you and to it. In the railway alone there has been invested, in cash, in excess of $830,000,000. In its subsidiary enterprises there are many millions, so I am safe, I think, in saying that it is the largest privately owned and operated transportation agency in the world. It has been conservatively financed, supported by the people, and the government, in its inception, in a way which was then considered as only substantial enough to keep it alive for a short time, and in later years, when it made these properties valuable, largely by its own efforts, and by the same efforts increased the value of all lands in the west, the same support has been considered by some critics as overgenerous. For myself I am prepared to leave to the judgment of the people as a whole, as to whether or not the company has fulfilled the onerous obligations imposed upon it, both to the advantage of itself and the country, and I would draw your attention to the finding of the Royal Commission appointed to enquire into railways, that the people of Canada received full value for the support given to the C.P.R. under the agreement of incorporation made in 1881, a conclusion I venture to suggest which was reached by all Canadians before the finding was made.

"I only wish to add one word, a word of the highest possible commendation of the loyalty and efficiency of the officers and men who comprise this corporation and whose efforts have made, and are making it, what it is. Do not imagine that those of us whose principal duties lie in the Windsor Street Station are unmindful of the work which you are doing in other places throughout the vast system of this company. Do not imagine that your troubles are not ours, but believe that whatever can be done in the way of advice, and support, and direction, will be given, not reluctantly or half-heartedly, but with all the ability and sagacity that we possess, because of the unified interest existing in this corporation, which has made the C.P.R. spirit a household word throughout the transportation world."

Grant Hall, Vice President, responded for the vice presidents and officers. W. G. Chester, Chairman, C. P. R. Employes Co-operative Board, responded for the employes. A. D. MacTier, Vice President, Eastern Lines, proposed "Our allied interests."

**Col. J. S. Dennis, C.M.G.**, Chief Commissioner of Colonization and Development, in responding for "Our Allied Interests," said: "I understand the interests I am honored by being called upon to speak for include the Minneapolis, St. Paul and Sault Ste. Marie, the Duluth South Shore & Atlantic, and the Spokane International lines in the United States; those lines in Canada, like the Dominion Atlantic, Kettle Valley and Esquimalt & Nanaimo, operated under these names as part of the system; the Canadian Pacific Ocean Services, the Dominion Express Co., the C.P.R. Telegraph, the Hotel Department and the Departments of Natural Resources and Colonization and Development. This is surely a pretty big order for one speaker, and to deal with the subject fully, I decided, after careful consideration of the diversified activities of these many interests, to endeavor to limit my speech to an hour and a half. However, I have just been warned that any speaker, at this late hour, who speaks more than 10 minutes is to be summarily executed and denied a decent burial, or, worse still, excluded from visiting any of the "dry" sittingrooms after the dinner, and I am therefore constrained to try and return the thanks of all these vast interests for the way in which you have received the toast, in a very few brief remarks. In the first place, I think a better name than the 'Allied interests' might have been obtained for this toast, especially in view of the doubts now existing in many people's minds as to whether this term conveys a correct understanding of the close relationship existing between the interests included in the toast, and the parent company, and it is certain that if we are applying the Wilsonian interpretation of 'allied,' as judged by what that meant in the late war, the term is not applicable in this instance.

"What is it that makes the C.P.R. differ from any other transportation company? The answer, in my opinion, is this toast, and explanation may be illustrated by a brief summary of a day's work by our President. In the morning he has to consider many of the daily problems referred for ruling by the Operating Department. Then, for a change, he has problems connected with the operation and equipment of lines in the United States. Then come numerous questions of steamships, and routes on the Atlantic, Pacific and Great Lakes, including matters of officers and staff all over the world. Then a rapid change to questions affecting the staff all over the world. Then a rapid change to questions affecting hotels, express companies and telegraph departments. Then, for another change, matters affecting smelting, metalliferous mines, coal mines, and water powers. Then, to the other extreme of sawmills and timber and ties, and finally, questions of land settlement, land prices, experimental farms and livestock, and then, just to make sure that his day shall be varied, I come along with schemes for moving pictures, publicity, propaganda and all the various questions relative to our efforts to colonize and develop Canadian natural resources, including statistical statements like the following:

"Agricultural traffic from existing railway mines in the three prairie provinces during 1916, $163,516,318.

"Total number of farmers in the three prairie provinces that year, 219,105.

"Average traffic value of a farmer, $746.33; capitalized at 5%, $13,569.

"Number of farmers located by C.P.R. on their own lands since 1882, 48,147, which, of course, does not include the vast number who were brought to the west and located on other lands.

"C.P.R. traffic from farmers located 1882-1919, $157,363,573 net.

"Finally, just when he feels like going home and calling it a day, along comes some intricate problem of finance, connected with all this world wide activity of the greatest transportation and development organization, and on behalf of the associated interests for which I am attempting to respond, I can only say, that they should, and I know do, feel proud to be considered part of the organization, if only as allied interests."

### C.P.R. Passenger Officials' Tour and Conferences.

On Mar. 14, the day after the officials' dinner, a number of the company's passenger department officials, headed by C. E. E. Ussher, Passenger Traffic Manager, left Toronto by special train, consisting of compartment observation car, compartment car, two standard sleeping cars, dining car, tourist sleeping car, and baggage car, for a trip to Seattle, Wash., where they disbanded. The route followed from Toronto was via Sudbury, and the main transcontinental line to Vancouver, with stops at Port Arthur, Fort William, Winnipeg, Brandon, Moose Jaw, Regina, Saskatoon, Edmonton, Calgary Banff, Lake Louise, Field, Revelstoke Sicamous and Vancouver. At Port Arthur the party had luncheon at the Prince Arthur Hotel. Committee meetings were held at Fort William, Winnipeg and Saskatoon, and general sessions at Regina, Edmonton, Calgary, Sicamous and Vancouver. From Vancouver the the party went by steamship to Nainamo, and had an automobile trip to Alberni, Sproat Lake and Great Central Lake, returning to Alberni, and thence over the Esquimalt and Nanaimo to Duncans, motoring from there over the Malahat Drive to Victoria. From Victoria they went to Vancouver by the s.s. Empress of Russia and from Vancouver to Seattle on a B. C. Coast Steamship Service ship.

During the trip 10 of the compartments and 2 of the drawing rooms were used, during the day, by 12 committees of 5 each, in preparing recommendations for discussion at the general sessions. Each committee considered and discussed all phases of subjects assigned it, and set forth the conclusions reached, in the form of resolutions for submission at the general sessions, where the proposed resolutions formed the basis of discussion. The committees met a sufficient time ahead, so that a copy of the proposed resolution on each subject could

be furnished all conference members at least 24 hours before the subject was brought up at the general session, thus giving every member an opportunity to fully consider the committee's proposals and be in a position to readily set out views for or against each resolution or offer an amendment.

## Light Railways for Northern Ontario.

The Ontario Legislature is being asked to incorporate the Northern Light Railways Co., to build and operate light narrow gauge railways to be operated by steam, electricity or other motive power. The railways proposed to be built consist of a main line with two branch lines, and a loop line, the routes of which are specifically set out, and other branch lines or extensions, and power is asked to connect with the Timiskaming and Northern Ontario Ry. and any other railways that may be built. Following are the routes stated: From at or near the T. & N.O. Ry,, Elk Lake branch, adjoining the Smythe lawn plot, southwesterly through Roadhouse and Lawson Tps., then northwesterly through Nicol Tp. to Gowganda town plot. A branch from Nicol Tp. northerly through Nicol, Haultain, Morel and Yarrow Tp., connecting with the established gold mines in Powell Tp., known as the Fort Matachewan gold mines also in Nicol Tp., but running westerly through Nicol, Mulver, Tyrrell and McMurrich Tps., and connecting with the mines in the West Shining Tree gold mining area; and a loop line from Swastika Station, on the T. & N. O. Ry., running northeasterly through Teck Tp., the Kirkland Lake Mining area and Lebel and Gauthier Tps., thence southeasterly to Larder Lake, thence southerly through Skead Tp., and northwesterly through Catherine and Boston Tps. to Boston Creek Station on the T. & N.O. Ry.

The lines mentioned above are those outlined in the Light Railways Construction Co.'s programme, and referred to in Canadian Railway and Marine World for February, pg. 76.

## Atlantic, Quebec and Western Ry. and Quebec Oriental Ry. Operation.

The Minister of Railways replied to a number of questions in the House of Commons, Mar. 15, and 17, with respect to the Quebec Oriental Ry., and the Atlantic, Quebec and Western Ry., which are operated under one management, and give connection between Matapedia, on the Intercolonial Ry., and Gaspe, Que. Answering three sets of questions asked by C. Marcil, M.P. for Bonaventure, the Minister stated that the Board of Railway Commissioners had received complaints during the last twelve months from C. Marcil, J. H. Kelly and others with respect to the service given on the railways mentioned. These complaints had been taken up by the board with the company, and the financial conditions disclosed do not warrant any additional service during the winter. The time table for the winter service was filed by the company in the usual manner and notice was given to the public of the change of service. The present service is a tri-weekly passenger train, Matapedia to Gaspe; a mixed train service, Matapedia to New Carlisle, and an accommodation tri-weekly from New Carlisle to Gaspe. Mail is carried daily between Matapedia and New Carlisle. The reason assigned by the company for restricting its service is on account of its financial condition. The Board of Railway Commissioners has satisfied itself that the line is sufficiently equipped with motive power, also sufficient passenger cars; the company depends upon other lines for freight cars, the bulk of its traffic being through traffic with other roads.

In answer to other questions, the minister stated that the government did not contemplate taking over these railways and linking them up with the Canadian National Rys. System. The C.N.R. management had not given any consideration to the acquisition of these railways as part of the C.N.R. System, in view of the rapid development of business in Bonaventure and Gaspe Counties. If the matter of investigating the desirability of such acquisition is submitted to the management it will be duly considered.

As a result of the work of an association for the improvement of the railway situation on the Gaspe coast, found recently and which has taken up the whole matter with the Board of Railway Commissioners, a special sitting of the board is to be held at New Carlisle, where the management of the two lines is centered and which is about equidistant from Matapedia and Gaspe.

## Railway Association of Canada.

J. H. Sinclair, M.P for Antigonish and Guysborough, N. S., asked the following questions in the House of Commons, Mar. 17: "Who compose the Canadian Railway War Board? What are their respective salaries? What was the total expense connected with this board during the calendar year 1919? Is it the intention of the government to dispense with the services of this board? If so, when?"

The Minister of Railways replied as follows: "The Canadian Railway War Board (known at its inception and for several months thereafter as the Canadian Railway Association for National Defence) was formed at a convention of executives of railways in Montreal on Oct. 23, 1917. The establishment of this organization was suggested by the Minister of Railways and had for its object the co-ordination of activities of the several railways, to the end that the greatest degree of efficiency in the handling of troops, war supplies, etc., would be accomplished. When peace was declared, it was found that this organization was so beneficial that the railways decided to continue it under the name of the Railway Association of Canada. The expenses are borne by the different railways belonging to the organization, and the government is under no expense in the matter."

## Grain Inspected at Western Points.

The following figures, compiled by the Dominion Bureau of Statistics, show the number of cars of grain inspected at Winnipeg and other points on the western division during February, and during 6 months ended Feb. 1920 and Feb. 1919.

| | Feb., 1920 | 6 mons. to Feb., 1920 | 6 mons. to Feb., 1919 |
|---|---|---|---|
| C.N.R. | 3,893 | 34,674 | 36,142 |
| C.P.R. | 3,987 | 54,350 | 53,579 |
| G.T.P.R. | 1,482 | 15,810 | 12,524 |
| G.N.R. (Duluth) | 3 | 478 | 722 |
| Total | 9,365 | 105,312 | 102,967 |

## House of Commons Committee on Railways, Canals and Telegraph Lines.

The House of Commons committee on railways, canals and telegraph lines, for the current session, is comprised as follows: J. E. Armstrong, M.P. for Lambton East, Ont., chairman, the other members being Messrs Allan, Anderson, Andrews, Archambault, Argue, Armstrong (Lambton), Arthurs, Ballantyne, Beland, Blair, Bolton, Bonnell, Boyer, Boys, Bristol Buchanan, Bureau, Cahill, Calder, Campbell, Cannon, Casgrain, Chabot Charlton, Chisholm, Clark (Red Deer), Clements, Cockshutt, Cooper, Copp, Crerar, Crowe, Cruise, Currie, d'Anjou, Davidson, Davis, Déchène, Delisle, Devlin, Doherty, Douglas (Cape Breton), Douglas (Strathcona), Edwards, Elkin, Ethier, Euler, Fafard, Fielding, Fontaine, Fournier, Fraser, Fripp, Gauvreau Guthrie, Harold, Harrison, Hay, Henders, Hepburn, Hocken, Hughes (Sir Sam), Keefer, Knox, Lalor, Lanctôt, Lapointe, Lavigueur, Leduc, Lemieux, Lesage, Long, Mackie (Edmonton), Mackie (Renfrew), Maclean (York), MacNutt, McCoig, McCrea, McCurdy, McGregor, McLean (Royal), McLeod, McQuarrie, Maharg, Manion, Marcile (Bagot), Martin, Merner, Mewburn, Middlebro, Molloy, Morphy, Mowat, Murphy, Myers, Nesbitt, Nicholson (Algoma), Nicholson (Queens), Pardee, Parent, Pelletier, Porter, Power, Reid (Grenville), Reid (Mackenzie), Richardson, Savard, Séguin, Shaw, Sheard, Simpson, Smith, Stevens, Stewart (Hamilton), Stewart (Lanark), Sutherland, Thompson (Weyburn), Thompson (Qu'Appelle), Trahan, Tudhope Vien, Wallace, Wigmore, Wilson (Saskatoon), Wilson (Wentworth), and Wright. There are 126 members of the committee, and the quorum is 25.

## Steel Rail Production in Canada.

A report on iron and steel production in Canada, during 1918, prepared by the Dominion Mines Department's Mineral Resources and Statistics Division, contains the following: The production of steel rails in Canada during 1918 was 162,747 short tons, against 46,645 short tons in 1917, and 90,123 short tons in 1916. The annual production from 1905 to 1915 varied between 200,000 and 560,000 tons per annum.

The exports of steel rails during 1918 were 12,952 tons, valued at $575,062, an average of $44.40 a ton, against exports during the nine months ended Dec. 1917 of 26,402 tons, valued at $1,605,742, an average value of $60.82 a ton. The imports of steel rails as per Canadian Customs records were 7,787 tons valued at $404,417, an average of $51.95 a ton, against imports in 1917 of 18,160 tons valued at $689,197, an average of $37.95 a ton. United States trade records show exports of steel rails to Canada during 1918 of 74,545 tons valued at $3,163,201, an average of $42.43 a ton and during 1917 exports to Canada of 54,088 tons valued at $1,815,768, an average of $33.57 a ton.

The annual import of steel rails from 1895 to 1905 ranged between 50,000 and 212,000 tons, averaging about 125,000 tons. From 1906 to date, however, or since the establishment of the rail mills at Sydney and Sault Ste. Marie, the imports have fallen to an annual average of about 60,000 tons, the variation being between a minimum of 10,420 tons in 1915 and a maximum of 177,041 tons in 1913.

## Canadian National Railways Terminals in British Columbia.

The British Columbia Railways Department's report for the calendar year 1919 gives the following information as to the progress of construction on the C.N.R. in the province. Construction of the C.N.R. terminals was proceeded with during the year at Vancouver, Port Mann, New Westminster and Victoria, and estimates have been approved by the department for payment in accordance with the provisions of the Canadian Northern Ry. Terminals Act, 1913, Dec. 7, from Jan. to Nov. inclusive, amounting to $340,740.66. The Vancouver terminals were opened for business Nov. 1, 1919. The construction of the terminals at Victoria was commenced, the operations being confined to a small area north of the Point Ellice bridge. The construction programme now under way on this area consists of grading yard tracks and building a 5-stall locomotive house, machine shop, coaling station, turntable and a temporary station and freight shed. The following table shows the estimated cost of the terminals at each place stipulated for construction, the amount of money available out of the guaranteed securities for their erection, the amount earned to Nov. 30, 1919, and the percentage retained by the government:

| | Estimated cost. | Cash available. | Earned. | Returned. |
|---|---|---|---|---|
| Vancouver | $4,308,455.10 | $4,262,453.21 | $3,313,979.46 | $24,167.86 |
| New Westminster | 2,202,601.50 | 2,179,113.97 | 1,822,458.41 | 83,507.69 |
| Port Mann | 1,213,424.62 | 1,200,570.16 | 1,175,129.92 | ..... |
| Steveston | 353,988.89 | 349,996,73 | 286,892.54 | ..... |
| Patricia Bay | 209,908.29 | 208,008.39 | 204,804.68 | ..... |
| Victoria | 853,125.00 | 843,790.66 | 34,089.14 | 2,855.44 |
| Total | $9,141,503.40 | $9,043,843.12 | $6,837,354.15 | $110,539.90 |

An act passed in 1913 authorized the government to guarantee an issue of bonds not to exceed $10,000,000 at 4½%, the principal repayable April 2, 1950, to aid in the laying out of terminals and the construction of buildings in connection therewith at Port Mann, New Westminster, Vancouver, Steveston, Union Bay on Vancouver Island, and at Victoria. The proceeds of the issue of bonds have been deposited to the credit of a special fund, and payments are made to the company upon certificate as the work proceeds.

## Suggested Electrical Operation of G.T.R. in Montreal.

The Minister of Railways stated in reply to questions in the House of Commons, Mar. 15, that when the government gets entire control of the G.T.R. system the whole question of Montreal terminals will be considered. The questions asked were whether it is the government's intention to substitute electric locomotives on the G.T.R. from the western city limits to Bonaventure Station; to reduce the speed of trains to 6 miles an hour in Montreal, west of Bonaventure Station, and if it is the government's intention to establish an elevated railway on the G.T.R. to give additional protection to the public.

The question of the substitution of electric locomotives for steam locomotives for hauling trains on the G.T.R. from the western limits of the city to Bonaventure Station is under consideration by the Montreal City Council, a motion requesting the administrative commission to apply to the Board of Railway Commissioners for an order to that effect having been given notice of.

## Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened offices at Baker Brook, N.B., Paspebiac, Que.; Beardmore, Cronyn, Madoc and Ogahalla, Ont.; and Clair, Sask., and has closed its offices at Hibbard, Que.;/Alexandria, Dorset, Gilford, Mattice and Lannin, Ont.

The Postal Telegraph Cable Co. has entered an action in the District Court, New York, against the C.P.R. Telegraphs, claiming that it has paid out in United States money to U.S. cable companies on behalf of the C.P.T. Co., $65,058 for cable messages to South America, Asia, etc., and that while the disbursements are admitted, the C.P.T. Co. wishes to reimburse the company in Canadian money, thus placing on the Postal Telegraph Cable Co., a loss in exchange of about 10%.

W. Marconi, G.C.V.O., is reported to have made an offer to the British Government, to build a chain of wireless telegraph station at different points throughout the British Empire, and turn them over to the government at the end of 30 years, if so desired. The offer is said to provide that his copanies shall carry out the construction, organization and operation of such stations, without ernment a quarter of the profits, in return for protection and exclusive rights. It is proposed at the end of 30 years, it be decided to nationalize the system, the government should pay the original cost plus a tenth of the gross receipts during the 30 years of operation.

## Among the Express Companies.

The Canadian National Ex. Co. has opened an office at Clair, Sask.

L. E. Cochrane has been appointed attorney, American Railway Ex. Co., at Vancouver, B.C., in place of J. E. Archer.

James Andrews, heretofore cashier, has been appointed agent, Canadian Ex. Co., London, Ont., vice James Overend, deceased. He is also acting for the American Ex. Co.

The Board of Railway Commissioners passed order 29,443, Mar. 10, granting Algoma Central and Hudson Bay Ry. Co.'s application for approval of combined shipping bill, way bill and receipts form for British-America Ex. Co.'s use.

The American Ex. Co. has opened a travel department at its Montreal offices and will handle steamship and railway tickets, and conduct and supervise travel generally throughout the world.

The American Railway Ex. Co. early in March placed an embargo on all express shipments from Chicago, Ill., except newspapers and funeral equipment, on account of a strike of express employes who asked for a wage increase of $35 a month.

B. S. Murray, route agent Canadian Ex. Co., with headquarters at London, Ont., who received severe injuries towards the end of February, when a train on which he was travelling was derailed, has been confined to his home in London for several weeks. He is making satisfactory progress and expects to resume his duties about April 1.

James Overend, who died in London, Ont., recently from pneumonia, was for 19 years agent Canadian and American Ex. Cos. there. He was born at Marchmount, near Orillia, Ont., May 28, 1864, was educated at Orillia public school and collegiate institute, and entered the Canadian Ex. Co.'s service at Orillia in 1879. Two years later, as train messenger, he had various runs on the Midland Division. In 1884 he was appointed train messenger on the Montreal-Toronto route, and travelled between those cities in that capacity until 1891, when he was transferred to the Toronto-Detroit route. In 1892 he was appointed joint agent of the Canadian and American Ex. Cos. at St. Thomas, Ont., where he remained until 1901, when he was appointed joint agent of the same companies at London, which position he held until his death.

The Canadian Ex. Co. has added a second story to its station warehouse at the corner of York-Station Sts., Toronto, necessary to provide this additional space the growth of business having made it to properly house the increased staff On the second floor offices have been fitted up for the Superintendent, W. E. Norman, and Assistant Superintendent, P. H. Jones, and their staffs, also the clerical staff of the Station Agent, J. Ellison. Certain of the staff from the overcrowded city office on Yonge St. have been transferred to the station in order to handle valuables more conveniently to and from the trains. Large rooms have been provided to acommodate parcels on hand, awaiting delivery, and over without mark shipments, held until the owner can be found. There are also luncheon rooms for the station staff and sleeping rooms for train messengers who arrive during the night. The interior of the city offices at 55-57 Yonge St. is being overhauled and rooms fitted up for different departments dealing with the public under the General Agent, R. A. Mitchell.

The American Railway Ex. Co. issued the following circular to agents Mar. 15: All business destined to points in Canada must be prepaid, effective April 15. Tariff rates from offices is the U.S. to those in Canada and now, and always have been, based upon U.S. money, there being, under normal conditions, but a slight discount on Canadian currency. During the war the exchange rate began to increase and has been steadily rising, until now it is approximately 1% with the result that on every dollar we collect in Canada we realize but 8c. With constantly increasing costs in operation we are in no position to absorb the loss in money value. The only way we can get 100c for each dollar tariff rate is to collect the amount in U.S. money. This is possible only through requiring prepayment of charges on everything forwarded through our service into Canada. Effective April 15, agents will require prepayment of charges on traffic forwarded as above. We are placing the effective date far enough forward to give shippers an opportunity to make any necessary arrangements with their customers in Canada to permit of prepayment for their account. Immediate advice of this regulation should be given to shippers who are sending frequent shipments to Canada.

# Electric Railway Department

## Electric Railway Fare Increases in the United States.

Increased fares in some form or another are now effective in all but 56 of the 273 cities in the United States having a population of 25,000 or more. The cash fare in 196 of them is more than 5c, in 118 of them more than 6c, in 64 of them more than 7c, and in 34 of them more than 8c.

In all but 15 of the 69 cities, with more than 100,000 population, the cash rate is more than 5c, in 40 of the 62 cities between 50,000 and 100,000, it is more than 5c, and in 103 of the 142 cities having less than 50,000 it is more than 5c.

In Colorado, Connecticut, Delaware, the District of Columbia, Illinois, Maine, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, North Carolina, Oregon, South Carolina, Rhode Island and Virginia, the fares in every city of more than 25,000 have been increased. In Michigan and Pennsylvania, the fares in all but one city have been increased, while of New York's 22 cities having more than 25,000, but two remain without some form of increase.

Increases of 1919.—The trend towards higher fares is better illustrated, however, by a comparison of the statistics given herewith, with those covering the same cities as of April, 1919. These indicate that the process of readjusting street railway revenue to the situation caused by the depreciated dollar is proceeding all over the country, and that the 6c car fare is fast following into oblivion the 5c fare as insufficient to meet the still rising costs of operation.

In April, 1919, the cash fare in 156 cities was more than 5c. Today it is more than 5 cents in 196 cities. In 53 cities it was more than 6c, today it is more than 6c in 118 cities. In 24 cities it was more than 7c, today it is more than 7c in 64 cities. In 13 cities it was more than 8c, today it is more than 8c in 34 cities. In 73 of the 156 cities in which in April, 1919, cash fares higher than 5c were effective, further increases have been made, while in 15 other cities applications for higher fares are now pending.

A study of these statistics very plainly indicates the process by which is being restored the balance between the cost and the price of electric railway transportation. That costs have increased some 100% as between 1914 and the present time is now universally admitted. A part of this increase has been absorbed by the cutting down of expenses, but much the greater bulk of it can only be met by rate increases. In states where properly equipped regulatory commissions have jurisdiction over electric railway rates, there has been a consistent movement towards keeping these rates in proper relation to costs. This is notably true in Massachusetts, Pennsylvania, Missouri, and to a certain extent, in the up-state district of New York, in all of which cost has been the controlling factor in rate regulation.

Different Rates.—That a standard street car fare, in the sense of a fare common to all cities, is not to be expected, is evident from the fact that in the 273 cities covered by the statistics, there are no less than 75 different rates of fare, ranging from the top limit of 10c cash and ticket, effective in 12 cities, including Boston, to 5c cash ticket, effective in Columbus, where, however, the city council has voted, subject to referendum, a 6c base fare. The cost of the service undoubtedly varies greatly in the different cities. In Boston, the fare under service at cost operation is 10c; in Cleveland under service at cost operation it is 5c, six tickets for 25c, 1c transfer. The fare in Boston has been increased 100% since 1914; in Cleveland the top limit of increase was 66%, and today is more than 40%, exact percentage being impossible to calculate because of the use of reduced rate tickets. Those who are familiar with operating conditions in the two cities have no difficulty in accounting for this difference. Cleveland, operating under a service at cost plan, Chicago and Galveston operating under what are practically service at cost plans, are the only cities in which fares have been reduced from the top limit put in effect during the war.

It is impossible to forecast any point at which street railway fares will finally come to a rest in a state of equilibrium with costs. It has been frequently asserted that high fares result in an actual decrease in revenue, because of their tendency to discourage riding. Three instances in actual practice seem to disprove this contention. Under a 5, 7 and 8c fare, the Boston Elevated Ry. Co. accumulated progressive deficits; under a 10c fare it is not only earning the full cost of the service, but a surplus as well. In Worcester, where a zone system is in effect, the company, at the order of the Massachusetts Public Service Commission reduced its unit fare from 6c to 5c, during the month of Dec., 1919, as an experiment. The result was such a substantial decrease in revenue that the 6c rate was restored at the earliest possible moment. In Grand Rapids, Mich., the company, at the request of the city commission, which believed that riding would be stimulated by a lower fare, reduced its fare from 6c to 5c for July, 1919. The result was a decrease of about $20,000, or about one-seventh of the former total revenue.

**Canadian Electric Railway Association.**

Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.

Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.

President, A. Gaboury, Superintendent, Montreal Tramways Co.

Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

Executive Committee, The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

Official Organ—Canadian Railway and Marine World, Toronto.

Experiments Being Tried.—That the present period is a period of experimentation with different fare systems and varying rates of fare, is evident from the great variety of fare systems in effect. The zone system of fares seems to be growing in popularity. In April, 1919, ten companies were operating under some form of a zone system. At present, 27 companies are so operating. Between April, 1919 and the present time, the New Jersey zone experiment was made and failed, but to offset this failure, a zone system has been put in effect in Connecticut and has met with success.

One of the most interesting experiments now under way is that which is being tried by the public trustees operating the Eastern Massachusetts St. Ry. Co. Here, one of the largest operating companies in the country has partitioned its territory into fare districts, each with an important municipality as its center. The fare in each of these districts is regulated (on a service at cost basis), in accordance with the cost of operation in that particular district. The trustees have insisted that jitneys be regulated, so as not to interfere with the company's revenue, and in two cases where the communities failed to provide such regulation, have actually abandoned service for a time. In the 12 districts into which this territory has been divided, there are now four different rates of fare, indicating how costs of operation vary in various communities.

In Service at Cost Cities.—Twenty-one cities are now operating under service at cost agreements. In 10 the fare is 10c, cash and ticket; in one it is 10c cash, 8 1/3, ticket (good to traffic center only); in 6 it is 10c cash, 6 1/4c ticket (good to traffic center only); in one it is 10c cash, 6 cents ticket (monthly tickets); in one it is 8c cash, 7 1/7c ticket, 1c transfer; in one it is 7c cash and ticket, and in one it is 5c cash, 4 1/6c ticket, 1c transfer.

In two of the cities included in the statistics—San Francisco and Seattle—the street railway lines are municipally owned and operated. The fare on each is 5c and in each case the road is being operated at a loss. In San Francisco this loss now amounts to about $11,000 a month, which is being withdrawn from the depreciation reserve. In Seattle, the system has been relieved of the payment of taxes and the city council has gone on record as favoring the assumption of the deficit in other ways than through the payment of taxes.

How Increases Were Granted.—In 150 of the 217 cities in which fares have been increased, the increase has been the result of the action of state commissions, in 44 of municipal authorities, in 2 of courts, and in 21 of automatic regulation under service at cost plans.

In Minneapolis and Denver, ordinances embracing service at cost principles have been defeated by the electorate. In Rochester, St. Paul, Toledo, Oakland, Syracuse, Norfolk, Berkeley and Ala-

meda, service at cost plans have been proposed. In Detroit and Duluth, public ownership proposals have been defeated by the electorate. In Detroit the building of a competing line has been proposed, and in Toledo, a proposition to purchase the existing system will be submitted to a vote.

In connection with the rates of fare now prevailing in U.S. cities, it must be remembered that all of these roads are operating upon a starvation basis. The cost of the service as reflected in fares now in effect, and the application for increases which are pending, represent in many cases service and facilities reduced to the minimum. New capital is not available and improvements and extensions are awaiting the restored credit of the companies. In a recent interview President J. J. Stanley, of the Cleveland Railway Co., stated that the reduction in fares in that city was made possible because of the greatly increased traffic, which is being carried with but little if any increase in track or equipment. Improvements to the amount of $25,000,000 were urgently needed in Cleveland, he stated, and added that the addition of this sum to the company's capitalization, when made, would undoubtedly have an appreciable effect upon the rates of fare. The Detroit United Ry withdrew its application for a 1c transfer charge because it was impossible under existing conditions to obtain the $14,000,000 needed for improvements and extensions, so that the company was carrying a much larger number of passengers, with but few additions to its equipment. One of the reasons for the high rate of fare in Boston is that a large sum has been spent in rehabilitation.

This question of rehabilitation has a marked bearing upon the entire fare situation. Deferred maintenance is piling up on most of these properties. The longer it is delayed, the greater the cost when it is finally undertaken, and the higher the cost of operation during the period in which track, equipment and overhead are neglected. A small increase of fare made immediately at the time that it is needed is worth more than a large increase that comes after a long delay.—Harlow C. Clark, in Aera.

## Dominion Power and Transmission Co.'s Annual Report and Meeting.

Following are extracts from the report for the calendar year 1919 of this company, which controls and operates the following properties: Hamilton Cataract Power, Light and Traction Co., Hamilton Electric Light and Power Co., Hamilton St. Ry. Co., Hamilton and Dundas St. Ry. Co., Hamilton Radial Electric Ry. Co., Hamilton, Grimsby and Beamsville Electric Ry. Co., Brantford and Hamilton Electric Ry. Co., Hamilton Terminal Co., Dundas Electric Co., Lincoln Electric Light and Power Co., Welland Electrical Co., Western Counties Electric Co.

In a comparision of the results shown by the report for 1919 with those of the previous years, attention is naturally called to the increase in both gross earnings and operating expense. Enlargements of aernings have been made possible, and produced by continued good service rendered by the company. The plants and equipments have been thoroughly well maintained, and operate very satisfactorily. Increases in operating cost, have, as is well known, resulted from abnormal increases in the cost of labor and materials. The total of the company's reserves and profit and loss accounts have increased by $164,354.25, bringing this total up to $3,302,166.19. No new securities have been issued, and during the year outstanding bonds amounting to $145,000 were retired.

The Hamilton Radial Electrical Ry. Co., after much contention, succeeded in obtaining an increase of the unreasonably low rates of fare formerly in force, but it is too early to determine how far effective relief will be afforded thereby. Conditions surrounding the present operation of all electric railways are such as to call for relief by way of a reasonable increase in fares. The public and the companies alike are interested and will be mutually benefitted by a fair and equitable basis of operation being acceded to and maintained.

**Earnings and Expenditures.**

| | | |
|---|---|---|
| Gross earnings | $3,477,386.38 | |
| Operating expenses | 2,287,704.00 | |
| | $1,189,682.38 | |
| Transferred to maintenance and renewal fund | 35,116.09 | |
| | | $1,154,566.29 |
| Bond interest and interest | | $ 543,815.86 |
| | | $ 700,750.43 |

**Profit and Loss.**

| | | |
|---|---|---|
| Balance from 1918 | | $ 853,033.12 |
| Surplus earnings, 1919 | | 700,750.43 |
| Bad debts, etc., written off | $ 12,251.07 | |
| Dividends | 533,413.00 | |
| Balance | 1,008,119.48 | |
| | $1,553,783.55 | $1,553,783.55 |

President J. R. Moodie, in speaking at the annual meeting, said :"The receipts were the highest in the company's history. Higher wages, increased cost of material and supplies, and the adverse exchange rate have increased operating expenses in greater proportion. The steam plant has proved a most valuable part of our system, as is evidenced by the service given under adverse conditions. In all likelihood we will find it advisable to add another generating unit, thereby increasing our capacity by 11,000 k.w., or 15,000 h.p. This means the installation of machinery only, as the present buildings are planned for such additions. With this installation, the first half of the plant as originally designed will be complete. The ultimate capacity of the steam plant when finished will be 60,000 k.w., or 80,000 h.p. With our water power development we will have a total of 130,000 to 135,000. Against much opposition we were successful in our application for increased rates on the radial railway. The low fares formerly prevailing were quite inadequate to meet the abnormal conditions through which we are passing. The change has not been long enough effective to show tangible results, but the board feels that in time it will prove beneficial. Inadequacy of fares of the street railway and some of the other electric railways of our system call for revision, in order not only to yield reasonable returns, but to admit of desirable extensions and improvements."

The directors and officers were re-elected as follows: President, Lieut.-Col. J. R. Moodie; Vice-President, Cyrus A. Birge; Treasurer, Jas. Dixon; Managing Director and Secretary, W. C. Hawkins; other directors, Lloyd Harris, C. E. Neill, W. E. Phin, Robt. Hobson and Jno. Dickenson. E. P. Coleman is General Manager.

## Grand River Railway and Lake Erie and Northern Railway Betterments, Etc.

A press report states that the Grand River Ry. and the Lake Erie and Northern Ry., which give an electric railway route from Port Dover, on Lake Erie through Simcoe, Brantford and Galt to Preston, Kitchener and Hespeler, Ont., propose to spend $1,500,000 on general betterments, etc. this year. In addition to aditional rolling stock, for which $671,000 is said to have been appropriated to buy 2 locomotives, 10 passenger cars, and an express car, it is said that the betterments will include new overhead wire on the Grand River Ry. lines, similar to that on the L.E. & N. Ry., a $16,000 car barn at Preston, and a station to cost $42,000, at Galt, in which the two companies' general offices will be located. For track betterments the larger proportion of the total appropriation will be spent on the G.T.R. A second track will be built from Preston to Hagey's Crossing, new rails will be laid, and at Kitchener $60,000 is to be expended upon a revision of the location.

The new construction undertaken recently at Hespeler is reported to be nearly completed, and it is said that when the proposed betterments are completed, cars will be run through between Kitchener and Port Dover.

**Motor Busses for London, Ont.**—London City Council is asking the Ontario Legislature in an omnibus bill for power to issue debentures for $30,000, without obtaining the ratepayers assent to buy motor busses. The reason set out is "to provide transport in the city, which is urgent and necessary." Power is also asked to enable the City Council to operate motor busses.

Ottawa Electric Ry. representatives, supported by the Ottawa Board of Control, waited on the acting Premier, recently, and urged the adoption of a plan for fixing different times for opening and closing the various Dominion departments so as to decrease the congestion on the railway in the morning and evening. Consideration was promised, and a later report stated that the departmental officials were investigating the matter.

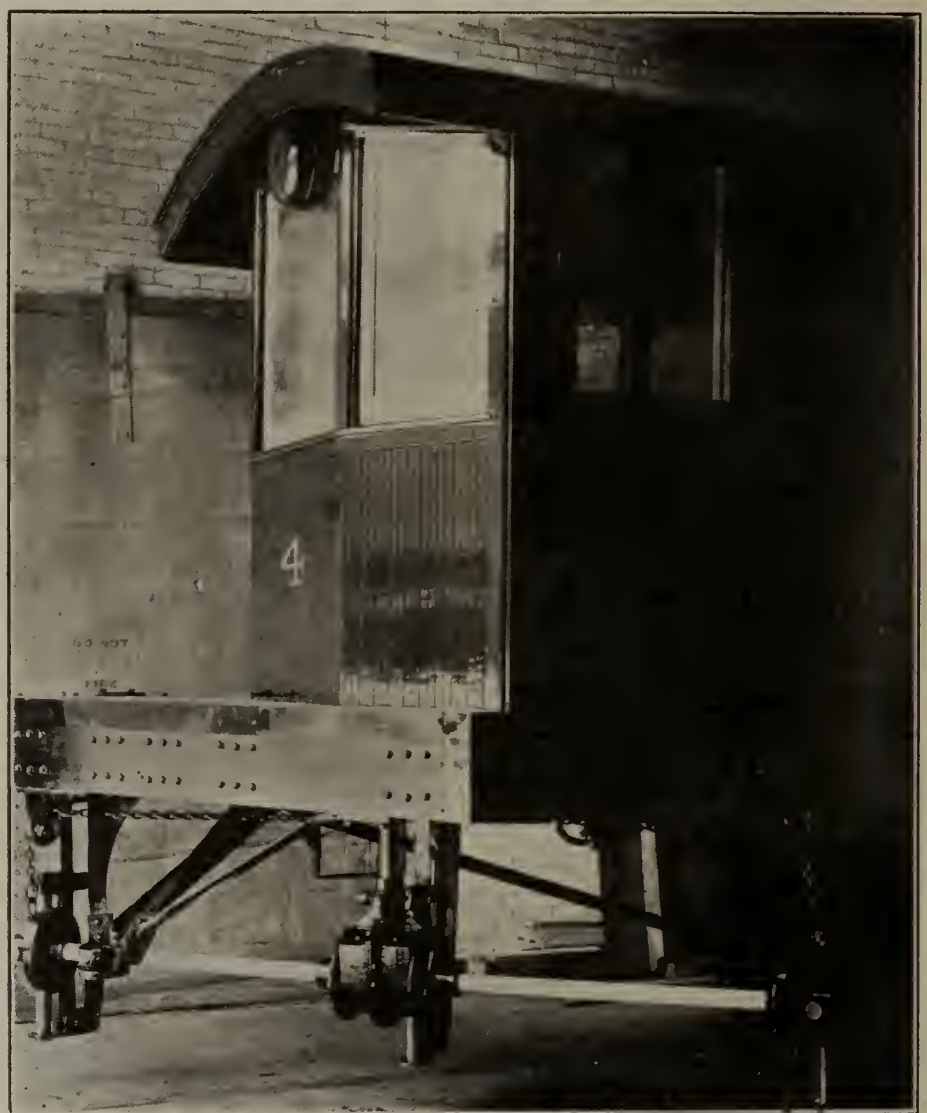
The London and Port Stanley Ry. is reported to have entered into a contract with the London, Ont., Gas Co. for hauling its coal cars from the railway to the gas company's yard. A contract is also reported to have been made for hauling coal for the G. T. R. in London from Port Stanley, as soon as the necessary additional locomotive power can be acquired. For some time past the G. T. R. has handled its coal from Grien, Ont., to London.

The Calgary, Alta., Municipal Ry. is reported to have received two of the second-hand cars bought recently in the United States, which will be put into service as soon as they have been overhauled in the railway shop. New steel wheels ordered six months ago for the repair of cars, are expected to be delivered shortly.

The Regina, Sask., City Council is reported as intending to submit a by-law to the ratepayers at an early date to provide for the operation of one-man cars on the Regina Municipal Ry. It is hoped to have them in operation by June 1.

# Levis County Railway Gear Drive Snow Sweeper.

The Levis County Ry., Levis, Que., has had a gear drive snow sweeper built by the Ottawa Car Manufacturing Co., which is the builders' standard single truck type. Its dimensions are: Overall, 29 ft.; body, 27 ft.; width, 7 ft.; rail to top of trolley base, 11 ft. 11 in. The body of 4 longitudinal sill and cross members of 10 in. channel. The roof is of the turtle back type, supported on steel car lines. The interior of the body is in ash, natural finish. The truck is the builders' standard design, which is extra heavy; wheels are of rolled steel type 33 in. The body is painted green, with gold numbers; the truck is painted black.



Levis County Railway Gear Drive Snow Sweeper (without the brooms).

A new departure in this sweeper is the gear drive, for the broom shaft. This method of driving the brooms is claimed to be a bigger step in the development of the sweeper than any of the other improvements. The accompanying illustration shows the broom shaft without the brooms and shows the gear box at center of shaft. The motor, which drives the brooms, is of the Westinghouse type, and is mounted at the center of the underframe inside the cab. The power from it may be taken towards either end of the car, by a longitudinal shaft, fitted with a clutch on each end of the motor shaft. The power is transmitted through the longitudinal shaft to a vertical shaft, by a bevel gear, which meshes with a similar gear, on the vertical shaft, located at the end of the cab on the underside of the bottom frame. This vertical shaft, carries the power down to the broom shaft, to which it is transmitted by another set of bevel gears, which are enclosed in a case which can be filled with oil. The upper gears are also enclosed in a sheet metal box which contains grease. The brooms are raised and lowered by hand. Two wheels are located in the cab, one for each broom at opposite ends. A vertical shaft with a 21 in. hand wheel, with pinion on the opposite end, in mesh with a large gear on another vertical shaft, furnishes power to raise and lower the broom shaft by arrangement of chains attached at the end of the broom shaft, connected to the large gear shaft. The brooms are braced at each end and center by heavy bracket guides, with angle braces, through which a cylindrical rod is passed, thus allowing the broom movement in a vertical direction, wihch is controlled by the hoisting apparatus. At the center guide, provision for raising and lowering the broom is made by allowing the power shaft to slide up and down on its key. The distance from center to center of the outside broom shaft guides is 4 ft. 10 in. The brooms may be raised 10 in. from the track.

There is hung a scraper wing, made reversible, which is lowered and raised by lever arrangement inside of cab, being arranged so that it may swing out from the side of the car by means of chains. The wing is a ⅜ in. plate, 2 ft. wide by 6 ft. long. The radial motion is controlled by a hand wheel, and vertical shaft, connected with ratchet and pawl, so the wing can be set at any angle. It is said that this sweeper is the first of its kind to be built in Canada.

## Electric Railway Notes.

The Windsor, Essex & Lake Shore Rapid Ry. has bought 3 second-hand passenger cars.

The Nova Scotia Tramways and Power Co. has received 100 of its new one-man P.A.Y.E. cars, which will at first be operated on the belt line.

The Regina, Sask., Municipal Ry. is equipping all its cars with signs at the rear, so that the destination can be learned from the rear as well as from the front.

The Birmingham, Eng., City Council is reported to have decided to buy 3,000 tons of steel rails for its municipal tramways service, in the U. S., at £24 10s a ton, shipment to commence about the end of April, and be completed in June.

To enable the London Railway Commission to provide an additional electric locomotive and passenger cars for increased business, the London, Ont., City Council is applying to the Ontario Legislature, in an omnibus bill, for power to issue $105,000 of debentures without obtaining the ratepayers' assent.

The Cape Breton Electric Co.'s car barn at Sydney, N. S., was damaged by fire, Mar. 6, and two cars, with a quantity of other equipment, were destroyed. The loss is estimated at $50,000, which is said to be covered by insurance. As there was other rolling stock in reserve there was no interruption of the car service.

T. H. McCauley, while on his way from Calgary, Alta., to St. John, N. B., to enter on his duties as General Manager, New Brunswick Power Co., stopped off at Regina, Sask., and explained the operation of one-man cars to the city council. A. A. Dion, Superintendent Moose Jaw Electric Ry., also attended the meeting.

The British Columbia Electric Rys. mechanical department organized a social club recently at Vancouver, with the following officers: Hon. President, G. A. Dickie, master mechanic; President, C. Spooner; Treasurer, C. Donald; Secretary, W. Watt; committee: J. Davison, J. Morgan, J. Dew, W. Ford, and W. Stiles.

The Quebec Superior Court at Montreal ordered the Montreal Tramways Co. to pay the Compagne d'Immeubles de Montreal $2,000 as compensation for its right of way over the plaintiff's land on Queen Mary road, Cote des Neiges. The right of way was granted to the Montreal Park and Island Ry. by the original owner of the land in 1895 subject to certain conditions. These conditions had not been fulfilled, and as the provisions of articles 776 and 791 of the Civil Code, which apply to gifts of right of way had not been carried out the railway company has to pay for the right of way $2,000 and costs.

The Montreal Tramways Commission is reported to have arranged a new system of stops for the Montreal Tramways Co.'s cars, to be put in operation May 1. The plan is to have stops at no shorter distances than 400 to 500 ft. from each other. The new plan is reported to have been tried with satisfactory results on Notre Dame St. East, the time of making the trip from the Place St. Annes to the Canadian Vickers plant having been cut down from 40 or 45 minutes to 20 or 25 minutes, or about one-half.

The Ontario Railway and Municipal Board is reported to have advised the St. Thomas, Ont., City Council that one-man cars could be operated successfully on the municipal railway, and would probably assist in cutting down the present loss in the operation of the line. In view, however, of the fact that the electric railway crosses four steam railways not under Provincial control, it would be necessary to obtain the Board of Railway Commissioners' consent before one-man cars could be operated.

The Quebec Superior Court gave judgment at Montreal recently for $277 and costs against the Montreal Tramways Co., as damages for injuries sustained by Mrs. L. Colbie, Feb. 12, 1917. The plaintiff was stepping aboard one of the company's cars, when it started and she was thrown to the ground and injured. The company claimed that the signal to start the car was given by boys standing on the rear end, but the court decided that it was the conductor's place to have watched the boys' actions, and that his failing to do so made the company liable.

The Westmount, Que., Police Magistrate, Mar. 16, fined George Houde, a Montreal Tramways Co.'s conductor, $5 and costs recently for assaulting a passenger, Mr. H. Hayes. The facts were admitted, the only difference being whether or not the conductor was within his rights in ejecting Hayes from the car. Hayes transferred from a Mount Royal Ave. car, to a Windsor St. car, of which Houde was conductor, telling the latter he wished to keep his transfer, as he wanted to take a car going up Claremont ave. The conductor argued that Hayes could not use the transfer on his car, an altercation ensued and Hayes was forcibly ejected by Houde. The magistrate held that a passenger is entitled to use his transfer on whichever route be wishes where there are two or three routes.

# Electric Railway Employes' Wages, Working Conditions, Etc.

**Hamilton St. Ry.**—Employes are reported to have decided, Mar. 6, to ask for a new agreement of the wage schedule, in which is as follows: Per hour, first six months, 50c; second six months, 55c; second year, 60c; third year and after, 65c. Men operating snow plows to be paid 5c an hour extra, and to be provided with free overalls. The men also decided to ask for one week holiday a year with full pay.

**London and Port Stanley Ry.**—Conductors and motormen, who now get a maximum of 48c an hour are reported to have asked for an increase to a maximum of 60c.

**London St. Ry.**—Conductors and motormen, whose agreement expires May 1, under which they are paid 39c an hour for the first year, 42c for second year, and 44c for third year and afterwards, have applied for an all round increase of 21c an hour, an 8-hour day, time and a half for overtime on week days, and for all time on Sundays and holidays. The men's representatives had a conference with the company's officials Mar. 11, and a press report states that the officials declined to open up the question before May 1, when the present agreement expires. J. Colbert, president of the local union, is reported to have said that the meeting had been arranged to see if the company would take up the question on April 1, and on its refusal to do so the question of wages was not discussed. It is reported that the men have threatened to go on strike May 1 if the increases asked for are not granted. The mayor and an alderman are reported to have had an interview in Toronto, Mar. 20, with Sir Adam Beck, and that together they informally discussed the matter with the Ontario Railway and Municipal Board, the chairman of which pointed out that an increase of fares could only be granted with the ratepayers' consent. The board could, under certain conditions, take possession of the line and operate it, and a London press report states that the city council will ask the board to do so if a strike occurs.

**Montreal Tramways Co.'s.** employes are reported to have under consideration a proposal for a reduction of hours, and a meeting was expected to be called about the end of March to reach a definite decision. At present the day's work runs to 12 hours, for 7 days in the week, for the old hands, with from 3 to 5 hours work a day for spare hands. The suggestion is that an 8-hour day be given at the present maximum rate of wages of 48c an hour. A press report says that the men at a meeting on Mar. 23, decided to ask for an 8-hour day and a continuance of the present average weekly earnings, which the report says would mean a rate of about 75c an hour.

**Nova Scotia Tramways & Power Co.**—Negotiations between the company and its employes for a new wages scale are in progress.

**Niagara, St. Catharines and Toronto Ry.**—Canadian Railway and Marine World of March gave full particulars of the Board of Conciliation's unanimous award, which the employes, though their representative on the board signed the report, refused to adhere to. As a result negotiations with the management, the employes finally agreed to accept the board's report for the period from Aug. 31, 1919, to Feb. 29, 1920 as amended to correct clerical errors with the proviso that it would not reduce the wage of any employe during that period. A new agreement was entered into to date from Mar. 1, and extends to Oct. 31, 1920, and thereafter provided that either party may after Sept. 30, 1920, give 30 days notice of its desire to open the agreement for revision. The following table shows the rates of wages paid prior to the Conciliation Board's award, the rates decided on by the board, and the rates now in force under the new agreement:

| | Old rate | Conciliation | New rate |
|---|---|---|---|
| Passenger conductors and motormen— | | | |
| First year | 39c | 36-39c | 40c |
| Second year | 41c | 41c | 44c |
| Third year | 43c | 45c | 46c |
| Fourth year | 45c | 45c | ..... |
| Fifth year | ..... | ..... | 50c |
| Tenth year | 47c | 47c | ..... |
| Freight conductors and locomotivemen— | | | |
| First year | 47c | 47c | 50c |
| Second year | 47c | 47c | 50c |
| Third year | 47c | 47c | 50c |
| Fourth year | 48c | 48c | ..... |
| Fifth year | ..... | ..... | 52c |
| Tenth year | 50c | 50c | ..... |
| Freight brakemen and polemen— | | | |
| First year | 50-41c | 41c | 41c |
| Second year | 43c | 43c | 43c |
| Third year | 43c | 43c | 45c |
| Fourth year | 43c | 43c | ..... |
| Fifth year | ..... | ..... | 46c |
| Tenth year | 43c | 43c | ..... |

| | Old rate | Conciliation | New rate |
|---|---|---|---|
| Armature winders | 37-48c | To be negotiated | 42-53c |
| Blacksmiths | 37-48c | | 42-53c |
| Car pit repairmen | 37-44½c | | 39-48c |
| Truck repairmen | 37-44½c | | 40-47c |
| Painters | 37-44½c | | 42-48c |
| Carpenters | 39-44½c | | 42-48c |
| Bridge carpenters | 37-44½c | | 40-47c |
| Car cleaners | 34½-37c | | 34½-37c |
| Watchmen | $60-$90 | | $70 up |

| | | | |
|---|---|---|---|
| Substation operators | $100 | $105 | $105 |
| Linemen | 37½-44c | 45-50c | 45-50c |
| Groundmen | 37-41½c | 37-42½c | 37-42½c |
| Section foremen | $100 | $100 to $110 | $100 to $110 |
| Section men | 35c | 35-40c | 35-40c |
| Towermen | | $80-$90 | $80-$90 |

Nine hours are to constitute a day's work for all passenger trainmen. Overtime to be paid at rate of 15c an hour additional for the first hour over 9 hours, and at the rate of time and a half for all time over 10 hours. Conductors and motormen to receive 25c extra a day, or part thereof, for training students. Company to pay half cost of uniform, cost not to exceed $40, for each trainman of only one year service, and thereafter, if required, to pay half cost of one uniform a year. Freight trainmen shall have a minimum of 10 hours a day for week days for each day used. On Sundays or holidays, if required, they will be paid a half day for 5 hours service, or less, or a full day for service beyond 5 hours. Freight trainmen will be paid 15c an hour extra for the first hour or part thereof after 10 hours service, and time and a half after 11 hours service. Crews of all freight motors, without cars, shall consist of at least two trainmen. Crews of freight trains of one or more cars shall consist of not less than 3 men, and a fourth man shall be supplied where the freight is heavy enough to require it. Minimum wages for baggagemen shall be $90 a month; shedmen $75, and watchmen $70.

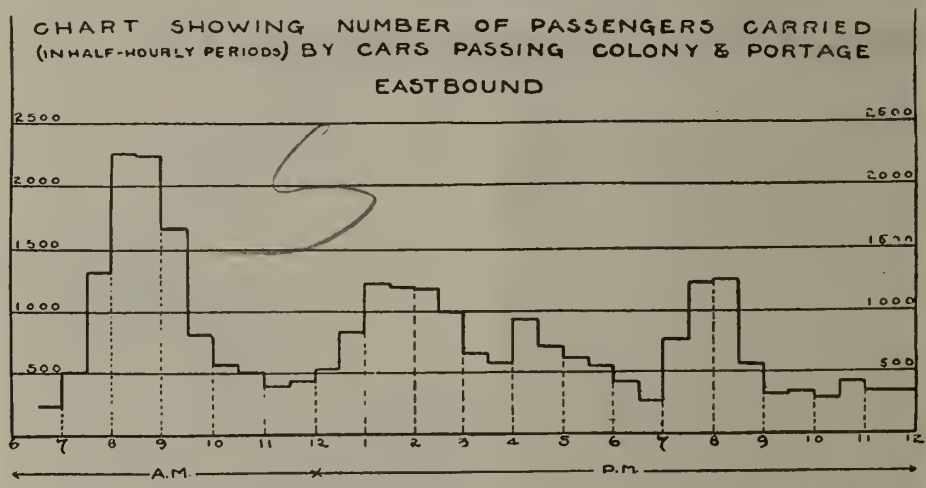
**Ottawa Electric Ry.** employes are said to be considering the details of a new wage schedule, etc., which they propose to ask the company to adopt, and that it will call for a maximum rate of 65c an hour.

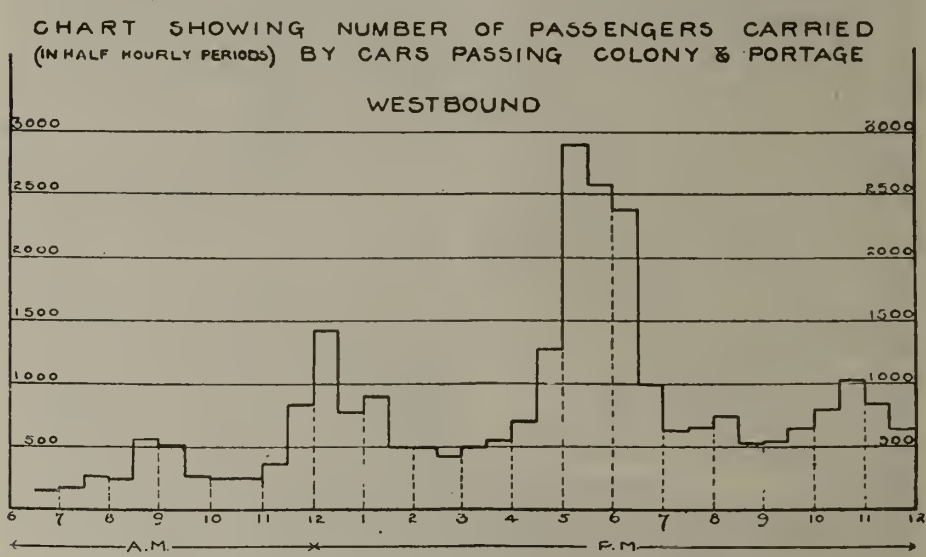
**St. Thomas Municipal Ry.**—The St. Thomas, Ont., City Council's Street Railway Committee has under consideration an application of G. F. Doherty, Manager of the municipal railway for an increase of salary from $120 to $140 a month, and an application from the conductors and motormen for an increase of 10c an hour.

**Winnipeg Electric Ry.**—A Winnipeg press dispatch, of Mar. 17, states that the company's conductors and motormen, whose agreement will expire April 30, are asking increases to bring their wages up to from 60c to 80c an hour, against 46c to 55c now paid on city lines, and 51c to 60c now paid on interurban lines on week days.

## A Serious Street Car Problem in Winnipeg.

The Winnipeg Electric Ry. has issued the charts which are reproduced on this page to illustrate the serious problem confronting street railway operation in Winnipeg, and explain why the company is continually appealing to shoppers to do their shopping early in the day. These charts show that by far the greatest bulk of travel is confined to about four hours of the day, from 7.30 to 9.30 a.m., and from 4.30 to 6.30 p.m. They reveal the fact that many of the cars the company must have in order to take care of these hours of heavy traffic are lying idle for the greater part of the day, and that apart from the rush hours, traffic is very considerably less than that between 5 and 6 p.m. Every available car and man in the service is required to handle the traffic during the rush hours.




The "sea" of street car traffic, with its regular ebb and flow, is graphically shown by these charts. On the eastbound chart—people coming into the city on Portage Ave.—that high water mark is reached by this tide between 8 and 9 a.m., while from 1 to 3 p.m. there is a rise consequent upon the office people returning from lunch, and the "invasion" of the shoppers. The only other rise is between 7.30 and 8.30 p.m. when the people are going to the theatres.

On the westbound chart the first substantial rise is recorded at the noon hour, while at 5 p.m. the record high water mark is reached with a suddenness almost overwhelming. Between 5 and 6.15 p.m. tradesmen and employes who came down to work in the morning over a period of 2½ hours, their ranks heavily reinforced with shoppers, all make tracks for home, and in consequence there arises a peak demand for transportation. Such a demand if applied to the post office, telephones, banks, theatres, stores office elevators, etc., would undoubtedly swamp their normal facilities and inevitably require many people to wait their turn. Serving them all at once would be out of the question. But in spite of one of the most difficult operating winters ever experienced in Winnipeg the company has been able to cope with this peak demand and give a satisfactory service. This chart only indicates the conditions obtaining on Portage Ave., a similar condition prevails on practically all routes in the city.

The problem the company is up against in properly taking care of the extreme situations indicated on the charts, and adjusting service to meet this ebb and flow in traffic, must be apparent to all. With the abnormal weather conditions in Winnipeg in winter, the company's difficulties are accentuated. Little wonder then, that its officials are continually appealing to shoppers to start their homeward journey before 4.30 p.m., and so leave the company free to provide service for the workers and those who must use cars between 5 and 6.30. The company's hands are full in attending to the requirements of the latter, and shoppers who linger down town until 5 and 5.30 p.m. are adding to an already difficult problem, are taking facilities which rightfully belong to the workers of a great city, and are making travel unfortable for themselves and others.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry. and allied companies—**

| | 7 mons. to Jan. 31, Jan., 1920 | Jan., 1919 | 7 mons. to Jan. 31, 1920 | 1919 |
|---|---|---|---|---|
| Gross | $828,709 | $677,489 | $5,050,625 | $4,095,584 |
| Expenses | 524,025 | 457,388 | 3,589,434 | 3,101,566 |
| Net | 304,684 | 220,101 | 1,461,191 | 994,018 |

**Calgary, Alta., Municipal Railway—**

| | 1920 | 1919. |
|---|---|---|
| Revenue for February | $65,804.25 | $52,846.82 |
| Passengers carried | 1,360,170 | 1,129,134 |

**The Moncton Tramways, Electricty & Gas Co.**, which operates in Moncton, N.B., and has its office at Pittsburgh, Pa., held its annual meeting at Moncton recently. The directors and officers for this year are: President and General Manager, E. B. Reeser; Vice President, E. O. Bartlett; Assistant Secretary and Assistant Treasurer, E. A. Cummings; other directors, Robt. Law, Jr., F. H. Minard, J. A. L. Henderson and T. O. Sullivan; Treasurer, J. T. Furlong; Secretary, J. A. Dunn. The Moncton City Council is applying to the New Brunswick Legislature for an act providing for a plebiscite on the question of taking over the Company's electric lighting plant and street railway, and to provide for making arrangements for taking the same over. (Mar., pg. 145)

**Montreal Tramways Co.**—A dividend of $2.50 for the quarter ended Sept. 30, 1918, was declared recently to be paid Mar. 30. This is the second dividend paid on account of arrears. A press report states that 12½% of dividends are now in arrears.

**Toronto Ry., Toronto and York Radial Ry. and allied companies—**

| | Jan., 1920 | Jan., 1919 |
|---|---|---|
| Gross | $1,130,486 | $1,106,840 |
| Expenses | 750,478 | 635,293 |
| Net | 380,008 | 471,547 |

**Winnipeg Electric Ry. and allied companies—**

| | Jan., 1920 | Jan., 1919 |
|---|---|---|
| Gross | $498,837 | $390,539 |
| Expenses | 365,031 | 291,016 |
| Net | 133,806 | 99,523 |

The Edmonton Radial Ry. is reported to be selling by tender approximately 25 tons of old rolled steel car wheels.

Z. A. Thibodeau, formerly secretary and chief clerk of the Montreal Tramways Employes Mutual Benefit Association, was committed for trial in the Montreal Enquette Court, Mar. 16, on charges of embezzling $19,688.89 of the association's funds, and forgery.

The Quebec Superior Court gave judgment recently for $330 damages and costs against the Montreal Tramways Co. in an action brought in the name of Joseph Parent, by his mother. The boy, who is 12 years of age, was a passenger on a Papineau ave. car, July 25, 1918, when the conductor tickled him in the ribs, causing him to lose his hold of the rail and to fall off. His head struck the pavement, causing injuries. The conductor claimed that the boy was trying to get off the car when it was in motion, and he tapped him on the hand with a pad of tickets to warn him, but notwithstanding this the boy jumped off the car before it came to a halt and fell on the street. Justice Tallier held that it was the conductor's fault that the boy lost his hold on the hand rail and fell from the car, and that the company was liable for the fault of its servant.

# Mainly About Electric Railway People.

R. A. Brown, heretofore City Electrical Engineer and Superintendent of the Electric Light Department, Calgary, Alta., has been appointed Superintendent of the Calgary Municipal Ry., and will retain his duties as Electrical Engineer for the city. He has been in the city's service for the past 10 years.

Geo. Cameron, one of the first motormen employed by British Columbia Electric Ry., and latterly in charge of the company's mail service, died in Vancouver, Mar. 11.

T. Clarke, heretofore Inspector, Niagara, St. Catharines & Toronto Ry., has been appointed Assistant Superintendent, succeeding A. F. McGill, resigned to enter the Hydro Electric Power Commission of Ontario's service.

G. Combra, heretofore general foreman, Calgary Municipal Ry., has been appointed Assistant Superintendent.

H. Francis, heretofore conductor Niagara, St. Catharines & Toronto Ry., has been appointed dispatcher, succeeding H. Brooker, resigned to enter the Hydro Electric Power Commission of Ontario's service.

Ernest P. Fredericks, who was appointed Publicity Director of the Association of Holders of Public Utilities Securities, at Toronto, in 1919, and who subsequently opened an office in Ottawa as advisor of public utilities, operating and rate investigation, and for making reports, surveys, appraisals, etc., has been appointed Secretary of the Board of Trade, Belleville, Ont.

A. G. Graves, one of the Calgary, Alta, city commissioners, who, among other things, has charge of Calgary Municipal Ry., has had his salary advanced to $4,250.

W. C. Hawkins, Managing Director & Secretary, Dominion Power & Transmission Co., Hamilton, Ont., who has not been very well for some time, left there Mar. 15, to spend some time in the south, but became worse on reaching Washington, D.C., and had to return to Philadelphia for treatment.

J. A. House, of St. Catharines, Ont., has been appointed Manager, Guelph Radial Ry., at a salary of $2,400 a year from Mar. 1. He was nominated by the Hydro Electric Power Commission of Ontario, and will operate the line for it after it takes control on July 1.

L. M. Jones, heretofore City Engineer, Port Arthur, Ont., and formerly on the Winnipeg Electric Ry.'s engineering staff, is reported to have been appointed Chief Engineer of a paving construction company.

William Oscar LeBar, who has been appointed Superintendent, Montreal and Southern Counties Ry., St. Lambert, Que., was born at Ste. Ursule Falls, Que., April 26, 1879, and entered railway service April 5, 1897, since when he has been to May 1, 1899, conductor, Montreal Terminal Ry., Pointe aux Trembles, Que.; May 1, 1899 to Feb. 3, 1902, depot clerk, same road, Maisonneuve, Que.; Feb. 15 1902, to May 15, 1903 motorman, Union Rd., Providence, R.I.; May 20, 1903 to Aug. 1, 1904, agent, Montreal Terminal Ry., Montreal; Aug. 1, 1904 to June 1, 1906, Assistant Superintendent, same road, Montreal; June 1, 1906 to Dec. 15, 1907, Superintendent and Accountant, same road, Montreal; Sept. 15, 1907 to Feb. 1, 1913 in freight department, Montreal Tramways Co., Montreal; Mar. 17, 1913 to Jan. 19, 1920, Chief Dispatcher, Montreal and Southern Counties Ry., St. Lambert, Que.

H. R. Mallison, formerly Managing Director & Secretary Treasurer, Nova Scotia Tramways & Power Co., has been appointed Purchasing Agent, and Secretary to President, Montreal Tramways Co.

T. H. McCauley, whose appointment as General Manager, New Brunswick Power Co., St. John, N.B., was announced in our last isue, was born in Peel County, Ont., in 1872 and moved to Prince Arthurs Landing, now Port Arthur, Ont., in 1880. He entered Bell Telephone Co.'s service at Port Arthur in 1889, and served as lineman, and from 1891 to 1902 as local manager, for Port Arthur and

T. H. McCauley.
General Manager, New Brunswick Power Co.

Fort William, and from 1894 to 1902 was also Superintendent, Port Arthur St. Ry. and Electric Light Co., the first named position being relinquished in 1902. In 1902 he installed the Port Arthur municipal telephone system and continued to 1909 as superintendent of the street railway light, power and telephone systems there. In 1909 he was appointed General Superintendent of Construction, Calgary Municipal Ry., Calgary, Alta., and on completion of the line he was appointed Superintendent, which position he occupied to the date of his resignation, Feb. 20, 1920. In 1914 he began the operation of what are known as the McCauley type one-man safety cars, and by 1917 all of 75 municipal railway cars, varying from 32 to 46 ft. long, were converted to that system. He was also the founder of the Bowness Amusement Park at Calgary, which, apart from making a profit on its operation, contributed considerable extra revenue to the municipal railway. On leaving Calgary, he was presented, on behalf of the city council and the street railway commissioners, with an address, a cheque for $2,500 for extra services rendered, and an engraved silver tray, and on behalf of the street railway employes with a canteen of silver. Mrs. McCauley was presented with a silver vanity case by the regent and members of the Col. Macleod Chapter, I. O. D. E.

W. E. Massie, heretofore General Superintendent, Sudbury-Copper Cliff Suburban Electric Ry., and formerly in the Toronto Ry. and Toronto and York Radial Ry. mechanical departments has been appointed Master Mechanic, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont.

Alexander Montgomery has been appointed acting superintendent, Nipissing Central Ry., Cobalt, Ont., vice Kenneth McDonald, resigned.

Donald Stuart Robertson, purchasing agent and secretary to the President, Montreal Tramways Co., died at Westmount, Que., Feb. 27, aged 69, from pneumonia. He was born in Glasgow, Scotland, and came to Montreal when 24 years old. He was in the G.T.R. service at Point St. Charles, Montreal, for 25 years, and then went to the Montreal St. Ry. A daughter died of influenza a fortnight before he died. Another daughter is the wife of F. M. McRobie, General Manager, Canadian Transfer Co., and a son, Maxwell, is in the C.T.C. real estate department.

J. Weller, heretofore motorman, Niagara, St. Catharines & Toronto Ry., has been appointed Inspector, succeeding T. Clarke, promoted to Assistant Superintendent.

## Hydro Electric Railway Construction Plans.

With the return of Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario, from England, it is expected that the plans for the building of electric railways in the province will be pushed forward, and a definite construction programme laid out. Sir Adam landed in New York Mar. 13, and came direct to Canada, and went on to London, Ont. A Toronto paper Mar. 15 published an article purporting to give his plans for the immediate construction of electric railways, under the bylaws passed by the various municipalities in regard to which he is reported to have said in London: "It is the Hydro-Electric Power Commission's wish to work in friendly co-operation with the Dominion Government and to avoid unnecessary duplication by acquiring lines which Dominion cabinet ministers have said will be made available to the Hydro through amicable negotiations."

Sir Adam subsequently went to Toronto, where he was the chief guest at a luncheon given by the city council. He is reported to have said that the Hydro Electric enterprise is so deep-rooted in the hearts of the people that there could be no fear for its success. He regarded the vote of 15 to 1 for the Toronto Eastern Ry. as a clear indication of this. All that is asked for the people is their moral support.

There is no need for worry by the government as to the financing of hydro-radial railways. That is the duty and province of the commission, through

whom $105,000,000 has been invested in Hydro power, and which is backed by 125 municipalities. He also referred to the negotiations which had been going on with the Toronto and York Radial Ry. since 1918 for the acquirement of its Metropolitan division, and stated that the commission insists that the deal shall include the whole of the Toronto and York Radial lines, and that the matter would be taken up during the following week. The Premier of Ontario in the course of an address, promised the government's support in the developing of water power.

## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—A press report states that it is proposed to build an extension of the Holmedale Line in Brantford, Ont. (Dec. 1919, pg. 670.)

**British Columbia Electric Ry.**—We are officially advised that the extension on Granville St. south, Vancouver, to connect with Kerrisdale, will be a single track, one mile long, laid with 60 lb. A.S.C.E., on gravel balast, with fir ties. Granville St. is paved over this route, ut the new track will be laid on the sbouth side of the paving. It is expected that this line will be in operation by April 15. A press report states that track laying was started Mar. 16.

The double tracking of Hastings St. East, from Renfrew St. to Boundary Road, wil be one mile long, laid with 60 lb. A.S.C.E. rail, on gravel ballast with fir ties. This street is not paved.

On the Fraser River Valley Line the company is spending about $100,000 upon betterments. Those wooden trestles, which have been in use since the line was built, are being filled. We are advised that nothing has been decided with regard to the electrical equipment of this line. In 1913, the cars operated on the line were equipped for 1,200 volt operation, but the change was not completed. A recent press report stated that it was proposed to extend this line to White Rock, B.C., and Blaine, Wash., involving the use of about 8 miles of the Great Northern Ry's. abandoned tracks. We are advised that in response to the petition asking for the time the company had a survey made, with a view of ascertaining the cost and probability of making the extension, and that this is as far as the matter has gone.

We are further advised that complete plans for the expenditure of the $1,000,000, which, according to a recent interview with Geo. Kidd, General Manager, is appropriated for the year, are too indefinite at present to say anything about. (Mar. pg. 145.)

**Calgary Municipal Ry.**—Tenders will be received to April 15 for the construction of manganese points and crossings for the Calgary Municipal Ry. (Mar. pg. 145.)

**Calgary Municipal Ry.**—A press report states that R. A. Brown, the new superintendent, has been going over the lines to settle on the repair work that will have to be done during the summer. Another press report states new rails are about to be bought for the extensions on the North Hill, and also for some further extensions on Centre St., near the heart of the city. (Mar. pg. 145.)

**Edmonton Radial Ry.**—A press report, states it is generally admited that the Radial Railway tracks and the rolling stock are in bad condition, and that a large expenditure is necesary to improve them.

**Edmonton Radial Ry.**—A press report states that tenders are under consideration for the supply of 7,000 jack pine or tamarac ties. (Jan., pg. 34.)

**Fort William Municipal Ry.**—We are officially advised that tenders are about to be invited for rebuilding car barns on the old site recently destroyed by fire. The new buildings will be practically of the same dimensions as the old, with the exception that a stores building will be built as an addition to the barn. The plans and specifications for the new buildings call for fireproof construction throughout; no steel will be used, all roof trusses, columns, window frames, etc., will be of re-inforced concrete, and the roof will be of sheet corrugated asbestos. A. L. Farquharson, Fort William, Ont., is manager. (Dec., 1919, pg. 690.)

**Hull Electric Co.**—We are officially advised that the company is remodelling its power substation at Hull, Que. The plant to be installed consists of two 1,200-k.v.a., 3-phase, on installed water cooled transformers, primary voltage 11,000, secondary voltage 2,200. These transformers, together with high tension and low tension switchboards, are being manufactured by the Canadian General Electric Co. It is expected that the apparatus wil be installed and in operation early in May. (Mar., pg. 145.)

**London and Port Stanley Ry.**—Sir Adam Beck attended a meeting of the London, Ont., City Council, Mar. 15, and referred to projected expenses for the improvement of the railway. He is reported to have said: "We must have $5,700 to rebuild an overhead bridge at St. Thomas. Then for laying 80 lb. rails to replace some lighter ones on some of our switches an expenditure of at least $14,000 will be necessary, and $4,000 is needed for some other track repairs in connection with the switches. The double tracking which we must do in some congested portions of our line will entail an outlay of $15,000. New scales will cost us $8,500; the repairs to the ferry slip dock at Port Stanley will cost $8,500, and a new locomotive will necessitate an outlay of $75,000."

P. Pocock, Vice Chairman London Railway Commission, is reported to have stated Mar. 16 that the building of a second track through St. Thomas and laying 80 lb. rails in those parts wrere there are now 55 lb. rails, will be gone on with as soon as the necessary material can be obtained. The line in St. Thomas will be provided with a second track as far as Pinafore Park, and it is proposed eventually to carry it as far as White's Station. The work will be done by the company's own forces. (Mar., pg. 145.)

**London St. Ry.**—The London, Ont. City Council is applying to the Ontario Legislature in an omnibus bill, for authority to enter into an agreement with the company to change its present track on Central Ave., between Richmond St., and Wellington St., to the centre line of Central Ave. (Mar., pg. 145.)

**Montreal Tramways Co.**—A press report states that the company will start construction this spring on an extension of a line on Park Ave. This report is somewhat premature as the proposed extension is part of a plan for a line to serve Mount Royal in place of the old incline railway. The project was before the Montreal Tramways Commission in February, when it was left over for further consideration, and the preparation of plans and estimates for an alternative project. The Montreal Administrative Commission was reported Mar. 5 to have had before it plans for a new incline railway of 370 ft., with an approach from Park Ave., and a projected line of the Montreal Tramways Co., from Park Ave. is reported to have been considered on Mar. 8. It was stated on the latter occasion that owing to the winter conditions on Mount Royal it was impossible for surveys to be made, but that they would be made as early as possible in the spring, after which the commission would be in a position to decide what to do.

A delegation from St. Michel de Laval waited on the Montreal Tramways Commission Mar. 11, to urge the building of an extension of the line on Iberville St., for about a mile. The commission is reported to have advised the delegation that before any such undertaking could be assured by the Montreal Tramways Co. there would have to be a guarantee that any loss would be made good. Article 36 of the company's contract is as follows: "Outside of the uniform-tariff territory, the cost of construction of any new line or of the extension of any existing line, or of their operation, shall not be a burden on the revenues of the company, in the sense that the revenues of such new lines must be sufficient so as not to affect unjustly the passenger and freight tariff on the other parts of the company's system." (Mar., pg. 145.)

A press report states that a contract has been let to F. A. Grothe for building a sub-power station near the car sheds on Cote St., Montreal, at an estimated cost of $60,000. It is reported that on the completion of this substation the Williams St. steam plant will be done away with, thereby affecting an annual saving of about $70,000.

**Quebec Ry., Light and Power Co.**—We are officially advised that negotiations are in progress in connection with the following extensions, but that no decision has yet been reached. An extension from the present line on Lamontague Ave., Jacques Cartier Ward, Quebec, on Charlesbourg Rd. as far as the city limits, 0.87 mile, and for the continuance of the line from the city limits to Charlesbourg church, 1.74 miles. It is suggested that the line, at a later date should be continued to Loretteville, Que. (Mar., pg. 81, see also Quebec Country, Mar. pg. 87.)

**Nipissing Central Ry.**—We are officially advised that the projected extension from Liskeard, Ont., to the Quinze River, Que., if built, will be an extension of the Nipissing Central Ry., and not of the Timiskaming and Northern Ontario, Ry., as recent press reports stated. Another press report states that the Ontario government, which owns both lines, has decided to make the extension as soon as the owners of the pulpwood limits are prepared to develop the water power and establish a paper mill. (Mar., pg. 145.)

**The Port Arthur Civic Ry.** work shops portion of the car barn at Port Arthur,

Ont., was destroyed by fire Mar. 9, together with three single end, double truck cars, and a single truck, one man car. We are officially advised that no definite plans have been made as to rebuilding the portion of the barn destroyed, and that no additional cars will be purchased for the present, as there is sufficient rolling stock on hand to meet existing requirements. A press report states that a consultation will be held with the Fort William authorities as to the building of joint barn facilities. The Fort William Municipal Ry. car barn was burned a few months ago. (Feb., pg. 81.)

St. Thomas Municipal Ry.—A press report states that the St. Thomas, Ont., City Council proposes to extend the municipal railway built in the city.

Toronto Civic Ry.—After having been before the Toronto City Council on several occasions recently, the question of the construction of the proposed Mount Pleasant car line was again held up on Mar. 22. The Council decided by a vote of 15 to 10 to build the line at an estimated cost of $1,060,000, thus reversing its decision of Mar. 8. Application is being made to the Ontario Legislature for authority to issue debentures to provide funds for building the line.

Transcona and Winnipeg.—The Manitoba Legislature has under consideration a bill authorizing the town of Transcona to build a street railway, or establish a motorbus service to Winnipeg. The building of an electric railway between Transcona and Winnipeg has been under discussion for some years, and one or two contracts were entered into for construction, but nothing further was done. A press report states that at a public meeting held Mar. 12, it was decided to arrange for building an electric railway at a cost of about $300,000. It is proposed to ask the Manitoba Government for a subsidy in aid of construction. The Winnipeg Electric Ry. will, it is stated, provide the cars, and will operate the line, but the town of Transcona will pay half the deficit, if the net earnings do not meet the expenses. The projected line would be about six miles long, and would enter Winnipeg over the Provencher Bridge.

A press report of Mar. 20 states the Canadian National Railways is overhauling a gasoline electric car, which, it is stated, it will run between Transcona and Winnipeg.

The Waterloo-Wellington Ry. Co. is asking the Ontario Legislature to pass a bill to authorize the building of a line from the existing line near Bridgeport to Guelph, Ont., and to give the company power to isue bonds for $40,000 a mile of its railway constructed, or under construction. We are advised that the cities of Kitchener and Guelph and the intervening municipalities of Bridgeport, Bloomingdale, New Germany, Waterloo Tp. and Guelph Tp are favorable to the building of the line. The tributary population is about 52,000 and the receipts should, it is claimed, make it a paying proposition in a short time. Grades would be easy all along, hardly exceeding 2% anywhere. There would, however, be a bridge required across the Grand River at Bloomingdale. Otherwise the line with 85 lb. rail and good construction throughout, would present no difficulties nor great cost. From Bloomingdale to New Germany, about five miles, the grading to subgrade was done some years ago by the People's Ry.

Windsor, Essex and Lake Shore Rapid Ry.—We are officially advised that the company expects to order in the near future one car of 80 lb. steel rails.

# Increases in Canadian Electric Railway Passenger Fares.

London St. Ry.—At London, Ont., City Council recommended that the council in its omnibus bill before the Ontario Legislature, should ask for power to grant an increase of fares to the London St. Ry., subject to the ratepayers approval. This recommendation was on Mar. 15, referred back to the comittee by the council for further consideration.

Montreal and Southern Counties Ry.—The Board of Railway Commissioners heard at Montreal, Mar. 9, the company's application for an increase of 20% in its passenger fares. St. Lambert and other municipalities opposed the application and judgment was reserved.

The Board of Railway Commissioners concluded on Mar. 17 its hearing of the company's application for authority to file tariffs providing for an increase of 20% on its passenger fares. The application was opposed by residents of St. Lambert, Greenfield Park, Longueuil, Chambly and other points on the line. Judgment was reserved.

Ottawa Electric Ry.—The Supreme Court of Canada gave judgment Mar. 8, granting the company's appeal re the proposed increase of fares on its Britannia Line. Objection was taken to the proposed increase by the municipalities interested, and after a hearing the Board of Railway Commissioners refused to sanction the proposed new schedule of fares. An appeal was taken to the Supreme Court and arguments were heard at the end of 1919. Subsequently the court submitted three questions to the parties interested, upon which it desired to hear further arguments. These arguments were concluded Feb. 5, and judgment was given Mar. 5 by Justice Duff and concurred in by Justice Anglin, Mignault and Brodeur; Chief Justice Sir Louis Davies and Justice Iddington dissented. The questions submitted and the answers to each as given in the judgment, are as follows:

"1. Whether upon the proper construction of the agreements with the City of Ottawa and the Village of Hintonburg, the statutes relating to the Ottawa Electric Ry. Co. and the relevant provisions of the railway acts, the board was right in disallowing the tariff of the company filed, providing for payment of additional fare for carriage upon the extension from Holland Ave., notwithstanding that the board has found as a fact that the compnay did not require additional revenue." Judgment: "This question is not answered since it involves questions of fact within the exclusive competence of the Board of Railway Comissioners. So far as it involves a question of law it is covered by the answer given to the first part of the third question."

"2. Also, whether upon the proper construction of the said agreements and statutes, for the purpose of computing the toll to be charged to passengers upon the said extension the point of commencement of the said extension should be considered to be at Holland Ave., or at the former westerly limit of the Village of Hintonburg, now the City of Ottawa. Judgment: "At Holland Ave."

"3. Has the board the right to treat the company's operations as a whole and continue the existing tariff?" Judgment: "No."

"Or must the board permit the filing of tariffs on a mileage basis covering services on the Britannia line without reference to the larger part of the system covered by municipal agreements?" Judgment: "Yes; though not necessarily on a mileage basis."

Mr. Justice Duff added: "My reasons for these conclusions can be stated briefly. They are based upon two propositions which appear to me clearly established. First. I concur fully with the opinion of the Chief Railway Commissioner as to the effect of the statute of 1894. By force of that statute and the scheduled agreements, the rights and obligations of the Ottawa Electric Ry. Co. in relation to the fares chargeable in respect of the services provided for or contemplated by the agreement between the street railway companies and the city—services which may with sufficient accuracy be referred to as city services—were to be governed by the agreement itself, and consequently the Ottawa Electric Ry. Co. did not on the passing of the Railway Act of 1903 (see sec. 3) become in respect of such fares subject to the Board of Railway Commissioners jurisdiction touching the matter of the regulation of rates.

"Second. As regards the Britannia extension, on the other hand, authorized by the act of 1899, I can find nothing in that statute excluding this line from this jurisdiction of the board and I think that on the passing of the Railway Act of 1903, the provision of that enactment on the subject of the regulation of rates became applicable to it. The first of these propositions seem to involve this consequence: The fares exigible under the statute and agreement of 1894 must be taken to be a just remuneration, neither too much, nor too little, for the city services; and it seems to follow that in determining what is a just and reasonable remuneration for the services performed on the Britannia lines the proceeds derived from the city services must be left out of account. That is to say that in determining what is just and reasonable in respect of the Britannia lines, you must start with the hypothesis that everything paid in respect of city services has been fully earned by the performance of those services. The point may be illustrated by a reference to one example of the manner in which the existing tariff operates. Under the tariff the company is entitled to charge a maximum fare of 5c for transport from the corner of Laurier Ave., and Charlotte St. to Britannia, a charge which the company, by the act and agreement of 1894, is nevertheless entitled to make for that part of the service which is performed within the city. In other words. under existing conditions, so long as the Britannia line is kept in operation and this service is maintained, the company is obliged to give, for a fare of 5c the city service (for which by law it is entitled to receive a fare of 5c) plus the service from Holland Ave. to Britannia; and that appears to be the necessary consequence of treating the operations of the company as a whole

and maintaining the existing tariff. I think it is not permissible to do this, because thereby full effect is denied to the company's legal rights under the statute and agreements of 1894. "I must mention that in answering these questions we are governed by the law as it stood before the enactment of the Railway Act of 1919."

The company's superintendent, F. D. Burpee, in announcing on Mar. 9 that the company would file with the Board of Railway Commissioners a tariff for its lines outside of the boundaries fixed by its agreement with the city, is reported to have said: "The new tariff will probably compare with that approved by the Board of Railway Comissioners for the Hull Electric Co.'s lines, but our company may decide in actual practice to make a somewhat lower rate than the Hull company. The latter's rate from Ottawa or Hull to the Royal Ottawa Golf Club is 10c. The rate to Rivermead is 15c straight, or 2 tickets for 25c. The rate from Ottawa or Hull to Aylmer is 20c or 3 tickets for 50c. In all of these cases Ottawa residents pay in addition to the above rates the regular fares on the Ottawa cars to the points where they board the Hull cars."

The Board of Railway Commissioners passed order 29467 Mar. 17 as folows: The application of Ottawa Electric Ry. under section 334 of the Railway Act, 1919, for approval of Supplement 1 to its Standard Passenger Tariff C.R.C. 1. Upon its appearing that the territorial description in the company's Standard Passenger Tariff C.R.C. 1, approved by order 4418, Mar. 8, 1908, differs from that given in the Supreme Court of Canada's decision delivered Mar. 8, 1920, in the appeal from the board's order, holding, in effect, that the operation of the different portions of the company's system should be treated as one line, and the company having now filed an amending supplement to its Standard Passenger Tariff C.R.C. 1, for the purpose of making such territorial description agree with the Supreme Court's decision. It is ordered that the said supplement 1, filled to become effective April 5, be approved, provided that the supplement, together with reference to this order, be published in at least two consecutive weekly issues of The Canada Gazette, prior to the effective date.

On Mar. 18 the company gave notice in the Canada Gazette that its supplement 1 to Standard Passenger Tariff C. R. C. 1, effective April 5, had been approved by the Board of Railway Commissioners. It is as follows: Co. Standard Passenger Tariff C.R.C. 1 shall conform to the judgment of the Supreme Court of Canada of Mar. 8, 1920, the following words 'the area defined by Holland avenue, in the west, the City of Hull in the north, Cloverdale road in the east, and Grove street in the south, shall be substituted for the words 'the City of Ottawa,' wherever they appear in the company's Standard Passenger Tariff C.R.R. 1."

The company then filed with the board a Special Passenger Tariff effective April 5, C.R.C. 6, cancelling C.R.C. 4 as follows:

"Between points within the area defined by Holland Ave., in the west, the City of Hull in the north, Cloverdale Road in the east, and Grove St. in the south; and between points therein and the Experimental Farm and intermediate points.

"Between 5.30 a.m. and 12 midnight, 5c.

"Children under 10 years of age 3c

"To working men and others 33 tickets for $1, or 8 tickets for 25c, good from first trip in the morning until 7.30 a.m., and between 5 and 6.30 p.m.

"Seven tickets for 25c, good only on Sundays.

"School children under 14 years to and from school at the rate of 40 tickets for $1, good between 7 and 9.30 a.m., 11.30 a.m. and 1.30 p.m., and 3.30 and 5 p.m.

"Between 12 midnight and 5.30 a.m., 10c.

"Between 5.30 a.m. and 12 midnight between Holland Ave. and McKellar, and intermediate points. Five cents for each passenger one way; three cents for each child under 10 years of age, one way.

"Between McKellar and Britannia-on-the-Bay, and intermediate points. Five cents for each passenger one way; three cents for each child under 10 years of age one way.

"Between Cloverdale Road and the Rifle Range, and intermediate points. Five cents for each passenger one way; three cents for each child under 10 years of age, one way.

"Between 12 midnight and 5.30 a.m. in each of the above zones, 10c."

Nepean Tp. Council decided Mar. 18 to apply to the Supreme Court for leave to appeal against its decision to the Imperial Privy Council. The Ottawa City Council, on the same day voted 8 to 8 on a motion to join in the appeal which was therefore lost. An application in respect to the matter comes before Justice Mignault, of the Supreme Court in Chambers, Mar. 22, Nepean Tp. asking of a stay of proceedings until Mar. 29. The judge suggested that the company should give coupons or refund checks to passengers on the Britannia line, so that in the event of the Privy Council reversing the judgment, the township could collect from the company the extra fares paid. The company was given time to decide what it would do in that connection.

**St. Thomas Municipal Ry.**—The St. Thomas, Ont. City Council's Street Railway Committee considered at a recent meeting the question of increasing fares on the St. Thomas Municipal Ry., and left it over for further discussion.

## Legislation for Taking Over Ottawa Electric Railway.

Ottawa City Council is applying to the Ontario Legislature for an act to authorize it to pass a bylaw to establish the Ottawa City Transportation Commission to consist of three members who shall be resident electors of the city, shall hold office for three years, and be paid salaries to be determined by the council. The members of the commission to be nominated by the board of control and appointed by the council, but that no member of the council be appointed a member of the commission. Upon the city council acquiring the Ottawa Electric Ry. and the company's real and personal property used in connection with the working of the railway, it shall be vested in the commission, which shall have its control and management. The property to be acquired is described in the statutes of 1895. Power is asked to take over any lines outside the city, but within the province, by agreement with the company, but subject to the Ontario Railway and Municipal Board's approval. The commission is to have full power to make, complete, alter, extend, maintain and operate a railway, tramway and other means or system of local transportation worked by any power except steam, in Ottawa, the County of Carleton, Ont., and in the City of Hull, Que., to acquire rolling stock and equipment for it to carry passengers and freight and to fix tolls to be charged; to provide and maintain a pension fund, and to procure advances not exceeding $200,000 at any one time to meet operating and maintenance expenses. To carry out these objects the commission shall regulate tolls and fares so that they shall produce in each year a sufficient sum for operating expenses, the cost of maintenance, renewals and replacements, and for the principal and interest of all fixed and floating charges it shall prepare a yearly statement of its affairs and a report upon its operations for the preceding year, together with an estimate of expenditures and revenue for the then current year for presentation to the council; shall pay to the council such monies as may be required to meet interest and sinking fund of debentures; shall submit its books for audit by auditors appointed by the council; shall furnish the council with estimates of expenditures it desires to be authorized to make out of debentures to be issued, and shall keep a banking account.

Power is also asked to authorize the council to provide by bylaws to be passed without obtaining the ratepayers' assent, for borrowing upon debentures the money required for the purchase of the existing railway in Ottawa, and the lines within the province outside the city. In order to meet any expenditure of the commission the council may, on a two-thirds vote, pass a bylaw to raise the same by debentures without obtaining the ratepayers assent, but in the event of such a vote not being obtained a bylaw may be submitted to the ratepayers, and, if approved by them, shall be passed by the council. Provision is made for fixing the value of the railway by arbitration under the terms of the agreement of 1893, and for other matters connected with the taking over of the line.

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French tramways and bus fares have been advanced 75%

**Motor Omnibus, Toronto**—The Toronto Board of Control is reported to have asked the Works Commissioner to prepare a report on the establishment of a motor omnibus transportation service in parts of the city where they could be used to advantage.

**Extra Cars for Toronto Ry.**—The Ontario Railway and Municipal Board on Mar. 16 heard the City of Toronto's application in reference to the proceedings to compel the Toronto Ry. to provide 200 additional cars. After some discussion the further hearing of evidence and arguments was adjourned to April 9.

**Montreal Pole Tax.**—The Quebec Legislature passed an act last session amending the City of Montreal's charter one of the provisions of which authorizes the city to levy a surtax on poles and materials of public utility companies on the street, the Montreal Tramways Co., and the Montreal Water and Power Co., being excepted. Before the bill was passed it was decided that the levy of this special tax should not be made after 1921.

The Ottawa, Ont., Board of Control is reported to have approved of the skip stop plan for improving the Ottawa Electric Ry. service. The Ontario Hunt and Motor Club asked that the stops be made on the near, instead of the far side of the street crossings, but F. D. Burpee, Superintendent Ottawa Electric Ry., stated that the company is absolutely against this system, on the ground that the railway is being operated for the benefit of the thousands, and that under the near side stop system it would take eight cars to do the work that six do under the far stop plan.

# Marine Department

## Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

**Orders for Steamships.**—The following questions were asked in the House of Commons, Mar. 10, by J. Archambault, M.P. Chambly-Vercheres, and answered by the Minister of Marine.

How many contracts for shipbuilding were given by the government since Jan. 1, 1918? Answer: Fifty-six.

To what firms were the contracts given and what were the respective amounts? Answer: Canadian Vickers, Ltd., Montreal, 12; Collingwood Shipbuilding Co., Collingwood, Ont., 7; Wallace Shipyards, Vancouver, B.C., 4; Tidewater Shipbuilders, Three Rivers, Que., 4; Davie Shipbuilding and Repairing Co., Lauzon, Que., 3; Port Arthur Shipbuilding Co., Port Arthur, Ont., 7; Halifax Shipyards, Halifax, N.S., 4; Victoria Machinery Depot Co., Victoria, B.C., 2; J. Coughlan & Sons, Vancouver, B.C., 4; Nova Scotia Steel & Coal Co., New Glasgow, N.S., 2; Prince Rupert Dry Dock & Engineering Co., Prince Rupert, B.C., 2; British American Shipbuilding Co., Ltd., Welland, Ont., 2; Dominion Shipbuilding Co. Toronto, Ont., 2; Midland Shipbuilding Co., Midland, Ont., 1.

Were all of the contracts given after proper tender? Answer: Contracts were placed after offers had been received from the several yards and prices and other details agreed upon.

If so, were they given to the lowest tenders? If not, why? Answer: Answered by answer to previous question.

Editor's note:—The statement quoted above, that contracts for 56 ships have been awarded, evidently refers to the number of contracts actually signed up to Mar. 10. Canadian Railway & Marine World's information, as given in the table on page 207 of this issue, is that contracts for 63 ships have been arranged.

A Montreal press dispatch of Mar. 21 credits the Minister of Marine with having stated that day, in a speech before the Canadian Workers' Federation of Returned Soldiers and Sailors, that with the completion of 62 cargo steamships that part of the government's shipbuilding programme would be at an end, and that a final conclusion had not been reached in regard to building passenger steamships.

**Deliveries of Steamships.**—In addition to the steamships mentioned in Canadian Railway & Marine World previously, the following delivery has been made:

Mar. 6, s.s. Canadian Exporter; Marine Department contract 35; builder's yard no. 12; approximately 8,390 d.w tons; J. Coughlan & Sons, Vancouver, B. C.; delivered to Marine Department, transferred to Canadian Government Merchant Marine, Ltd., and loaded with general cargo for Sydney and Melbourne, Australia; and Auckland and Wellington, New Zealand.

The s.s. Canadian Inventor; Marine Department contract 36, builder's yard no. 13; approximately 8,390 d.w tons; built by J. Coughlan & Sons, Vancouver, B.C.; was expected to be delivered to the Marine Department about the end of March.

The s.s. Canadian Prospector; Marine Department contract 37; builder's yard no. 14; approximately 8,390 d.w. tons; being built by J. Coughlan & Sons, Vancouver; will probably be delivered early in April.

**Steamships in Operation.**—The Minister of Railways stated in the House of Commons, Mar. 11, in answer to questions by G. Parent, M.P. for Quebec West, that the Canadian National Rys. had at that time 25 steamships plying on various routes, the same being operated under order-in-Council of June 2, 1919, the names of the ships, their approximate deadweight tonnage, their routes, and their ownership being as follows:

| Name | Approx. d.w. tons | Trade Route. |
|---|---|---|
| Canadian | | |
| Voyageur | 4,575 | St. John-London. |
| Pioneer | 8,408 | Halifax-S. America. |
| Warrior | 3,995 | St. John-West Indies. |
| Ranger | 8,382 | St. John-Liverpol |
| Recruit | 3,964 | Stranded account ice St. Lawrence. |
| Volunteer | 4,485 | Laid up at Quebec. |
| Trader | 3,341 | Halifax-West Indies. |
| Sailor | 3,357 | Halifax-West Indies. |
| Seigneur | 8,391 | Halifax-London. |
| Signaller | 3,990 | Halifax-West Indies. |
| Miller | 8,390 | Halifax-Liverpool. |
| Adventurer | 3,408 | Halifax-West Indies. |
| Gunner | 3,990 | Halifax-West Indies. |
| Aviator | 5,100 | Halifax-West Indies. |
| Sower | 3,400 | St. John-West Indies. |
| Navigator | 4,575 | St. John-London. |
| Settler | 5,100 | Halifax-Glasgow. |
| Spinner | 8,393 | Halifax-S. America. |
| Raider | 5,100 | Vancouver-Australia, N.Z. |
| Importer | 8,390 | Vancouver-Australia, N.Z. |
| Exporter | 8,390 | Vancouver-Australia, N.Z. |

The above are owned by the King, represented by the Minister of Marine.

| | | |
|---|---|---|
| T. J. Drummond | 3,000 | St. John-West Indies. |
| Sheba | 3,500 | Halifax-West Indies. |
| J. A. McKee | 3,000 | St. John-West Indies. |

The last three mentioned above are owned by the King, represented by the Minister of Railways.

**Dominion Marine Association.**

President, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

Second Vice President, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

Executive Committee, E. H. Beazley, Union Steamship Co. of British Columbia, Vancouver; W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

General Counsel, Francis King, M.A., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

**Appointments.**—B. C. Keeley has been appointed General Agent, C.G.M.M., Ltd., at Vancouver, B. C.

**Steamship Canadian Recruit.** The following questions were asked in the House of Commons, Mar. 10, by W. Duff, M.P., for Lunenburg, the answers being given by the Minister of Railways:

Does the Government own a ship named the Canadian Recruit? Answer: Yes.

If so, what is her gross, net, and deadweight tonnage? Answer: Gross, 2,409; net, 1,451; deadweight 3,964.

What did she cost ready for sea? Answer: $813,252.

Where is the said ship at the present time? Answer: Stranded on Vache reef, in the St. Lawrence, at the mouth of the Saguenay.

What amount of insurance is carried on the ship's hull? Answer: Insurance on hull, $578,571; other insurance, $231,429; total insurance on ship, $810,000.

What is the ship's valuation as appears in her hull policies? Answer: $578,571.

What insurance is carried on the ship's freight? Answer: Freight charges are prepaid and not insured. Cargo is at shipper's risk, and each cargo owner carries at discretion his own insurance.

While the ship is in her present position and condition are the government's interests being properly protected? If so, how? Answer: Yes. Notice of abandonment has been tendered to the underwriters. Necessary steps to prevent further damage have been taken by underwriters' representatives.

Editor's note: As stated above, the d.w. tonnage of this ship is 3,964 tons, which at the contract price of $205 a ton, comes to $812,620. The difference of $632 between this and the price paid was, we are officially advised, for minor extras.

**British-American Shipbuilding Co.** Welland, Ont., advised us Mar. 16, that it expected to launch the s.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4; approximately 4,575 d.w. tons, for Canadian Government Merchant Marine, Ltd., during the week beginning Mar. 22. The s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, is scheduled to be launched in April. We have since been advised that the afterpart of the s.s. Canadian Otter, which is being built in two sections, was launched Mar. 25, and that it was expected to launch the forepart a few days thereafter.

**J. Coughlan & Sons, Vancouver, B.C.** The s.s. Canadian Exporter; Marine Department contract 35; builder's yard no. 12; approximately 8,390 d.w tons; built by this company, made her trial trips on Mar. 5, was delivered to the Marine Department, and transferred to Canadian Government Merchant Marine Ltd., on Mar. 6. She was loaded with general cargo for Sydney and Melbourne, Australia, and Auckland and Wellington, New Zealand.

This company advised us recently that it expected to deliver the s.s. Canadian Inventor; Marine Department contract

36; builder's yard no. 13; approximately 8,390 d.w. tons; to the Marine Department, about the end of March.

This company expects to deliver to the Marine Department early in April the s.s. Canadian Prospector; Marine Department contract 37; builder's yard no. 14; approximately 8,390 d.w. tons.

Midland Shipbuilding Co., Midland, Ont. As stated in Canadian Railway & Marine World for Dec., 1919, this company was given an order by the Marine Department for a steel cargo steamship for Canadian Government Merchant Marine Ltd., approximately 3,950 d.w. tons, at $180 a long ton, aggregating $718,200. The contract was signed Feb. 26, its number being 54, and the builder's yard no. 10. It is quite problematical when the keel will be laid, steel deliveries being so uncertain.

Nova Scotia Steel and Coal Co., New Glasgow, N.S. The steel cargo steamship Canadian Miner; Marine Department contract 41; builder's yard no. 6; approximately 2,800 d.w. tons; which this company is building for Canadian Government Merchant Marine, Ltd., will probably be launched early in April and delivered in May.

The keel for the third steel cargo steamship, of approximately 2,800 d.w. tons; builder's yard no. 8; which this company has under contract from the Marine Department, for Canadian Government Merchant Marine, Ltd., will probably be laid some time in April, or as soon as the bottom shell plates are received.

Port Arthur Shipbuilding Co., Port Arthur, Ont., which received an additional contract from the Marine Department recently, for a steel cargo steamship of approximately 3,890 d.w. tons, builder's yard no. 45, advises us that the date for laying the keel has not been decided on, and that it will depend largely upon steel deliveries.

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**The Lord Strathcona Steamship Co.**, Ltd., the incorporation of which, with $1,500,000 capital, and office at Montreal, was announced in our last issue was formed to acquire and operate the s.s. Lord Strathcona, formerly owned and operated by the Century Shipping Co., London, Eng. The ship, which has been transferred to the Canadian register, was built of steel, at Sunderland, Eng., in 1915 her dimensions being, length 455ft., breadth 58ft. depth 31ft.; tonnage, 7,335 gross, 4,184 registered. She is screw driven by engine of 613 h.p.

**Kingston Harbor Improvements.**—J. Archambault, M.P., for Chambly-Vercheres, said in the House of Commons, Mar. 16: "I would draw the attention of the government to a dispatch from Kingston appearing in the Montreal Standard of Mar. 13, which states that the Canadian Government has given the City of Kingston the assurance that $2,500,000 will be spent on harbor improvements there. I would ask the Minister of Finance, who is also representaive of Kingston in this house, if the report is true, and if so, whether these improvements are to be made in fulfilment of an election promise." Sir Henry Drayton, Minister of Finance, replied as follows: "The report is absolutely incorrect. That also answers my hon. friend's second question, but in order to make it a little more emphatic, I might say that there was no election promise.

## Compulsory Equipment of Ships with Radiotelegraph Apparatus.

The Defence of the Realm Regulation 23A, passed by Dominion order-in-Council, Jan. 15, 1918, calling for the compulsory equipment, with radio apparatus of all Canadian steamships of 1,600 tons and over, when plying to Europe, was automatically cancelled as from Jan. 1, 1920. The only Canadian legislation now in effect calling for the compulsory equipment of certain ships, with radio apparatus, is that prescribed in the Radio-Telegraph Act, Dominion Statutes, 1913, chap. 43, sec. 4, which provides that after Jan. 1, 1914, no passenger steamship, whether registered in Canada or not, (a) licensed to carry 50 or more persons, including passengers and crew, and going on any voyage, which is, or which includes a voyage of more than 200 nautical miles, from one port or place, to another port or place, or (b) licensed to carry 250 or more persons, including passengers and crew, and going on any voyage which is, or which includes a voyage of more than 90 nautical miles, from one port or place, to another port or place, or (c) licensed to carry 500 or more persons, including passengers and crew, and going on any voyage which is, or which includes a voyage of more than 20 nautical miles, from one port or place, to another port or place, shall leave any Canadian port, unless it is equipped with an efficient radiotelegraph apparatus, in good working order, capable of transmitting and receiving messages over a distance of at least 100 nautical miles, by night and by day, and in charge of a person fully qualified to take charge of and operate the apparatus. Any person in charge of any passenger steamship which leaves any Canadian port, contrary to the provisions of this section, shall be liable to a fine not exceeding $1,000 and cosst, which shall be a lien upon the steamship. This section does not apply to passenger steamships plying on Canadian rivers, including the River St. Lawrence as far seaward as a line drawn from Father Point to Point Orient, or on Northumberland Straits, or on Georgian Bay, or on Canadian lakes other than Ontario, Huron and Superior, and the provisions of paragraph (c) above, does not apply to steamships making voyages on Lakes Ontario, Erie, Huron, and Superior, the regular route for which is not at any point more than seven miles from the shore. This section does not apply to steamships calling at Canadian ports, solely for the purpose of obtaining bunker coal, or provisions, for the use of such steamship, or through stress of weather, or for repairs.

We are advised, in regard to British legislation that an act to make further provisions with regard to wireless telegraphy in ships has become law, but we are not informed as to whether these provisions have been put in effect or not. This is dependant on the date the Defence of the Realm Regulation (British 37B) is cancelled.

## The Victoria Dock Case Decided.

Ottawa press dispatch, Mar. 9.—Sir Walter Cassels has rendered judgment in the Exchequer Court for the Dominion Government in the petition of right of Grant Smith & Co. and MacDonnell, Ltd., against the King, for sums totalling $333,812, in connection with excavation work performed by the suppliants in Victoria, B. C., and popularly known as the Victoria dock case. The contractors claimed $292,110 for rock excavation, $14,703 for earth excavation, and $27,000 for filling under their contract with the Public Works Department. There was no conflict of opinion as to the totals of excavation, the disagreement between the two parties being wholly as to the classification, the government claiming that rock prices were charged for material which should come under a lower classification. The entire claim was thrown out, Sir Walter Cassels finding that the resident engineer was in collusion with the contractors, and that anything he certified should be set aside and that an attempted fraud was intended by him and those representing the contractors. Sir Walter also found that the estimate of the work as prepared by the Public Works Department was correct.

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**Senate Committee on Railways, Telephones and Harbors.**—The Senate on Mar. 3, appointed the following committee: Barnard, Beaubien, Béique, Belcourt, Blain, Bostock, Bourque, Bradbury, Casgrain, Crosby, Dandurand, David, Daniel, De Veber, Domville, Donnelly, Douglas, Edwards, Farrell, Foster, Fowler, Girroir, Godbout, Gordon, King, Laid, Lavergne, Lougheed,Lynch-Staunton Macdonell, McCall, McHugh, Michener Milne, Mitchell, Murphy, O'Brien, Poirier, Pope, Power, Robertson Ross (Middleton), Ross (Moosejaw), Sharpe, Tessier, Thompson, Watson, Webster (Stadacona) and White (Inkerman).—49.

## Vessels Added to and Deducted From the Canadian Register During December, 1919.

| | Steam. | | | Sailings. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| Added. | No. | Gross. | Registered. | No. | Gross. | Reg'red |
| Built in Canada | 9 | 20,718 | 12,555 | 28 | 5,771 | 5,144 |
| Purchased from foreigners | 1 | 231 | 93 | 8 | 2,827 | 2,738 |
| Transferred from United Kingdom | 2 | 14,835 | 9,396 | — | — | — |
| New registers | 3 | 68 | 65 | 3 | 124 | 104 |
| Tonnage alterations without reregistry | — | — | — | — | 87 | 94 |
| Totals | 15 | 35,852 | 22,109 | 39 | 8,809 | 8,080 |
| Deducted. | | | | | | |
| Wrecked or otherwise lost | 5 | 5,349 | 3,472 | 27 | 3,168 | 2,961 |
| Broken up or unfit for use | 13 | 987 | 612 | 40 | 2,909 | 2,851 |
| Converted to store ships (not navigable) | 1 | 16 | 8 | — | — | — |
| Used as light ships, etc | — | — | — | 1 | 10 | 10 |
| Sold to foreigners | 2 | 2,777 | 1,688 | 2 | 57 | 40 |
| Transferred to United Kingdom | — | — | — | — | — | — |
| Transferred to British possessions | 1 | 276 | 161 | 3 | 678 | 615 |
| New registers | — | — | — | 8 | 239 | 236 |
| Tonnage alterations, without reregistry | — | — | — | — | 564 | 814 |
| Totals | 22 | 9,405 | 5,941 | 81 | 7,625 | 7,527 |

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4,575 | $207. | $ 947,025 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " | 67 | *8.408 | 180. | 1,513,440 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbuilding Co. | 61 | *3,995 | 205. | 818,975 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd. | 100 | 4,485 | 207. | 928,395 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | 4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9, 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbuilding Co. | 62 | *3,964 | 205. | 812,620 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | June 3, 1918 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | Dec. 27, 1919 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | ..... | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 11, 1919 | Oct. 9, 1919 | ..... |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 28, 1919 | ..... | ..... |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | *3,341 | 205. | 684.905 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 9, 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3,408 | 210. | 715,680 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | *3,357 | 205. | 688,185 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3,405¾ | 210. | 715,207.50 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18, 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8,382 | 188. | 1,575,816 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1,577,508 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8,393 | 188. | 1,577,884 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8, 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Armourer | Harbor Marine Co. Ltd. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | ..... | ..... |
| 30 | Jan. 24, 1919 | Canadian Composer | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | ..... |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Lloyd's | 10½ | Aug. 29, 1919 | ..... | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10½ | Aug. 29, 1919 | ..... | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Apr. 26, 1919 | Dec. 6, 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | ..... |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan. 24, 1920 | ..... |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | Feb. 24, 1920 | ..... |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8, 1919 | Dec. 20, 1920 |
| 41 | Mar. 31, 1919 | Canadian Miner | " " | 6 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | ..... | ..... |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Bri. Corp. | 10 | Mar. 29, 1919 | ..... | ..... |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10 | July 14, 1919 | ..... | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbuilding Co. | 65 | 3,990 | 180. | 718,200 | Lake, s.d., p. b., and f'c's'le | Lloyd's | 11 | Sept. 3, 1919 | Dec. 27, 1919 | ..... |
| 47 | Sept. 11, 1919 | Canadian Observer | " " | 66 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | ..... | ..... |
| 48 | Sept. 2, 1919 | Canadian Artificer | Dominion Shipbuilding Co. | 10 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | ..... | ..... |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 54 | Feb. 26, 1920 | ..... | Midland Shipbuilding Co. | 10 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Wallace Shipyards Ltd. | 103 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Collingwood Shipbuilding Co. | — | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Collingwood Shipbldg. Co., Kingston | — | 3,890 | 185.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Nova Scotia Steel & Coal Co. | 8 | 2,800 | 190. | 532,000 | 2.d. p., b. and f'c's'le | " | 8½ | ..... | ..... | ..... |
| — | Feb. 2, 1920 | ..... | Davie Shipbuilding & Repairing Co. | 476 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | Port Arthur Shipbuilding Co. | 45 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | J. Coughlan & Sons | 20 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| — | ..... | ..... | " | 21 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 383,519¾ | | $73,022,995.50 | | | | | | |

# Ocean, Coast, Lake and River Steamship Officers for 1920.

The following appointments made by Canadian companies engaged in navigation, for their various steamships and tugs, have been reported to Canadian Railway and Marine World. The first column contains the names of the ships, the second those of the captains, and the third those of the chief engineers:

**Algoma Central Steamship Line, Sault Ste. Marie, Ont.**

| | | |
|---|---|---|
| Agawa | M. A. Livingstone | J. L. Smith |
| Home Smith | A. McIntyre | D. McLeod |
| J. Frater Taylor | J. D. Montgomery | W. T. Rennie |
| W. C. Franz | W. C. Jordan | A. M. MacInnes |

**Bathurst Lumber Co., Bathurst, N.B.**

| | | |
|---|---|---|
| Betty B. | A. Hains | R. Kane |
| Nipisiguit | F. Curwin | P. Adams |
| Peggy L. | E. Chamberlain | A. Lavigne |

**Canada Atlantic Transit Co., Montreal.**

| | | |
|---|---|---|
| Arthur Orr | J. Simons | D. E. Mance |
| Kearsarge | N. Jaenke | F. Walker |

**Canada Steamship Lines Ltd., Montreal.**

| | | |
|---|---|---|
| Belleville | J. J. Farrell | G. A. Sauve |
| Bickerdike | T. H. Johnston | H. W. Fletcher |
| Cadillac | W. Beatty | H. Myler |
| Cayuga | C. J. Smith | W. Taylor |
| Chippewa | W. Malcolm | E. A. Prince |
| City of Hamilton | O. Patenaude | W. Dungan |
| City of Ottawa | J. L. Baxter | John Kennedy |
| Collingwood | P. McKay | H. J. Jack |
| Corona | B. A. Bongard | Joe Kennedy |
| E. B. Osler | J. H. Hudson | R. R. Foote |
| Emperor | D. W. Burke | G. N. Smith |
| Fairfax | M. Heffernan | F. Patterson |
| Haddington | R. J. Wilson | A. E. Kennedy |
| Ionic | A. Wilson | A. E. Crosthwaite |
| J. H. G. Hagarty | G. W. Pearson | C. Robertson |
| Kingston | A. E. Stinson | G. MacDonald |
| Longueuil | H. Mandeville | H. Noel |
| Macassa | F. J. Corson | J. A. Gunn |
| Maplegrove | H. Brian | C. Gray |
| Maplehill | H. A. Leaney | W. Keith |
| Martian | R. McIntyre | J. B. McLaren |
| Midland King | N. McLennan | C. Leriche |
| Midland Prince | A. B. McIntyre | J. A. Pickard |
| Modjeska | J. Henderson | ..... |
| Montreal | F. X. La France | N. Beaudoin |
| Murray Bay | W. Gagne | O. Bonin |
| Omaha | K. LaRush | John Holler |
| Quebec | ..... | J. Matte |
| Rapids King | G. Batten | W. Hazlett |
| Rapids Prince | S. Putnam | G. M. Hazlett |
| Saguenay | J. Simard | G. Gagnon |
| Sarnian | R. Pyette | I. J. Boynton |
| Seguin | W. Brian | F. A. McCauley |
| Sir Trevor Dawson | H. Hinslea | G. Schroder |
| Stadacona | G. H. Page | N. L. Shay |
| Syracuse | ..... | J. A. Boulanger |
| T. P. Phelan | E. J. Shannon | T. H. Hazlett |
| Three Rivers | ..... | G. Gagnon Jr. |
| Toiler | W. H. Montgomery | E. Scott |
| Toronto | E. A. Booth | J. E. Readman |
| W. D. Matthews | A. F. MacLennan | W. Reid |
| W. Grant Morden | C. E. Robinson | Jas. McGregor |
| Wyoming | E. Walkinshaw | J. Kirk |

**Canadian Government Merchant Marine Ltd., Montreal.**

| | | |
|---|---|---|
| Canadian Aviator | H. S. Hilton | J. F. Brown |
| Canadian Exporter | W. Bradley | H. J. Robinson |
| Canadian Importer | A. O. Cooper | J. D. Robinson |
| Canadian Miller | J. G. Randell | J. M. Roche |
| Canadian Navigator | E. C. Sears | R. Downie |
| Canadian Pioneer | T. R. Coffin | P. C. Bennett |
| Canadian Planter | ——— | J. Young |
| Canadian Raider | R. Winter | M. Honour |
| Canadian Rancher | W. Bradley | ——— |
| Canadian Ranger | A. L. Starratt | W. D. McGregor |
| Canadian Recruit | P. J. Murphy | W. Byers |
| Canadian Sailor | W. E. Baker | A. Cunningham |
| Canadian Seigneur | F. Ferguson | J. Gladstone |
| Canadian Settler | M. Robertson | S. Evans |
| Canadian Signaller | J. E. Faulkner | F. C. Brown |
| Canadian Sower | F. Nelson | L. Cunningham |
| Canadian Spinner | J. Reith | J. R. Pringle |
| Canadian Trader | J. Murray | C. Thompson |
| Canadian Trooper | R. J. Fisher | F. W. Wilson |
| Canadian Volunteer | ——— | J. Campbell |
| Canadian Voyageur | J. D. McKenzie | W. G. Beaver |
| Canadian Warrior | C. R. Bissett | T. Hoey |

**Canadian National Railways, Montreal.**

| | | |
|---|---|---|
| Thomas J. Drummond | T. J. Davies | A. F. Hamelin |
| J. A. McKee | J. Lintlop | J. Cann |
| Sheba | J. C. Shaw | H. McNichol |

**Canadian National Rys., Vancouver, B.C.**

| | | |
|---|---|---|
| Canora | J. Brown | J. E. Blackaller |
| Germania | J. Colborne | P. Thorp |
| Sebastian | J. McKiernan | D. Martin |

**Canadian Pacific Car and Passenger Transfer Co., Prescott, Ont.**

| | | |
|---|---|---|
| Charles Lyon | W. Henry | L. Black |

**Canadian Pacific Ocean Services Ltd., Montreal.**

| | | |
|---|---|---|
| Batsford | W. Henderson | J. Jamieson |
| Corsican | A. Rennie | J. R. Nelson |
| Dunbridge | A. Stewart | A. Clark |
| Empress of Asia | A. J. Hailey | J. Lamb |
| Empress of Britain | G. Webster | A. E. Philp |
| Empress of France | E. Cook | R. Wilson |
| Empress of Japan | W. D. Hopcroft | D. G. R. Smith |
| Empress of Russia | A. Robinson | W. J. P. Davies |
| Grampian | G. Hamilton | H. G. Donald |
| Holbrook | A. H. Sargent | A. Ritchie |
| Mattawa | H. Lewis | C. W. Hall |
| Melita | H. Parry | R. G. Hughes |
| Metagama | J. Turnbull | E. MacFadyen |
| Methven | H. James | E. T. Painter |
| Minnedosa | G. C. Evans | E. H. Stanley |
| Montcalm | E. Landy | A. McLellan |
| Monteagle | A. J. Hosken | W. H. Frouse |
| Montezuma | A. H. Clews | W. H. Vine |
| Mottisfont | J. McDonald | T. Heggie |
| Pretorian | J. Hall | J. S. Cummings |
| Sardinian | R. McKillop | R. S. Cragg |
| Scandinavian | E. Griffiths | J. E. Thearle |
| Scotian | W. P. Hains | J. Orme |
| Sicilian | H. Latta | W. Stark |
| Tunisian | C. W. Hodder | J. Cassidy |
| Victorian | ——— | ——— |
| War Beryl | A. Ogilvie | B. R. Hood |
| War Peridot | J. N. Griffiths | H. Craig |

**Canadian Pacific Ry., Bay of Fundy Service.**

| | | |
|---|---|---|
| Empress | A. MacDonald | J. W. Pendrith |

**Canadian Pacific Ry., Detroit River Car Ferries.**

| | | |
|---|---|---|
| Michigan | R. Brown | C. A. Sullivan |
| Ontario | H. Farrow | F. Merrill |

**Canadian Pacific Ry., British Columbia Lake and River Service, Nelson, B.C.**

| | | |
|---|---|---|
| Hosmer | N. McKinnon | P. H. Pearse |
| Kuskanook | L. McKinnon | J. G. Cameron |
| Minto | W. H. Wright | N. Hawthorne |
| Moyie | F. L. Orr | J. Donaldson |
| Naramata | J. B. Weeks | T. W. Bracewell |
| Nasookin | W. Seaman | T. F. McKechnie |
| Sandon | M. P. Reid | J. P. Sutherland |
| Sicamous | J. A. McDonald | D. H. Biggan |
| Slocan | W. Kirby | T. C. I'Anson |
| Valhalla | J. Ferguson | D. McLeod |
| Whatshan | W. J. Fraser | G. E. Lodge |

**Canadian Pacific Ry., Great Lakes Steamship Service.**

| | | |
|---|---|---|
| Alberta | John McIntyre | C. Butterworth |
| Assiniboia | Jas. McConnell | A. A. Cameron |
| Athabasca | M. McKay | G. Rae |
| Keewatin | M. McPhee | W. Louis |
| Manitoba | F. J. Davis | G. A. Adam |

**Central Railway Co. of Canada Ltd., Montreal.**

| | | |
|---|---|---|
| Empress | A. Blondin | ——— |

**Cape Breton Electric Co., Sydney, N.S.**

| | | |
|---|---|---|
| Electronic | I. H. Lewis | E. H. Hanson |
| Hygeia | A. McLeod | J. Cogan |
| Peerless | G. Dicks | D. Reid |

**Chicago, Duluth and Georgian Bay Transit Co., Chicago, Ill.**

| | | |
|---|---|---|
| North American | R. H. Nutting | H. Hawkens |
| South American | E. E. Taylor | J. F. Burtz |

**Cie. Canadienne Transatlantique, Montreal.**

| | | |
|---|---|---|
| Bilbster | W. H. Venning | J. A. Turner |
| Iver Heath | G. Green | J. Williamson |
| Kamarina | F. Scott | B. Thomas |
| Lord Dufferin | J. C. McCarty | A. Clarke |
| Wisley | J. Tregarthen | R. H. Howes |

**Hugh Cann and Sons, Yarmouth, N.S.**

| | | |
|---|---|---|
| Keith Cann | A. L. MacKinnon | J. B. Greig |
| La Tour | F. E. Smith | J. C. Cumming |
| Mary H. Cann | E. F. Peters | H. L. Goodwin |
| Percy Cann | I. A. Banks | J. Nixon |
| Robert G. Cann | W. E. Morris | B. A. Lumsden |
| Wanda | F. L. Nickerson | F. Hitchen |

**Crystal Stream Steamship Co., St. John, N.B.**

| | | |
|---|---|---|
| D. J. Purdy | John Gilcrist | H. Allen |
| Majestic | H. Crabb | W. Hurdon |

**Dartmouth Ferry Commission, Dartmouth, N.S.**

| | | |
|---|---|---|
| Chebucto | M. F. Murphy<br>W. Myers | C. E. Pearce |
| Dartmouth | F. Williams | W. Case<br>J Clark |
| Halifax | C. A. Ozon | S. Stevenson<br>C. Shortt |

**Dominion Transportation Co., Sault Ste. Marie, Ont.**

| | | |
|---|---|---|
| Caribou | A. A. Batten | J.W alters |
| Manitou | N. J. McCoy | ——— |

**Grand Trunk Ry., Detroit River Car Ferries.**

| | | |
|---|---|---|
| Great Western | M. Bausette | W. Balsam, Jr. |
| Huron | O. Lalonde | A. Cook |
| Lansdowne | John Jackson | W. Balsam |

**Grand Trunk Pacific Steamship Co., Vancouver, B.C.**

| | | |
|---|---|---|
| Lorne | J. McKernan | A. S. Cameron |
| Prince Albert | H. L. Roberson | R. Knox |
| Prince George | D. Donald | R. Bell |
| Prince John | W. S. Morehouse | D. H. Cochrane |
| Prince Rupert | D. Mackenzie | A. S. Munro |
| Tillamook (motorship) | E. Thornton | C. W. Miller |

**Grand Trunk Ry., Wabash Ry., Detroit River Car Ferries.**

| | | |
|---|---|---|
| Detroit | F. A. Huntoon | H. Loury |
| Transfer | G. W. Honner | W. Taylor |
| Transport | W. Nowell | F. A. Robinson |

**Great Lakes Transportation Co., Midland, Ont.**

| | | |
|---|---|---|
| Glenbrae | R. Burke | R. Knight |
| Glencairn | B. Garvie | John Gilbert |
| Glenfinnan | W. Taylor | J. Silverthorne |
| Glenisle | J. Tindall | P. Eagles |
| Glenlivet | M. Stalker | J. A. McChristie |
| Glenlyon | A. A. Hudson | D. Sinclair |
| Glenorchy | F. Burke | G. Price |
| Glenshee | W. A. Lavigne | F. Goodwin |
| Glenstriven | ——— | E. Hurl |

**Gulf of St. Lawrence Shipping and Trading Co., Quebec, Que.**

| | | |
|---|---|---|
| Champlain | A. Fournier | J. Costin |
| Guide | A. Caron | J. Bernier |
| Labrador | A. Dube | J. Ruel |
| Lady Evelyn | J. Campbell | J. Boulanger |

**George Hall Coal Co. of Canada, Montreal.**

| | | |
|---|---|---|
| Compton | E. Groulx | G. Fitzpatrick |
| Florence | V. Gendron | S. Legendre |
| Fred Mercur | W. Mills | H. Lamoureux |
| J. H. Hackett | J. Thibault | T. Frigere |
| James W. Follette | W. Liddell | M. J. McFaul |
| John B. Ketchum | W. J. Jewitt | T. Normandeau |
| John Rugee | J. B. Gamache | O. D. Thurston |
| Lehigh | W. H. Ransom | F. A. Collier |
| Margaret Hackett | M. Allison | O. Croteau |
| Robt. R. Rhodes | J. B. Leboeuf | T. Toupin |
| Rockferry | C. A. Mahoney | A. Carrier |
| Senator Derbyshire | R. Chatel | U. Hamelin |

**Halifax and Canso Steamship Co., Halifax, N.S.**

| | | |
|---|---|---|
| Scotia | J. Cooper | C. B. Scott |

**W. Hanna & Co., Port Carling, Ont.**

| | | |
|---|---|---|
| Mink | W. H. McCulley | ——— |
| Newminko | J. J. McCulley | S. W. Lambert |

**Huntsville Lake and Bays and Lake Simcoe Navigation Co., Huntsville, Ont.**

| | | |
|---|---|---|
| Algonquin | W. N. Sangster | J. T. Smith |
| Iroquois | J. St. Amour | E. E. Goldthorp |
| Mohawk Belle | U. P. Tinkiss | W. G. Murray |
| Phoenix | J. T. Burke | H. Cookman |
| Ramona | A. T. Corbett | R. Robertson |

**Imperial Oil Ltd., Toronto.**

| | | |
|---|---|---|
| Imperial | G. Mackay | E. Brishin |
| Imperoyal | D. Sutherland | J. P. Davidson |
| Impoco | W. G. Tudor | E. Jones |
| Iocolite | C. H. Harmanson | H. V. Welch |
| Iocoma | H. C. Mimms | C. Arnberg |
| Reginolite | W. R. Smelter | J. G. Ellis |
| Royalite | F. F. Foote | G. H. Stallworthy |
| Sarnolite | A. Geddes | A. Mclaren |

**International Transit Co., Sault Ste. Marie, Ont.**

| | | |
|---|---|---|
| Algoma | M. Griffith | S. Burgess |

**Keystone Transportation Co., Montreal.**

| | | |
|---|---|---|
| Keybell | L. Beaupre | R. J. Mutchmore |
| Keynor | W. V. Smith | J. M. Robertson |
| Keyport | G. Bunting | G. Jarrell |
| Keyvive | John Guy | G. Baker |
| Keywest | A. Barrett | A. Horton |

**La Have Steamship Co., West La Have, N.S.**

| | | |
|---|---|---|
| Tussle | G. D. Pentz | F. Gregg |

**Lake Erie Navigation Co., Walkerville, Ont.**

| | | |
|---|---|---|
| Marquette and Bessemer No. 1. | James Patterson | H. Culp |

**Leonard Steam Trawlers Ltd., Montreal.**

| | | |
|---|---|---|
| Baleine | G. Kristianson | W. B. McNutt |

**Maganetawan River and Lake Steamboat Co., Burks Falls, Ont.**

| | | |
|---|---|---|
| Armour | W. M. Kennedy | R. Johnson |
| Glenada | E. Pink | J. Kennedy |
| Mike | T. Kennedy | M. Pritchard |
| Wanita | W. Keatch | C. McArthur |

**Mandy Mining Co., Pas., Man.**

| | | |
|---|---|---|
| City of Prince Albert | John MacLeod | W. Taylor |
| Minasin | S. Simpson | H. Carefoot |
| Notin | H. Parker | E. Russell |
| Sam Brisbin | V. Walker | J. Nicholls |

**Maritime Steamship Co., Blacks Harbor, N.B.**

| | | |
|---|---|---|
| Connors Bros. | E. H. Warnock | G. W. Cowie |

**Marquette and Bessemer Dock and Navigation Co., Walkerville, Ont.**

| | | |
|---|---|---|
| Marquette and Bessemer No. 2. | J. Vanbuskirk | J. J. Stevens |

**Memphremagog Navigation Co., Georgeville, Que.**

| | | |
|---|---|---|
| Anthemis | A. Clarke | F. Murray |

**Midland Transportation Co., Midland, Ont.**

| | | |
|---|---|---|
| Lucknow | J. Rutherford | J. Gilbert |
| Luckport | C. Lynn | J. Bellmore |

**Montreal Transportation Co., Montreal.**

| | | |
|---|---|---|
| Advance | J. V. Norris | G. W. Clark |
| Alert | F. Mahaffey | J. Anderson |
| Arabian | W. A. Blackwell | G. Stokes |
| Atikokan | J. A. Brown | E. Boucher |
| Cataract | J. J. Lawrence | M. J. Sherman |
| D. G. Thomson | G. Willard | H. Paus |
| Escort | W. Wright | W. Bush |
| Glenmount | W. Brown | G. Fleming |
| H. F. Bronson | Jas. Cochrane | T. Nichols |
| India | N. Menard | J. Lamoureux |
| Joyland | H. A. Patterson | L. E. Spencer |
| Manola | T. S. Patterson | J. McMillen |
| Mary P. Hall | A. Lepine | T. Brabant |
| Nicaragua | W. A. Tullock | J. A. Hawman |
| Oatland | A. N. Hogue | S. Ashie |
| R. G. A. Weaver | H. Degroseillier | G. Haines |
| Simla | C. E. Coons | D. S. Symons |
| Stormount | E. Smith | A. Stilson |
| Valcartier | Jas. Reoch | W. E. Spencer |
| Vinmount | J. A. Fergusson | F. Moyle |
| Westmount | J. F. Davis | F. Norris |
| Windsor | John Doyle | A. Dunn |

**Niagara Ferry and Transportation Co., Erie Beach Amusements Ltd., Buffalo, N.Y.**

| | | |
|---|---|---|
| Chicora | J. P. Fontaine | E. E. Chapin |
| Orleans | D. C. Christie | T. Ralfe |

**North American Bent Chair Co., Owen Sound, Ont.**

| | | |
|---|---|---|
| Michipicoten | G. Waugh | John Barrett |

**Northern Trading Co., Edmonton, Alta.**

| | | |
|---|---|---|
| Northland Echo | L. R. Morton | J. A. Patterson |
| Northland Trader | E. L. Davis | S. T. Hubbard |

**Ontario Car Ferry Co., Montreal.**

| | | |
|---|---|---|
| Ontario No. 1..... | S. McCaig | D. L. Smyth |
| Ontario No. 2..... | F. D. Forrest | J. A. Nicoll |

**Ontario Transportation and Pulp Co., Thorold, Ont.**

| | | |
|---|---|---|
| Lindere | H. Redfern | E. W. Sparling |
| Mary H. Boyce | P. J. Shaw | A. Jenkins |

**P.Q. Towing Co., Dalhousie, N.B.**

| | | |
|---|---|---|
| Grande Ligne | A. Nadeau | |

**Pacific Salvage Co., Victoria, B.C.**

| | | |
|---|---|---|
| Alaskan | J. McLeod | G. Wilson |
| Algerine | J. M. Hewison | T. W. Allan |

**Pembroke Transportation Co., Pembroke, Ont.**

| | | |
|---|---|---|
| Oiseau | J. Tessier | J. Trottier |

**Port Huron and Sarnia Ferry Co., Port Huron, Mich.**

| | | |
|---|---|---|
| City of Cheboygan | G. Waugh | M. Jamieson |
| Hiawatha | E. M. Thomas | H. Myers |
| O. D. Conger | U. S. Major | R. A. Campbell |

**Prescott and Ogdensburg Ferry Co., Prescott, Ont.**

| | | |
|---|---|---|
| Ferdinand | E. P. McGannon | W. J. Jento |
| Miss Vandenberg | H. Black<br>S. J. Delaney | F. Lavery |

**Quadra Steamship Co., Britannia Beach, B.C.**

| | | |
|---|---|---|
| Quadra | M. F. Cutler | R. C. W. Macquarrie |

**Quebec Salvage and Wrecking Co., Quebec, Que.**

| | | |
|---|---|---|
| Lord Strathcona | O. Scherrer | R. Casey |

**Rideau Steamboat Co., Ottawa, Ont.**

| | | |
|---|---|---|
| Wanakewan | G. Depencier | A. W. Campsall |

**River Lievre Navigation Co., Buckingham, Que.**

| | | |
|---|---|---|
| George Bothwell | G. N. Bothwell | G. Bothwell |

**Ross Navigation Co., Pas, Man.**

| | | |
|---|---|---|
| Nipawin | A. A. Deacon | W. Venables |

**Severn River and Lake Couchiching Navigation Co., Orillia, Ont.**

| | | |
|---|---|---|
| Modello | T. W. Wood | H. A. Wood |

**Sparrow Lake Steamer Line, Sparrow Lake. Ont.**

| | | |
|---|---|---|
| Glympse | F. Stanton | G. T. Stanton |

**John Tackaberry, Lionshead, Ont.**

| | | |
|---|---|---|
| Henry Pedwell | W. Holler | A. Glendinning |

**City of Three Rivers, Que.**

| | | |
|---|---|---|
| Le Proges | H. Duval | A. Frenette |

**Toronto, Hamilton and Buffalo Navigation Co., Hamilton, Ont.**

| | | |
|---|---|---|
| Maitland No. 1 | J. W. Keeley | C. E. Sylvester |

**Union Steamship Co. of British Columbia, Vancouver, B.C.**

| | | |
|---|---|---|
| Camosun | A. E. Dickson | A. Beattie |
| Cassiar | J. Boden | P. J. V. Farina |
| Chasina | N. Gray | J. Maitland |
| Cheakamus | R. Wilson | R. M. Logan |
| Chelohsin | H. Stacey | G. H. Foster |
| Chilco | H. F. Lawrey | A. T. Roy |
| Chilliwack | C. B. Smith | J. Hogan |
| Cowichan | J. Findlay | J. Rodgers |
| Coquitlam | G. Gaisford | L. P. Thomas |
| Venture | J. E. Noel | C. Arthur |

**Valley Steamship Co., Annapolis Royal, N.S.**

| | | |
|---|---|---|
| Granville III | B. S. Collins | H. Logan |

**Victoria Navigation Co., Thurso, Que.**

| | | |
|---|---|---|
| Victoria | F. Elliott | A. Shaver |

**Ville Marie Navigation Co., Ville Marie, Que.**

| | | |
|---|---|---|
| Meteor | H. A. Kelly | J. E. Sauvageau |
| Silverland | A. Kelly | R. Kelly |
| Temiscamingue | M. C. Burns | E. Vezina |

**Walkerville and Detroit Ferry Co., Walkerville, Ont.**

| | | |
|---|---|---|
| Aerial | W. Corr | J. Roy |
| Essex | J. E. Rathbun | P. McLaren |

**Webster Steamship Co., Montreal.**

| | | |
|---|---|---|
| Colin W. | J. E. Ouellette | A. Godin |
| Eric W. | T. Marchand | E. Sauvageau |
| Howard W. | J. A. Lepine | A. Cote |
| Richard W. | J. B. Haymond | J. T. Brunelle |
| Stuart W. | E. Tremblay | E. Cantin |

**West Coast Towing and Salvaging Co., Vancouver, B.C.**

| | | |
|---|---|---|
| Masset | A. Brown | J. G. Muir |
| Moresby | H. S. McLellan | A. Gill |

**Western Transport Co., Nanaimo, B.C.**

| | | |
|---|---|---|
| We Two | D. Martin | D. D. Mackie |

**Windsor and Pelee Island Steamship Co., Pelee Island, Ont.**

| | | |
|---|---|---|
| Pelee | J. N. Sheats | J. R. Ferguson |

## The Australian Navigation Act.

It was stated recently that certain sections of the Australian Navigation Act, which was passed in 1914, and held in abeyance during the war, would be proclaimed and go into operation at an early date, and that the proclamation put into effect sections of the act relating to vessels that engage in the Australian coastal trade. These will require that all foreign, British, or Australian ships, which carry passengers or cargo between Australian ports, shall be manned, according to the scale set out in the act, shall pay Australian rates of wages and shall provide for the crew the accommodation that is laid down in the act. Under the act the provisions which govern the coastal trade will be operative also in regard to trade between Australian ports and the territories which come under the Commonwealth's peace conference mandate. Therefore, foreign ships carrying cargo, say, from any Commonwealth port to Rabaul or any other of the ex-German possessions would we affected. The sections in question further set out that ships drawing a subsidy from any government, other than a British or Dominion Government, shall not in any circumstances engage in the coastal trade. It was said that regulations relating to the act were being drafted by the Commonwealth authorities in readiness to be put into operation as soon as the sections of the act come into force.

Since the above was put in type the Commonwealth's Commissioner in New York has announced that he has received the following cablegram from the Australian Government: "Government have decided on account of unsettled conditions of shipping generally to postpone commencement of proclaimed portions Navigation Act from Mar. 2, as originally proposed to some later date, not yet definitely fixed, but not earlier than July 1 next."

## Canadian Notices to Mariners.

**British Columbia—Chatham Sound,** entrance to Prince Rupert Harbor.—Error in position of light on east Kinihan Island; correct position, on north-east extreme of east Kinihan Island, lat. N. 54° 12′ 45″ Long. W. 130° 23′ 45″.

**British Columbia, Victoria Harbor**—On or about April 15, the red sector showing over an arc of 15° from 347° (N. 38° 30′ W. mag.) through N. to 2° (N. 23° 30′ W. mag.) placed at the west side of the entrance to Victoria harbor, will be removed. Beren island light, in line with the light on the outer end of Ogden point breakwater, clears the western extremity of Brotchie ledge.

## United States Shipping and Shipbuilding Notes.

The U.S. Shipping Board announces that its tanker fleet consists of 48 ships of 438,445 d.w. tons.

The U.S. Shipping Board on Mar. 4, withdrew all freight tariffs published thereafter, and left rates in the hands of individual operators of Shipping Board vessels.

The U.S. Shipping Board's Chairman told the Senate Merchant Marine Committee, on Mar. 10, that government operations in shipping business resulted in a net profit of $166,493,990, up to June 30, 1919.

The U.S. Shipping Board's s.s. Guilford, en route from Norfolk, Va., to Boston, Mass., was reported disabled, 15 miles off Nantuckett, Mar. 7, was later abandoned and reported as a menace to navigation. The officers and crew were taken off by the s.s. Pocahontas, transferred to the U.S. destroyer Dale and taken to Newport, R.I.

The U.S. Shipping Board has, it was announced in Washington, Mar. 4, under consideration the appointment of a Board of Survey to pass upon all questions of repairing cargo ships belonging to the government. Under the proposed plan, operators and managers of shipping board vessels would submit repair jobs for study and expert advice by a board of competent men.

More activity in shipbuilding for private enterprise is claimed for U.S. shipyards. Entirely exclusive of tonnage building for the shipping board, there are 263 ships, aggregating 1,256,573 gross tons in hand for private business interests. The government will complete its programme within the next few months, and the shipbuilding plants expect to remain in a position to meet whatever calls may be made upon them. The present building figure attained in the United States is slightly under the British production of 1918 and about 75% of the output of British yards in 1919. The tonnage of freight being built is given at 620,000 gross, comparing with 588,000 tons of tankers. The U.S. Shipping Board is in possession of about 13,000,000 d.w. tons of ships, the bulk of which is composed of cargo-carriers, the sale of which at low terms is being urged in congress. The increase in private orders for freighters may be taken to indicate that the industrial and trading enterprises prefer to have ships built to their own designs rather than wait to select from a comparatively few types of ready made ships.

**Lighthouse Board of Canada.**—Thos. Robb, Manager and Secretary, Shipping Federation of Canada, has been appointed a member of this board to represent the Atlantic division and take the place of the President of the Shipping Federation. The other members of the board are: A. Johnston, Deputy Minister of Marine, Chairman; B. H. Fraser, Chief Engineer, Marine Department; J. G. Macphail, Commissioner of Lights, Marine Department; V. F. W. Forneret, Superintending Engineer, River St. Lawrence Ship Channel, Marine Department; A. E. Mathews, President, Dominion Marine Association, representing the inland division; J. W. Troup, Manager British Columbia Coast Steamships, C.P.R., representing the Pacific division.

# Proposed Navigation and Power Development on St. Lawrence River.

The question of the development of navigation on the St. Lawrence River, by the provision of a deep waterway between Montreal and Lake Ontario, and the incidental development of electric power, which has been discussed in various quarters for several years, and which has been referred to the International Joint Waterways Commission for enquiry and report, came before it at a meeting at Buffalo, N.Y., early in March. The proposals involve the canalization of the river at certain points, and the dredging of a deep channel at others, to enable ocean going vessels to navigate with safety through to Lake Ontario, and, on the completion of the Welland Ship Canal, through to the head of the lakes, without breaking bulk, and also considerable electric power development. The scheme has strong backing, both in Canada and the United States, chiefly from the west, while many interests in the east are either opposed to the plans, or are non-committal.

At different times, for a number of years, various U.S. companies have sought powers to enable them to build dams in the St. Lawrence River to develop electric power, but all such proposals have been strenuously opposed by the marine interests, backed by the Dominion Government, on the ground that they would interfere with the free and safe navigation of the river, and that navigation interests are paramount. In 1918, one of the proposals was renewed, and strongly supported by the U.S. Government, on the ground that the power was required for war time emergencies, and by agreement, it was arranged that such construction should be allowed, purely as a war measure, but nothing of any moment was done, as the war was concluded before any large construction could be carried out. The experience gained during the war, as to the restrictions, and the posibilities of lake to ocean navigation, no doubt caused some action on the part of both governments, and in 1919 they co-operated in the study of the St. Lawrence River, above Montreal, W. J. Stewart, Hydrographer, Naval Service Department, representing Canada, and Col. C. Keller, of the Corps of Engineers, representing the United States. As a result of their work the two governments wrote the International Joint Comission early this year to the following effect:

The Canadian and United States governments, under the provisions of the treaty of Jan. 11, 1909, between the British and U.S. Governments, Article 9, herewith refer certain questions, as set forth below, involving the beneficial use of the waters of the St. Lawrence River, between Montreal and Lake Ontario, in the interests of both countries, and in general, the rights, obligations, or interests of either in relation to the other, or to the inhabitants of the other along their common frontier. It is desired that the said questions be made the basis on an investigation to be carried out by the International Joint Commission, to the end that the commission may submit a report to the two countries, covering the subject matter of this reference, together with such conclusions and recommendations as may be considered pertinent in the premises. The questions follow:

What further improvement in the St. Lawrence River, between Montreal and Lake Ontario, is necessary to make it navigable for deep draft vessels of either the lake or ocean-going type; what draft of water is recommended; and what is the estimated cost?

In answering this question the comission is requested to consider: (a) Navigation interests alone, whether by the construction of locks and dams in the river; by side canals with the necessary locks; or by a combination of the two. (b) The combination of navigation and power interests to obtain the greatest beneficial use of the waters of the river.

Which of the schemes submitted to the government or other engineers is preferred and why?

Under what general method of procedure and in what general order shall the various physical and administrative features of the improvement be carried out?

Upon what basis shall the capital cost of the completed improvement be apportioned to each country?

Upon what basis shall the costs of operation and maintenance be apportioned to each country?

What method of control is recommended for the operation of the improved waterway to secure its most beneficial use?

Will regulating Lake Ontario increase the low water flow in the St. Lawrence Ship Channel below Montreal, and if so, to what extent and at what additional cost?

To what extent will the improvement develop the resources, commerce and industry of each country?

What traffic, both coming and outgoing, in kind and quantity, is likely to be carried upon the proposed route both at its inception and in the future? Consideration to be given not only to present conditions, but to probable changes therein resulting from the development of industrial activities due to availability of large quantities of hydraulic power?

Pending the receipt of plans, estimates and other engineering data necesary for the final consideration of this reference, the commission is requested to hold such public hearings as may be considered necessary or advisable in order to obtain all information bearing, directly or indirectly, on the physical, commercial and economic feasibility of the project as a whole.

To facilitate the preparation of the desired report each government will from its official engineering personnel, appoint an engineer with full authority to confer with a similar officer of the other government for the purpose, first, of acquiring, each in his own country, such data as may be found necessary to supplement the existing engineering data and surveys, and, second, of preparing complete outline plans for and estimates of the cost of the proposed improvement, including the value of all property, easements, damages and rights connected therewith. These plans and estimates are to be submitted to the commission as soon as practicable, but not later than one year from the date of appointment, and the commission is requested to forward to the two governments its final report, with recommendation, not later than three months thereafter.

The proposal, upon which joint action is desired, is divided into two parts, the improvement of navigation, and the development of electric power. From the navigation point of view, there is no doubt whatever that the development of the route from the head of the lakes to Montreal, so that vessels might carry grain direct to ocean going ships without breaking bulk, would be a distinct advantage; also, the power development, which might be carried on, incidentally, would be a considerable asset, and so long as this can be achieved without in any way endangering the safe navigation of the St. Lawrence, there is little fear of any great opposition. The international boundary runs from the commencement of the St. Lawrence at Lake Ontario, between Wolfe Island, Ont., and Cape Vincent, N.Y., to Lake St. Francis, opposite River Beaudette, Que., and is under the International Joint Waterways Commission's jurisdiction. Any opposition which has developed in Canada has been aimed solely at the construction of obstructions in the river, which might have a tendency to obstruct navigation, or to cause any decrease in the water levels, which, at certain periods, for many years past, has caused difficulty. Opposition to the proposals, emanating from the U.S., are of an entirely different complexion, and appears to be mainly due to the geographical fact that the Lower St. Lawrence, the only outlet to the ocean, is within Canadian teritory, and that, if carried out, the project would to quote an U.S. objection "take the control of the waterway out of the hands of the U.S., and would aid Canada far more than it would benefit any section of the U.S., for it might divert from our own metropolis the commerce which has long been the bulwark of our growth and prosperity."

The chief opposition, so far as the U.S. is concerned, comes from New York State, it being claimed that the Erie barge canal can effectively handle the traffic and provides an efficient and economical means of dealing with the freight situation, between the Great Lakes and the Atlantic, at New York. The New York State Legislature, early in March, passed a resolution condemning the proposals, as being inimical to the state's interests, as well as to those of the U.S. generally, and urging that every possible influence be used with Congress to vote against the project. The western states, as a whole, are heartily in accord with the scheme, and are making strong representations as to the desirability of pushing forward with all possible speed, so that the west may be provided with cheaper transportation between the lakes and the seaboard.

The Canadian members of the Commission, C. A. Magrath, Vice Chairman, H. A. Powell, and Sir William Hearst, took considerable part in the general discussion at the Buffalo hearing, and asked numerous questions. Among Canadian interests represented at the hearing, were the Hydro Electric Power Commission of Ontario, Canadian Deep Waterway and Power Association, Toronto Harbor Comission, Dominion Marine Association, Canada Steamship Lines, Toronto and Hamilton Boards of Trade, and delegates from a number of Ontario municipalities.

The scheme provides for four dams as power concentration centers, located near Morrisburg, Cornwall, at the foot of Lake St. Francis, and below the Lachine Rapids. The two first named would be international, as between Ontario and

New York, and the latter two would pertain to Quebec. Associated with this power development scheme, is the canalization, the dams making the necessary deep water channel, and requiring locks of equal size to those being built in the new Welland Ship Canal, and in addition, a new canal system near Montreal. The cost of the canals is proposed to be apportioned between Canada and the U.S., the question as to whether the latter would be financially responsible for only those parts of the scheme within international waters, or for its portion of the whole, being left over. The expense of the scheme is variously estimated at from $100,000,000 to $300,000,000.

The commission intends holding sittings at other points, commencing May 1, to discuss the proposals from various standpoints, and to hear evidence from different localities affected.

In connection with this scheme, the following extracts from the address of the then President of the Canadian Society of Civil Engineers, M. J. Butler, C.M.G., at that society's annual meeting early in 1915, is of interest. "We have as a nation undertaken the task of forcing our outlets against the line of least resistance. The Atlantic seaboard is the outlet for the products of the prairies situated some 1,500 miles inland. Our efforts in building railways with easy curves and grades, the enlargement of our canal system and the improvement of rivers, and particularly of the St. Lawrence route, have but one object of putting a few more cents a bushel into the pockets of the farmers. The enlargement of the Welland Canal will allow the larger type of vessel of 300,000 bush. capacity to pass down Lake Ontario and the St. Lawrence River to within 120 miles of Montreal. Storage elevators will be erected at or near Prescott, and 1,000 ton barges will be towed through the present canal system to Montreal. Ultimately the larger lake vessel will come through to Montreal, as it is quite practicable and within the resources of the country to convert the St. Lawrence into slack water navigation by the building of eight dams with duplicate locks, and, as an incident, develop the greatest water power in the world, agregating over 4,000,000 h.p., eliminate the ice jams, and make practicable the navigation of the river in winter by the aid of powerful icebreakers. It is a duty which our government may well undertake at the earliest possible moment, to secure a hydrographic and topographic survey of the St. Lawrence, so that accurate estimates of cost may be made and proper regulations may be drawn up, so to regulate proposed power developments owned by private corporations that each may be brought into a component part of the completed whole."

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**Rescue of Lighthouse Crews.**—Senator Boyer enquired in the Senate, Mar. 12, what was the cost of sending a sealing ship from Newfoundland to Labrador, to rescue the crews of the different lighthouses in Belle Isle Strait. Sir Jas. Lougheed replied: "Arrangements were made for this work by the acting Minister of Shipping, St. John's, Nfld., at the request of the Dominion Deputy Minister of Marine. Accounts in connection therewith have not yet come to hand. I have no doubt that at a later date we shall have them." The question was therefore allowed to stand.

## Ice Conditions on the Great Lakes.

The second ice report of the season, compiled by the regular and display stations of the U.S. Department of Agriculture's Weather Bureau, and the Canadian Meteorological Service, issued at Detroit, Mar. 16, states that an ice field extends from Duluth to Two Harbors in Lake Superior, and beyond this open water is reported along the north shore to beyond Grand Marais. Ice fields are reported from Apostle Island eastward to Whitefish Bay. There had been some movement in the fields during the week.

The ice conditions in St. Marys River are about the same as the previous week. The ice is very heavy, and covered with snow. In Green Bay the ice fields are unchanged. In Lake Michigan the winds have moved the fields from the west shore and open water is reported from Kewaunee south to Chicago, while on the east shore the fields extend beyond vision from Michigan City to the Straits of Mackinaw.

In Lake Huron, open water is reported off Detour, with ice fields stretching beyond vision from Cheboygan, south to below Thunder Bay Island, and open water from there to below Harbor Beach, and extensive fields over the southern portion.

St. Clair River is open to between Marysville and St. Clair. There is about five miles of open water at the lower end of Lake St. Clair, and Detroit River is open to Lake Erie.

Considerable open water is reported over the western portion of Lake Erie to just west of Cleveland, and from there east to Buffalo fields are extensive, but moving with the winds. In Lake Ontario the fields are apparently confined to the eastern portion.

In comparison with last season there is more ice in all of the lakes. In comparison the with 12-year normal, it is 3 in. below average at Duluth, 4 in. above at Sault Ste. Marie, 8 in. at the Straits, and 11 in. at Escanaba.

Port Arthur, Ont., press dispatch, Mar. 21.—Ice conditions here indicate a late opening of navigation. Tugs, which were stationed 18 miles out, have commenced breaking a channel to Port Arthur, and should reach here by April 1.

## House of Commons Committee on Marine and Fisheries.

The House of Commons committee on marine and fisheries for the current session, is comprised as follows: E. K. Spinney, M.P. for Yarmouth, N.S., chairman, the other members being Messrs Ballantyne, Butts, Caldwell, Cardin, Chisholm, Clark (Bruce), Clements, Duff, Fielding, Gauvreau, Gladu, Hartt, Hay, Lang, Léger, Loggie, Manion, Martin, Munson, McIntosh, McKenzie, McQuarrie, Nicholson (Queens), Papineau, Pelletier, Rowell, Sinclair (Antigonish), Sinclair (Queens, P.E.I.), Stevens, Trahan, Truax, Tudhope, Turgeon and Wigmore. There are 55 members of the committee and the quorum is 10.

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**Contracts for Marine Public Works.** The Dominion Public Works Department has let the following contracts,—renewal of superstructure of part of the eastern breakwater at Collingwood, Ont., York Construction Co. Feb. 27; construction of grain conveyor, St. John, N.B., Grant and Horne, St. John, N.B.; overhauling and repairing of dredge Ajax, British Columbia Marine, Ltd.

## The Vancouver Drydock.

As announced in Canadian Railway and Marine World for March, the Dominion Government is entering into a contract with J. Coughlan & Sons, Ltd., under the Drydock Subsidies Act, granting aid in the construction of a drydock and appurtenant works at Vancouver. The company announces that, in addition to the construction of a graving dock on Burrard Inlet, it intends to build large marine repair shops, and a marine railway with all necessary repair units. The entire plant will not be completed for nearly three years, but it is expected that the marine railway and repair shops will be ready for operation about 15 months from the commencement of construction, which was expected to start during March.

The drydock plans, which have been passed by the government, show a dock 750 ft. long overall, and large enough to accommodate any ship that passes through the Panama Canal. It is so designed regarding width, that it can be extended longitudinally when occasion requires, sufficient to provide a length of 1,200 ft. According to specifications, the length of the dock from caisson stop to dead wall will be 725 ft., with an inside length from back sill to dead wall of 700 ft. The clear width at the entrance will be 106 ft. 2½ in. and 100 ft. at the bottom. The width at proper cope level will be 119 ft. with 100 ft. clear from altar at sill level. In preparing foundations for the dock, there will be an excavation of approximately 114,000 cu. yd. of material, of which over 80,000 cu. yd. will be solid rock.

The marine railway will parallel the graving dock and will have a lifting capacity of 3,500 tons, sufficient to handle a ship of 8,800 d.w. tons. The basin of the slipway cradle will be excavated from sandstone, with a length of 750 ft. and a width of 72 ft. The clear depth for the cradle at the lower end will be 18 ft., and the cradle will operate on 4 roller paths. The plant equipment will include a 10 ton locomotive jib crane, a number of smaller hoists, and a 12 ton cylinder yard locomotive of 50 tons capacity.

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**C. G. S. Simcoe.**—The Minister of Marine gave the following information in the House of Commons, Mar. 15, in answer to questions by A. T. Leger, M.P., for Kent., N. B. The C. G. S. Simcoe was built at Newcastle-on-Tyne, Eng., in 1909, her tonnage being gross 913.38, net 437.63. She last underwent overhauling and repairs in Oct., 1917, was a fit ship for ocean navigation, was a seaworthy ship for the purpose which she was put to, and was lost Dec. 7, 1917, southwest of Magdalen Islands, Gulf of St. Lawrence.

**Freight Rates to England.**—It was announced in New York, Mar. 12, that freight rates on foodstuffs shipped to England on British vessels had been increased 30c per 100 lb., from 45 to 75c. As the British Minister of Food has 300,000,000 lb. of pig in warehouses in America the increase means that the English public will be obliged to pay $90,000,000 more for them under the new shipping rates.

**St. Lawrence River Pilotage.**—Both the Dominion Marine Association and the Shipping Federation of Canada are urging the Marine Department to abolish compulsory payment of pilotage dues on the St. Lawrence, but no decision has been announced.

# General Shipbuilding Matters Throughout Canada.

The Alma Shipbuilding Co., Ltd., has been incorporated under the New Brunswick Companies Act, with $24,000 authorized capital and office at Sussex, N. B., to take over the shipbuilding business, heretofore carried on by C. T. White & Son, Ltd., at Alma, N. B., together with all stock in trade, machinery, equipment, etc. The company has power to build, own, navigate and deal in steam and other ships and to carry on business as a common carrier. The incorporators are: M. G. White, H. H. Reid, Sussex, N. B.; J. A. Cleveland, Alma, N. B.

The Collingwood Shipbuilding Co. held its annual meeting at Collingwood, Ont., Mar. 5. The directors for this year are as follows: H. B. Smith, Owen Sound, Ont., President; J. W. Norcross and R. M. Wolvin, Montreal, Vice Presidents; J. S. Leitch, Collingwood, Managing Director; S. Dyment, Barrie, Ont.; H. W. Cowan and F. S. Izard, Montreal. Alex McDougal, Duluth, Minn., was not a candidate for re-election, his place on the board being taken by J. S. Leitch, formerly General Manager.

J. Coughlan and Sons, Vancouver, B. C., which organized its shipbuilding department in 1917, have built 120,400 d.w. tons of steel ships, each of 8,800 d.w. tons. Ten of these were for the British Government, ordered through the Imperial Munitions Board. The firm has also built four steel steamships of 8,100 d.w. tons each for Canadian Government Merchant Marine, Ltd., and is still active on additional orders, which will keep the yards busy for some time. The first ship built was the s.s. Alaska, which was under construction for Norwegian interests at the outbreak of war, and which was eventually taken over on behalf of the British Government and delivered to owner in June, 1918. The business has recently been re-organized as a joint stock company under the title J. Coughlan and Sons, Ltd.

Foundation Co. of British Columbia, Victoria.—Reports as to the future of this company's shipbuilding yards at Victoria are conflicting. It was stated originally that the negotiations which has been proceeding for some time between a representative of French interests and the company for the leasing of the yards to undertake the building of a large number of wooden steamships for French registry, have been broken off, and that the company had given instructions for the dismantling of the plant, which was stated to be proceeding. A Victoria press dispatch of March 11, states that Capt. E. V. Argon, who is conducting negotiations for the French interests, had stated that he was going ahead with the programme and expected to make a definite announcement shortly as to the close of the negotiations, and that he was awaiting the arrival of a French official, when he expected the negotiations would be successfully concluded. It is stated that the French programme covers the building of 40 wooden steamships of a similar type to those built for the British Government under orders from the Imperial Munitions Board, and that this would necessitate the employment of about 2,500 men. It is said that the lease would be arranged for two years, with the option of renewal, and that should the negotiations be successful, the Dominion Government is willing to lease accommodation at Ogden Point for outfitting the ships.

The B. C. Minister of Finance is reported to have stated at Victoria, Mar. 12, that a written application was made for a lease of the portion of the Songhees Indian reserve occupied by the Foundation Co.'s yard, by Capt. E. V. Argon, acting for French interests, and he was informed that the Foundation Co.'s lease had not expired, and had not been terminated, but that upon receipt by the government of satisfactory assurance when he was in a position to carry out his shipbuilding programme, the government would take up the question of terminating the Foundation Co.'s lease and entering into a new lease with him. The Minister also stated that there were two other applications under the government's consideration for portions of the same area.

National Shipbuilding Corporation. Three Rivers Shipyards, Ltd., Division, Three Rivers, Que., as reported in our Feb. issue is building 10 freight steamships for French interests. Two of these, of approximately 300 ft. long, are said to have been ordered by La Societe Maritime Francaise, and four, of 310 ft. long, by La Societe de Gerance et d'Armanent.

Nova Scotia Shipbuilding and Transportation Co., Liverpool, N.S., launched the schooner Manuata March 6, for fishing service. Her dimensions are, length 138 ft., breadth 26 ft., depth of hold 11½ ft. The company is building two other similar vessels for summer delivery.

The Nova Scotia Steel & Coal Co. has received an order for a steel exploring yacht, builder's yard No. 9, for The Baron Bliss, Bahamas, B. W. I. It will be 137 ft. between perpendiculars, 28½ ft. moulded depth, and will be driven by two 250 h.p. Vickers-Petters semi-Diesel oil engines. All the auxiliaries will be electrically driven, including anchor windlass, and capstan.

The company is building a ship, builder's yard No. 10, for its own account, to be delivered in the early spring of 1921. It will be exactly the same as the s.s. Canadian Sealer, already built for Canadian Government Merchant Marine, Ltd., approximately 2,800 d.w. tons, and the two others under contract from the Marine Department, viz: Canadian Miner, now being built, and another one not yet named.

Tidewater Shipbuilders, Ltd., Three Rivers, Que. D. C. McKean, heretofore General Superintendent, National Shipbuilding Corporation, Three Rivers, has been appointed Manager, Tidewater Shipbuilders, Ltd., vice Robt. Duguid.

Victoria (B.C.) Shipowners, Ltd., which was incorporated recently under the British Columbia Companies Act, with $500,000 authorized capital and office at Victoria, has for its main object the building and operating of four wooden auxiliary powered schooners which are being built at the Cholberg Ship Co.'s yard, at Victoria, under special aid granted by the Dominion Government details of which have been outlined in previous issues. The directors are: J. W. Spencer, C. Hoard, J. O. Cameron, W. Meed, F. B. Pemberton, Capt. H. C. Hansen and Capt. M. D. Harbord.

Wallace Shipyards, Ltd., North Vancouver, B. C., has received from the Dominion Public Works Department a contract for overhauling and repairing the dredge Fruhling (P.W.D. No. 303) at schedule of prices.

## British Ministry of Shipping (Canada) Winds up Business.

The British Ministry of Shipping (Canada) ceased its control of Canadian export shipping Mar. 31, and all correspondence relating to its affairs is now addressed to E. M. Raeburn, Director General, British Ministry of Shipping, 165 Broadway, New York. During its existence the ministry practically controlled the export trade of Canada, both inland and overseas, and this was carried on with practically no friction between shippers and carriers, and with a minimum of disturbance of the general business of the country. The following figures show the number of ships cleared from Canadian ports and Portland, Me., between Aug. 25, 1914, and Dec. 31, 1919, during the ministry's control:

| | | |
|---|---|---|
| 1914 | 40 | transports |
| 1915 | 132 | " |
| 1916 | 362 | " |
| 1917 | 737 | transports and freighters |
| 1918 | 875 | " " " |
| 1919 | 975 | " " " |

During that period the tonnage exported from Canada exceeded 16,000,000 tons of munitions, war material and supplies covering shipments inland as well as overseas.

A report of the British Government's select committee on national expenditure in a white paper issued Jan. 5, pays tribute to the effective and economical administration of the affairs of the Ministry of Shipping, not only in the United Kingdom but in the various outports to which the shipping control was extended. At the outbreak of war, it was considered desirable that the overseas transport should be placed in the hands of a competent organization under control of the Dominion Government, working in conjunction with the Imperial Government, and for this purpose the C.P.R. loaned A. H. Harris, its Special Traffic Representative to the government, and he was appointed Director of Overseas Transport. This continued until Sept. 5, 1918, when a change was made, and the staff hitherto under the Dominion Government, was transferred to the Imperial Government, the organization being known as the British Ministry of Shipping (Canada) with headquarters at Montreal, and consisting of the following: Director General, Sir Arthur Harris; Deputy Director General, W. T. Marlow; Accountant, G. Wood, Ships' Movements and Bunkers, Capt. D. Greenshields; Technical Department, F. Sidgwick; Ocean Transports and Timber, W. A. Wainwright; Ocean Liner Department, G. D. Robinson; Superintendent Inland Transportation, D. O. Wood; Assistant Superintendent Inland Transportation, J. A. Glassford; all of whom were then in C.P.R. service and loaned to the government.

Although the world's tonnage of ocean passenger steamships is now greater than at the outbreak of war in 1914, and is increasing more rapidly than at any former period in maritime history, the losses of trans-oceanic passenger ships have not yet been made good by new construction.

Comeau Navigation Co. Ltd., has been incorporated under the Dominion Companies Act, with $20,000 authorized capital and office at Montreal, to own and operate steam and other ships, aeroplanes, etc., for the carriage of passengers, mail and general merchandise. The incorporators are: S. H. R. Bush, B. Robinson, C. F. McCaffrey, G. R. Leblanc and T. C. Travers, Montreal.

# Mainly About Marine People.

**Capt. R. C. Brown**, master of the Anchor-Donaldson Line s.s. Cassandra, has been appointed by the Montreal Board of Trade as port warden for Montreal, vice, D. Stewart,, deceased. He has been in the Anchor-Donaldson Line's Canadian service for the past 22 years, 15 of which have been spent as master of the s.s. Cassandra.

**Duncan D'Eyncourt Cooper**, whose appointment as General Agent, Import and Export, Canada Steamship Lines, Ltd., Toronto, was announced in our last issue, was born at Buffalo, N. Y., July 8, 1862, and entered transportation service in Sept., 1881, since when he has been, to 1882, freight clerk, G.T.R., Montreal; 1882 to 1884, freight clerk, G.T.R., Toronto; 1884 to 1885, chief clerk to District Freight Agent, G.T.R., Toronto; 1885 to 1889, City Freight Agent, G.T.R., Montreal, 1889, to the closing of U.S. railway offices in Canada by the U.S. Railroad Administration in 1917, Canadian Freight Agent, Lehigh Valley Rd., Toronto; July 1919 to March 1, 1920, Agent, Export and Import Traffic, Canada Steamship Lines, Ltd., Toronto.

**Capt. S. J. Corson**, a well known Great Lakes mariner, and during 1919 master of the Great Lakes Transportation Co.'s s.s. Major, died at Toronto, Mar. 8, as a result of injuries through falling on a slippery sidewalk there. He was buried at Collingwood, Ont.

**E. L. Cousins**, General Manager and Chief Engineer, Toronto Harbor Commission, is expected to return, about the end of April, from Europe, where he is investigating harbor facilities at many of the principal ports.

**D. W. Crow**, who died at Chatham, Ont., March 8, aged 90, claimed to have built the first steamboat, the Owen, on the River Thames there, in 1883. This boat was used to lay the first telephone cable between the mainland and Pelee Island.

**Mrs. Davie**, wife of G. T. Davie, of the Davie Shipbuilding and Repairing Co., Levis, Que., died at Quebec, Que., recently.

**Alfred R. Dean**, whose appointment as Travelling Passenger Agent, Canadian Pacific Ocean Services, Ltd., Chicago, Ill., was announced in our last issue, was born at Springfield, Utah, Mar. 2, 1895, and entered transportation service June 16, 1914, since when he has been, to Feb. 13, 1916, stenographer and ticket stock clerk, Pennsylvania Rd.; Feb. 14, 1916, to April 9, 1917, ticket agent Central Pacific Ry.; April 10, 1917, to Jan. 1, 1918, stenographer and rate clerk, Minneapolis, St. Paul and Sault Ste. Marie Ry.; Jan. 2 to June 10, 1918, rate clerk, Chicago and Northwestern Ry., all at Chicago, Ill.; June 13 to Dec. 15, 1918, in U. S. Navy; Dec. 10, 1918, to March 31, 1919, rate clerk, Chicago, and Northwestern Ry., Chicago Ill.; April 1, 1919, to Feb. 27 1920, clerk and chief clerk, Canadian Pacific Ocean Services, Ltd., Chicago.

**W. A. Duff**, who died at Montreal recently. aged 46, was a brother of M. McD. Duff, Manager, Great Lakes Steamships Service, C. P. R., Montreal.

**Sir E. Mackay Edgar**, who is taking an active part in the revival of commercial shipbuilding in Great Britain, through the recent amalgamation of several of the larger shipbuilding companies there, under the title of the Northumberland Shipbuilding Co., with a capital of £7,000,000, was born at Montreal in 1876 and educated there, and was, for some time, engaged in the office of Senator Robt. Mackay. He removed to London, Eng., in 1908, and entered the firm of Sperling & Co., bankers, etc.

**B. C. Keeley** has been appointed General Agent, Canadian Government Merchant Marine, Ltd., at Vancouver, B. C.

**Herbert P. Heywood**, who has been appointed Engineer of Sewers and Drainage, Toronto Harbor Commission, was born in Lincoln, Eng., in 1889, and educated there. He came to Canada in 1911, and was engaged as engineer in charge of construction of divisional buildings at Regina, Sask., for Canadian Northern Ry., and on the completion of that work, was Assistant Engineer Maintenance of Way; and draftsman on masonry structures, Bridge Engineer's office, C. N. R., Winnipeg, to 1913, and from 1913 to 1916, he was engaged on road and bridge work for the Manitoba

Major W. G. Swan, D.S.O., B.A.Sc., C.E.
Chief Engineer, Vancouver Harbor Commission.

Government, and as concrete inspector for the Greater Winnipeg Water District. He enlisted in 1916, and went overseas July 4, as sergeant in the 3d Canadian Railway Troops, and until Mar. 28, 1919, was in France, engaged in building light and standard gauge railways.

**C. H. Nicholson**, Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B. C., has been elected President Vancouver Golf and Country Club.

**J. W. Norcross**, President and Managing Director, Canada Steamship Lines; President, Halifax Shipyards; and a Director of Canadian Vickers; and **R. M. Wolvin**, President, Montreal Transportation Co., and Vice President, Halifax Shipyards; are directors of Chase Tractor Corporation, Ltd., organized recently to take over the tractor business end of the Chase Motor Truck Co., Syracuse, N. Y., with the world's patent rights and good will, and which has established a plant in Toronto.

**Wm. Phillips**, heretofore Representative, Cunard Line Steamships, and a director of the Robt. Reford Co., Montreal, has been appointed European Manager, Canadian National Rys. and Canadian Government Merchant Marine Ltd., with office at Orient House, London, Eng. He left Canada Mar. 19 and sailed from New York on the s.s. Mauretania Mar. 20, to take over his new duties. Biographical information about him is given under "Mainly About Railway People" on another page of this issue.

**John Franklin Pierce**, whose appointment as Passenger Traffic Manager, Canada Steamship Lines, Ltd., Montreal, was announced in our last issue, was born at Chatham, Ont., Sept. 6, 1877, and entered transportation service, Oct. 14, 1896, since when he has been, to Oct. 1904, clerk, Richelieu and Ontario Navigation Co., Montreal; Oct. 1904 to Oct. 1910, chief clerk, same company, Montreal; 1910 to 1912, Travelling Passenger Agent, same company, Boston, Mass.; 1912 to 1913, District Passenger Agent, same company, Boston, Mass.; 1913 to Dec. 1, 1914, Assistant General Passenger Agent, and General Baggage Agent, Canada Steamship Lines, Ltd., Montreal; Dec. 1, 1914 to April 1916, General Passenger Agent and General Baggage Agent, same company, Montreal; April 1916 to April 23, 1917, Assistant Passenger Traffic Manager, same company, Montreal; April 23, 1917, to Mar. 1, 1920, Assistant Traffic Manager, Prescott and east, same company, Montreal.

**Thomas Robb**, Manager, Shipping Federation of Canada, has been appointed a member of the Lighthouse Board of Canada, representing the shipping interests in the Atlantic division.

**Major William George Swan**, D.S.O., B.A.Sc., C.E. who was appointed Chief Engineer, Vancouver Harbor Commission, Vancouver, B. C., recently, was born at Kincardine, Ont., Sept. 27, 1884, and was educated at the public and high schools there and Toronto University. He entered transportation service in 1904 with the Canadian Northern Ry. and acted consecutively as transit man, Resident Engineer, Bridge Engineer, Division Engineer, Terminal Engineer, and District Engineer. He was for three terms an instructor in Toronto University Engineering Faculty. He served in France during the war for 27 months as Major, 2nd Battalion, Canadian Railway Troops, and later as Light Railways and Tramways Engineer for the 2nd British Army. He was mentioned in dispatches twice and has received the Distinguished Service Order and the French Croix de Guerre.

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**Cost of Ship Coal in the United Kingdom**—London, Eng., press dispatch, Mar. 8.—Freight rates on ocean shipping from England would be increased at least 50% by a movement now in progress in order to meet the high cost of bunker coal here. Coal in the port of London this week will cost 155 shillings a ton, compared with 15 to 18 shillings before the war. This coal can be secured by industrial plants in the United Kingdom for 40 shillings a ton. So heavy is the cost of coal that some owners assert they may have to seriously consider the question of laying up their ships.

## Halifax Graving Dock Expropriation.

The Senate on Mar. 5, on motion of Senator Dennis, passed an order for all correspondence, reports, documents, etc., between any department of the government and other persons regarding the expropriation of the property at Halifax of the Halifax Graving Dock Co., and the transfer of same to Halifax Shipyards, Ltd.; for all correspondence, reports, etc., in connection with order in council, 56, of Jan. 15, 1918, and of 1291, of May 27, 1918.

Senator Dennis has given notice that on April 6, he will enquire of the government as follows:

Has the government taken possession of the property of the Halifax Graving Dock Co., Ltd.?

If so, on what date, and was it by lease, tender, purchase, expropriation, or by order in council under the War Measures Act?

Has any sum been paid for or on account of the property, and if so how much and on what date or dates?

Is the Halifax graving dock and adjunct ship repairing plant being operated by any department of the government? If so, for how long has it been so operated?

If not now operated as a public work by the government, has it been rented, sold, loaned, or given to a private company?

If so (a) on what date, (b) on what terms and conditions, and (c) for what period?

The name of the private company to which the Halifax graving dock property has been so transferred, its capitalization, and the names of its directors.

How much, if anything, has been paid to Mar. 1, 1920, by said private company on account of the rental, or purchase, or for the use of said graving dock property?

The amount paid by the government to the Halifax Graving Dock Co. for its property at Halifax, taken possession of by the government, and if nothing, the reason for withholding payment; and has any effort been made, and if so, what, to effect an amicable settlement with the Halifax Graving Dock Co.?

The number of square feet of land and land covered with water taken by the government from the Halifax Graving Dock Co. on (or in connection with) which the dock and plant was located.

Was any land, and land covered with water, aditional to that taken from the Halifax Graving Dock Co., sold, leased, or given to Halifax Shipyards, Ltd.? If so (a) how many square feet, (b) was it acquired by purchase or expropriation, (c) what was the cost thereof to the government, and (d) if sold or leased to Halifax Shipyards, at what price?

Has the government expended any money upon the property taken from the Halifax Graving Dock Co., or upon any land or other property acquired in connection therewith, since its acquisition? If so, state the amount so expended and the nature of the work done.

Has the government been asked to make any further expenditures in this connection? If so, how much, and does it propose to do so?

Is the government to be fully reimbursed for all its expenditures for the Halifax graving dock property and in connection therewith by Halifax Shipyards, Ltd., and if not all, what proportion and upon what conditions; and whether or not any deferred payments carry interest charges?

## Sure Proof of the Aberdeen Boat.

Donald and Sandy were standing on the seashore watching the steamboats passing to and fro, when Sandy remarked: "There goes the Aberdeen boat, Donald."

"It's no the Aberdeen boat," replied Donald.

"It is," asserted Sandy.

"I suppose you think because it's painted grey and going north it must be the Aberdeen boat? vouchsafed Donald

"I know it's the Aberdeen boat," said Sandy.

Then Donald sarcastically queried: "And how do you know?"

"Because there's no gulls followin' it," quoth Sandy.

## Vessels Registered in Canada During December, 1919.

**In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing vessels of less than 100 tons register.**

### STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 141486 | Canadian Adventurer* | Montreal | Port Arthur, Ont.....1919 | 251.3 | 43.9 | 20.3 | 2069 | 1201 | 113 | Sc. | Minister of Marine and Fisheries, Ottawa. |
| 141547 | Canadian Aviator*.. | " | North Vancouver, B.C...1919 | 331.0 | 46.7 | 23.2 | 3388 | 2057 | 235 | Sc. | " " " |
| 141489 | Canadian Rancher*. | " | Three Rivers, Que. .....1919 | 331.6 | 46.8 | 23.3 | 3551 | 2159 | 231 | Sc. | " " " |
| 141581 | Canadian Sealer*.... | " | Trenton, N.S. .....1919 | 270.0 | 38.2 | 17.9 | 1766 | 1044 | 116 | Sc. | " " " |
| 141488 | Canadian Settler*.... | " | Three Rivers, Que. .....1919 | 331.3 | 46.8 | 22.9 | 3548 | 2155 | 231 | Sc. | " " " |
| 141481 | Canadian Spinner*. | " | Montreal .....1919 | 400.0 | 52.4 | 28.5 | 5404 | 3331 | 266 | Sc. | " " " |
| 141452 | Edmund Donald..... | Halifax, N.S. | Shad Bay, N.S. .....1919 | 183.7 | 31.3 | 18.9 | 848 | 531 | 80 | Sc. | Bayside Steamship Co., Halifax, N.S. |
| 141255 | Granville III..... | Yarmouth, N.S. | Meteghan River, N.S.....1919 | 95.0 | 23.0 | 8.7 | 125 | 64 | 18 | Sc. | Valley Steam Ship Co., Granville Ferry, N.S. |
| 138466 | John Hunsader..... | Sault Ste. Marie, Ont. | Sturgeon Bay, Wis. .....1910 | 96.0 | 26.0 | 12.4 | 231 | 93 | 65 | Sc. | Spanish River Pulp and Paper Mils, Ltd., Sault Ste. Marie, Ont. |
| 113379 | Monmouth*..... | Montreal | Middleshrough, Eng. ....1900 | 375.1 | 48.1 | 25.7 | 4078 | 2569 | 236 | Sc. | C.P.R. Co., Montreal. |
| 121219 | Virginian*..... | " | Glasgow, Scotland .....1905 | 520.4 | 60.3 | 30.0 | 10757 | 6827 | 12,000 | Sc.† | Allan Line Steamship Co., Glasgow, Scotland. |

*Equipped with wireless. †Turbines

### SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141415 | Alcala..... | Lunenburg, N.S. | Schr | Lunenburg, N.S. .....1919 | 125.6 | 27.0 | 10.6 | 174 | 112 | R. Knickle, M.O., Lunenburg, N.S. |
| 138654 | Annahel Cameron.... | Pictou, N.S. | " | New Glasgow, N.S. .....1919 | 156.7 | 34.5 | 13.0 | 506 | 458 | W. and C. McNeil, J.O., New Glasgow, N.S. |
| 141495 | Cutty Sark..... | St. John, N.B. | " | St. John, N.B.....1919 | 181.6 | 36.0 | 13.5 | 686 | 609 | New Brunswick Shiphuilding Co., St. John, N.B. |
| 141520 | Edward A. Cohan.... | Parrsboro, N.S. | " | Rexton, N.B. .....1919 | 171.2 | 37.4 | 13.0 | 664 | 597 | J. H. Solery, Toronto. |
| 141234 | Barhara Macdonald. | Charlottetown, P.E.I.... | " | Cardigan, P.E.I. .....1919 | 96.1 | 25.5 | 9.8 | 164 | 162 | J. A. Macdonald, Cardigan, P.E.I. |
| 141548 | C.S.T..... | Vancouver, B.C. | Scow | Vancouver, B.C. .....1912 | 80.1 | 30.0 | 6.5 | 133 | 133 | W. J. Thicke, Vancouver, B.C. |
| 141387 | Douglas E. Parks..... | La Have, N.S. | Schr | East La Have, N.S.....1919 | 122.5 | 27.3 | 10.6 | 178 | 136 | M. J. Parks, M.O., La Have, N.S. |
| 141571 | E. P. Theriault..... | Weymouth, N.S. | " | Belliveau's Cove, N.S.....1919 | 140.0 | 32.2 | 11.5 | 403 | 369 | Theriault Shiphuilding Co., Belliveau's Cove, N.S. |
| 141413 | Elsie II..... | Lunenburg, N.S. | " | Essex, Mass. .....1910 | 106.5 | 25.0 | 11.5 | 137 | 98 | W. C. Smith & Co., Lunenburg, N.S. |
| 141490 | Fred F. Farmer..... | Montreal | Barge | Champlain, N.Y. .....1892 | 95.6 | 17.8 | 8.0 | 131 | 114 | Richelieu Transportation Co., Montreal. |
| 141503 | Germain L..... | Quebec | Schr | Ste. Anne des Monts, Que....1919 | 96.3 | 26.7 | 9.3 | 145 | 145 | G. Leclerc, M.O., Ste. Anne des Monts, Que. |
| 87185 | Granco..... | Vancouver, B.C. | Barge | Glasgow, Scotland .....1883 | 275.0 | 35.1 | 19.9 | 2114 | 2114 | Coastwise Steamship and Barge Co., Vancouver, B.C. |
| 141552 | Griffnip..... | " " | Scow | Winslow, Wash. .....1917 | 100.0 | 32.2 | 9.8 | 271 | 271 | " " " |
| 141388 | Little Princess..... | La Have, N.S. | Schr | Dayspring, N.S. .....1919 | 122.4 | 27.0 | 10.9 | 229 | 199 | F. Gray, La Have, N.S. |
| 141573 | Maid of England..... | Weymouth, N.S. | Bktn | Grosses Coques, N.S.....1919 | 174.7 | 37.6 | 13.0 | 751 | 696 | F. K. Warren, Halifax, N.S. |
| 141414 | Ruby and Dorothy.... | Lunenburg, N.S. | Schr | Conquerall Bank, N.S.....1919 | 120.6 | 26.0 | 11.2 | 194 | 160 | L. Inkpen, Burin, Nfld. |
| 141257 | W. L. Mackenzie King..... | Yarmouth, N.S. | " | Wedgeport, N.S. .....1919 | 107.0 | 25.6 | 10.9 | 147 | 147 | R. E. LeBlanc, Wedgeport, N.S. |
| 138655 | William McL. Borden..... | Pictou, N.S. | " | Pugwash, N.S. .....1919 | 125.5 | 30.3 | 11.4 | 365 | 336 | Cumberland Shiphuilding Co., Pugwash, N.S. |
| 141621 | Hiram D. MacLean.. | Parrsboro, N.S. | " | Economy, N.S. .....1919 | 152.0 | 35.5 | 12.8 | 490 | 447 | H. C. MacKay, et al, Economy, N.S. |
| 141549 | M.W.W. No. V..... | Vancouver, B.C. | Scow | New Westminster, B.C. .....1919 | 96.2 | 34.0 | 8.1 | 252 | 252 | McNeil, Welch & Wilson, Vancouver, B.C. |

## Atlantic and Pacific Ocean.

The New Zealand Shipping Co.'s s.s. Durham, which was to have sailed from West St. John, N. B., for Australasian ports, was withdrawn and replaced by the s.s. Somerset, which sailed Mar. 20.

The British s.s. Tewkesbury, bound from Hampton Roads to England, ran ashore about 4 miles northwest of Cape Pine, Nfld., and was reported to have broken up shortly after striking. The crew took to the boats and were saved.

The French s.s. Mont Cervin, which arrived at Vancouver, B. C., with 5,000 tons of sugar from Cuba, returned with a cargo of 2,000,000 ft. of spruce, said to be the first cargo of lumber sent from British Columbia to Cuba for a number of years.

The U. S. Shipping Board's s.s. Ellithorpe reported disabled and drifting towards the rocks at Sable Island, Mar. 7, eventually weathered the storm and cleared the reef. She was later picked up by the s.s. Maplemore, when she reported she had lost her propeller.

A Liverpool, Eng., dispatch states that a further surcharge of 13 1/3% in passenger fares has been decided on by North Atlantic steamship companies, making the increase in the cost of a voyage between Great Britain and North America, 33 1/3% since July 1919.

The Portuguese s.s. Albatross, which sailed from Halifax, N. S., Mar. 8, for Portugal, was reported ashore, Mar. 9, near Egg Island, 28 miles east of Halifax, where she is reported as a total loss. In abandoning the ship, two of the crew lost their lives, the remaining eight suffering severely from exposure.

The Gulf of St. Lawrence Shipping and Trading Co. is making arrangements for operating 2 steamships on the route between Montreal and St. John's, Nfld., and another steamship between Montreal and Prince Edward Island, during the forthcoming St. Lawrence navigation season.

The Nippon Yusen Kaisha is reported to be arranging to build 60 freight steamships within the next few years for its trans-Pacific and European services, and it is stated that 7 passenger steamships, of approximately 20,000 tons each and a speed of 20 knots an hour, will be built for the service between Japan, China, Victoria, B. C., and Seattle, Wash.

Canadian Pacific Ocean Services, Ltd., has transferred the s.s. Virginian from the British register to the Canadian register. She was built at Glasgow, Scotland, in 1905, and is screw driven by turbines of 12,000 i.h.p. Her dimensions are: Length 520.4 ft.; breadth 60.3 ft.; depth 30 ft.; tonnage 10,757 gross, 6,827 registered. It is probable that some of the company's other vessels will be similarly transferred.

The Donald Steamship Co., Ltd., of Montreal, is reported to have ordered 2 steel steamships of about 8,000 tons capacity each for fruit and passenger trade between New York and the West Indies, with the Todd Shipyard Corporation, Brooklyn, N.Y. The keel of the first ship was reported to have been laid Mar. 10, and it is stated, that both ships will be oil burners, with a speed of 14 knots an hour. C. I. de Sola and W. R. Eakins, Montreal, are directors of the Donald Steamship Co., and McLean Kennedy & Co., Montreal, are agents.

The Isthmian Steamship Lines is operating a freight service between New York, Vancouver, B. C., and United Kingdom ports, via the Panama Canal. The first sailing was with the s.s. Steelmaker, from New York, Feb. 3, and after discharging cargo at Vancouver, she sailed for the United Kingdom about the middle of March, on a tramp voyage, the ports of call depending on the cargo offering. The s.s. Steel Voyager sailed from New York, Feb. 23, for Vancouver, with the intention of returning to New York, thus maintaining one service between New York and Vancouver, and another service between New York, Vancouver and United Kingdom ports.

## Maritime Provinces and Newfoundland.

The Dominion Public Works Department received tenders Mar. 23, for an extension to the wharf at Sober Island, Halifax county, N. S.

The s.s. Bessie M. Dugan, owned in Boston, Mass., is reported to have been sold to Newfoundland parties for service in that Dominion. It is stated that she is to be completely rebuilt, and refitted, and that she will be ready for service in the spring.

Eastern Steamship Lines, Ltd., announces the resumption of its service between St. John, N. B., and Maine and Boston ports, April 1. The service was suspended early in January, so that the ships engaged might be converted into oil burners.

The Dominion Government s.s Montcalm, which had a lot of heavy ice navigation in the Gulf of St. Lawrence, during the winter, in breaking the way for the Canadian Government Merchant Marine's s.s. Canadian Spinner, and in taking supplies to the Magdalen Islands, was ordered, during March, to cruise along the Nova Scotia coast, break up ice at the entrances to small harbors, and visit the buoys in the Bay of Fundy.

The Dominion Coal Co.'s s.s. Cape Breton was wrecked in the ice at Scatari Island, Mar. 7. She sailed from Halifax, Mar. 5, encountered heavy ice and was blown ashore, after being completely disabled. The crew landed without difficulty and proceeded to Louisburg. She was built at Hylton, Eng., in 1890, and was screw driven by engine of 160 n.h.p. Her dimensions were: length 258 ft.; breadth 37 ft.; depth 16.8 ft.; tonnage 1,764 gross, 1,109 registered.

## Province of Quebec.

The Lachine Canal was emptied Mar. 25, for the usual overhaul and repairs. It is expected that it will be reopened for traffic about April 15.

The Dominion Public Works Department will receive tenders to Apr. 7, for a license to operate a ferry across the Ottawa River between Sand Point, Ont., and Norway Bay, Que.

Capt. Donaldson, Quebec, is reported to have ordered from Davie Shipbuilding and Repairing Co., Lauzon, a steel steamboat 90 ft. long overall, for service on Lake St. John, between Peribonka and Roberval.

The Gulf of St. Lawrence Shipping and Trading Co.'s s.s. Labrador arrived at Quebec, from Murray Bay, Mar. 10, and sailed again on Mar. 17, for Seven Islands. She is reported to have had some difficulty in navigating, on account of ice, the section between Murray Bay and Quebec being considered the worst part of the river during winter.

The Central Railway of Canada's s.s. Empress was offered for sale by tender Mar. 31, under an order of the Exchequer Court of Canada in the matter of the City Safe Deposit and Agency Co. vs. Central Ry. Co. of Canada. The s.s. Empress was built at Ottawa in 1873, originally named Peerless, and was rebuilt at Montreal in 1886. Her dimensions are: length 185.3 ft., breadth 27.6 ft., depth 8.1 ft., tonnage 678 gross, 372 registered. She has an iron hull, and is paddle wheel driven by engine of 152 h.p. She was owned formerly by the Ottawa River Navigation Co., and last year was operated by the Central Ry. of Canada, between Montreal and Carillon. She has capacity for about 800 passengers, is said to be in good condition, and is lying in the basin near the first lock of the Lachine canal.

## Ontario and the Great Lakes.

The Western Navigation Co., Fort William, Ont., advises us that it does not intend operating any steamships on the Great Lakes this year.

The Keystone Transportation Co. will operate its steamships Keybell, Keynor, Keyport and Keywest in the lake trade during the forthcoming season. Its s.s. Keyvive is at present engaged in the West Indies trade.

Passenger fares on the ferry boats between Windsor and Detroit were raised Mar. 1, round trip tickets being now 10c, and strip tickets 7 for 25c. Rates on motor cars, trucks, etc., are arranged on a sliding scale.

The American Transit Co., Sarnia, Ont., which operated the s.s. Frank B. Stevens in 1919, in connection with the Cleveland-Sarnia Sawmills Co., Ltd., of which it is a subsidiary, does not propose to operate the ship this year, and is offering it for sale.

The Dominion Transportation Co., Sault Ste. Marie, Ont., purposes operating its steamships, Caribou and Manitou this year, between Sault Ste. Marie and Owen Sound, and Sault Ste. Marie and Michipicoten. J. J. Noble is Superintendent at Sault Ste. Marie, and G. D. Stewart is agent at Owen Sound.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above mean sea level for February as follows: Superior 601.91; Michigan and Huron 579.95; St. Clair 573.41; Erie 570.80; Ontario 245.01. Compared with the average stages for the past 10 years, Superior was 0.09 ft. above; Michigan and Huron 0.01 ft. above; Erie 0.80 ft. below; Ontario 0.47 ft. below.

The oil tank steamship G. R. Crowe, owned by the Montezuma Transportation Co., Toronto, and operating between New York and Tampico, was reported disabled in the Gulf of Mexico, Mar. 21, and was towed into Mobile, Ala., for repairs. She was owned formerly by the St. Lawrence and Chicago Steam Navigation Co., Toronto.

The Collingwood Steamship Co.'s s.s City of Meaford has been dismantled, and her register closed. She was rebuilt at Meaford, Ont., in 1906, was originally named Seaman, and was owned by Pearks Bros., Meaford, when she was acquired by her later owners, in 1917, for service between Collingwood and Sault Ste. Marie. Her hull is of oak, and she has the following dimensions, length

111ft., breadth 24ft., depth 8ft. 5ins.; tonnage, 328 gross, 223 registered.

Canada Steamship Lines, which runs a steamboat service between Hamilton and Wabasso Park, Ont., under an agreement with the city, applied to the Hamilton Parks Board, Mar. 17, for permission to increase adult return fares from 15c to 20c for 1920, and 25c for 1921, leaving children's fares of 10c unchanged. The company claimed that its operating cost had risen by 150% during the past few years, and that the receipts for last year were $2,000 less than the expenses, but permission to make an increase was refused.

The s.s. Chicora, owned formerly by Canada Steamship Lines, Ltd., and sold recently in Toronto, after having sunk at her berth there, and having been raised, will, it is said, be operated during the forthcoming season, by the Niagara Ferry and Transportation Co., and the Erie Beach Amusements, Ltd., between Buffalo, N.Y., and Fort Erie, Ont. She is at present figuring in an action at Toronto, to settle her ownership, one of the parties disputing the ownership being stated to be an alien, and therefore incapable, legally, of owning a British registered vessel.

Canada Steamship Lines' s.s. H. M. Pellatt has been sold to Belgian parties. She was built at Glasgow, Scotland in 1903, of steel, her dimensions being, length 239ft., breadth 37ft., depth 24ft.; tonnage, 1,591 gross, 1,038 registered. She is equipped with triple expansion engines, with cylinders 21, 35 and 57 in. diar., by 36in. stroke, 1,250 i.h.p. at 83 r.p.m., supplied with steam by 2 Scotch boilers, each 13½ft. diar. by 10¼ ft. long at 180 lb. She was built originally for the Canadian Lake & Ocean Navigation Co., and eventually passed to the Merchants Mutual Line, Ltd., Toronto, and thence to Canada Steamship Lines, Ltd.

The Toronto Ferry Co. has applied to Toronto City Council for permission to increase its fares from 10c to 15c. It is the intention that residents on the island and children travel at the old fare, and that combination tickets, including admission to baseball games be issued at the old price of 50c plus war tax. A similar application was made in 1919 and was refused. It is said that increased cost of fuel and labor have added $18,000 a year to the operating cost, and that there has been a considerable expenditure for new equipment and repairs. The company is reported to have stated that if the increase is refused, it will be compelled to reduce its service to the lowest limit permitted by the city's by-law.

An order in council has been passed making regulations for the ferry service across the St. Clair River, between Sombra, Ont., and Marine City, Mich., providing that boats to be used for passengers must not be less than 24 ft. long, 6 ft. beam, for automobiles 34 ft. long, 11 ft. beam, and that during the season when ice is in the river, 2 rowboats, registered and inspected by the Dominion Inspector of Steamboats are to be used. The fares are fixed for adults in summer at 15c one way and return the same day, and 25c in winter; children 10c return, tickets, 8 trips for $1, automobiles $1 a trip, trucks $1.50 light, $2.50 loaded. A license will be granted for 10 years on an annual payment of $1.

Canadian Maritime Co.'s s.s. J. H. Plummer, registered at Montreal, has been sold to Belgian parties. She was built at Newcastle upon Tyne, Eng., in 1903, of steel, her dimensions being, length 246ft., breadth 37ft., depth 24ft.; tonnage, 1,582 gross, 992 registered. She is equipped with triple expansion engines with cylinders 20½, 33 and 54 in. diar. by 36in. stroke, 1,250 i.h.p. at 81 r.p.m., and supplied with steam by 2 Scotch boilers each 13½ft. diar. by 10¼ ft. long at 180 lb. She was built originally for Canadian Lake and Ocean Navigation Co., Toronto, and later passed to the Merchants Mutual Line, Ltd., under the management of Canada Steamship Lines, Ltd.

Lake Ports Navigation Co., Ltd., Sarnia, has bought the s.s. Conestoga from the Crosby Transportation Co., of Milwaukee, Wis., and has transferred her to the Canadian register. She was built at Cleveland, Ohio, in 1878, of oak, her dimensions being, length 252 ft., breadth 36ft., depth 26ft. 3in.; tonnage, 1,726 gross, 1,562 registered. She was originally named Susquehanna, and is of the awning or hurricane deck type of ship, with steel arches, steam pump wells, the hull divided by a single watertight bulkhead, and equipped with electric lighting. The propelling machinery consists of a Steeple compound engine with cylinders 17 and 34in. diar. by 32in. stroke, supplied with steam by a firebox boiler 9ft. diar. by 16 ft. long at 90 lb.

The Webster Steamship Co.'s s.s. Marian W, was practically destroyed by fire at the Louise Basin, Quebec, Mar. 6. Her estimated value was $60,000, which is partly covered by insurance. She was built at Mount Clemens, Mich., in 1890, and was originally named Byron Whitaker. Her hull was of oak, and she was built with diagonal strapping on frame, steel boiler house, steam pump wells and bow sheathed for navigation in ice. Her dimensions were,—length b.p., 220 ft., breadth moulded 38 ft., depth moulded 21 ft., tonnage 1,539 gross, 959 net. She was equipped with fore and aft compound engine, with cylinders 24 and 46 in. diar., by 40 in. stroke, 750 h.p., at 90 r.p.m., and supplied with steam by a Scotch boiler 12 x 12 ft. at 130 lb. She was owned formerly in Chicago, Ill., and was bought a few years ago by F. E. Hall & Co., Montreal, and subsequently sold to L. C. Webster, President, Webster Steamship Co.

## Manitoba, Saskatchewan and Alberta.

The Hudson's Bay Co.'s paddle wheel steamboat Athabasca River, which was built at Athabasca Landing, Alta., in 1912, has been dismantled and re-registered as a scow. Her dimensions are, length 136ft., breadth 28ft., depth 3.6 ft.; tonnage, 341 registered.

The Manitoba Gypsum Co.'s steamboat Marvyl, registered at Winnipeg has been dismantled, re-registered as a barge and sold to Northern Fish Co., Selkirk, Man. She was built at The Landing, Man., in 1905, and was screw driven by engine of 27 h.p. Her dimensions are: length 120 ft., breadth 26 ft., depth 8 ft.; tonnage 225, registered.

The Lamson and Hubbard Canadian Co., which operates in northern waters, and which purchased the assets of the Peace River Trading Co. recently, has made a number of amendments to its by-law, respecting directors, etc., providing that the business shall be managed by 11 directors who must be shareholders, and be elected at each annual meeting for one year; meetings to be held at the place to be determined by the directors, and directors as such are not to be paid any stated sum for their services. The head office is at Boston, Mass., S. St. J. Morgan being President, and J. C. Bassett, Secretary.

## British Columbia and Pacific Coast.

Preparations are being made at Victoria, B.C., for the opening of the whaling season about the middle of April. It is anticipated that 8 ships will open the season, 3 operating from Kyuquot, 3 from Rose Harbor, and 2 from Naden Harbor.

The C. P. R. is, we are officially advised, looking into the question of building an additional steamship for its British Columbia coast service, somewhat larger than its s.s. Princess Alice, and with a dead weight cargo capacity of about 1,000 tons.

The Grand Trunk Pacific Ry. has completed plans for considerable wharf extension at Prince Rupert. The new dock will be 860 ft. long, 173 ft. wide, with travelling cranes and 2 elevators. A two-story freight shed, 820 ft. long, with 25,000 tons storage capacity, will also be built.

A Vancouver press dispatch states that word has been received there from St. Paul, Minn., that the negotiations between the Vancouver Harbor Commission and the Great Northern Ry., for the purchase of water frontage on Burrard Inlet for the site of the projected Dominion Government pier, have been concluded.

It was stated in Canadian Railway & Marine World for March, that the s.s. Nouvelle Ecosse, the last of the wooden steamships to be built for the French Government, by the Foundation Co. of British Columbia, arrived at Fraser River mills early in February, to load lumber for Europe, and that the dispatching of the steamships from British Columbia had been handled by Edward White & Sons, Victoria, the rule to be followed that they called at Queenstown, Ireland, for orders, and after unloading at a British port, proceed to Brest, France. C. Gardner Johnson & Co., ship brokers and general agents, Vancouver, write us the following correction, "Our firm, with agents at Victoria, E. White & Co., appointed by us, were the sole agents for the French High Commission, and handled the 40 steamships built by them in British Columbia, of which the Nouvelle Ecosse was one and the last to sail. We really handled 41 for them, for the s.s. General Pau, though built on the U. S. side, returned from sea on her first voyage with boiler trouble, and had new boilers built in Vaucouver, to replace the ones taken out."

Port Colborne Elevator.—The Dominion Marine Association, a deputation from which waited on the Railways & Canals Department, Ottawa, recently, is much disappointed to learn that the Dominion Government grain elevator at Port Colborne, Ont., is not likely to have its trans-shipping facilities restored and in operation before June 1 at the earliest. It was hoped, some little time ago, that trans-shipment would be possible at the opening of navigation and a good deal of storage available.

# Shipping Federation of Canada's Annual Report.

Canadian Railway and Marine World for March contained some particulars of the Shipping Federation of Canada's annual meeting, since which we have been supplied with a copy of the President's report, which was signed by Jno. Torrance, who was unable to be present owing to illness. Following are extracts from it:

Navigation opened up much earlier than usual in 1919, the first arrival from the sea being the s.s. War Redcap, on April 22, while the last seagoing vessel to depart was the Elder Dempster liner Bassa, for South African ports, on December 10. The total number of seagoing ships to arrive at the port was 786, with a tonnage of 2,179,280, compared with 674 ships of 1,933,482 for 1918. The trans-Atlantic trade showed a good increase, numbering 702 ships against 644 for 1918, while the coasting trade also showed some recovery, but is still far below the standard of pre-war days. Strikes in the United Kingdom at times greatly interfered with the sailing of ships from this side.

Shipping conditions at the port may be described as good all through the season; there was a plentiful supply of freight offering, and also a good supply of labor available. Passenger traffic, although restricted through the shortage of passenger ships, was very brisk, both on the east and westbound trades. The value of exports from the port was approximately $700,000,000, which gives Montreal the honor of being the second largest port on the North American continent, being exceeded only by New York. This reflects credit on the port, when one takes into consideration that we are only favored with a seven months season, while our U. S. competitors have an all-year-round service.

Speaking of shipping conditions for the future, I regret to say they do not look anyway too bright, and we may fully expect to see a year or two of depression. At present, freight rates are on the downward grade, while operating expenses still continue to go the opposite way. New tonnage is fast coming on the market, which makes competition very keen for the freight offering, but it is to be hoped with increased trade this surplus will be quickly absorbed.

**Cold Storage**—For a modern port such as Montreal there has been one facility she has lacked for years, and that is proper cold storage accommodation to care for perishable export produce. In conjunction with the commercial interests, we had occasion to bring this matter before the Harbor Commissioners in the early part of the year, and also took the subject up with the government, and I am pleased to report that the government has advanced the commissioners sufficient funds to commence the erection of a modern plant.

**Berthing Accommodation.** For years past, we, who have berths in the upper section of the harbor, have suffered considerable inconvenience in loading and discharging our larger size ships through the piers not being long enough to berth two large ships without one overlapping the other. In order to overcome this handicap, we suggested to the commissioners that the piers should be lengthened approximately 250 ft. each, which they concurred in. Construction was commenced during the season and should be completed by the middle of next season.

**Wharfage Tariff**—The commissioners passed a new wharfage tariff, considerably increasing the rates on import and export commodities. The shipping and commercial interests took exception to this tariff being put in force , as it would seriously affect the trade of the port, which is in direct competition with the ports to the south of us, where every inducement is offered to attract trade. The commissioners, I am pleased to say, have so far withheld putting the new tariff into force, and I trust that with an increased import and export trade, sufficient revenue will be derived to meet the expenses of operating the harbor, without increasing the tariffs further.

**Labor**—Once again, I am pleased to report that our port was absolutely free from labor disturbances of any kind during the season; the longshoremen, shipliners and checkers carried out the agreements which they entered into at the opening of the season to the letter. It is very gratifying for me to report that, since 1911, our port has been very fortunate to escape the labor disturbances which have visited nearly all the principal ports of the world, and it reflects great credit on the port workers, who have time and again shown themselves to be a levelheaded and non Bolshevik class of people. I trust that the good feeling which now exists between employers and employes will continue for years to come. At St. John, N. B., agreements were entered into with the longshoremen, shipliners and coal handlers' associations, covering wages and labor conditions up to Dec. 1, 1920, which I hope will be faithfully carried out.

**Pilotage**—I regret to report that pilotage conditions on the St. Lawrence were very unsatisfactory during the year, especially in the Montreal district. For years past, the shipping interests have been vainly trying to have the pooling of earnings abolished in the Quebec district, on the grounds that it destroys the incentive of the pilots and encourages slothfulness. The Montreal pilots (a body of men who for years have enjoyed the confidence of the shipping interests) submitted a similar scheme for our approval, which, needless to say, was refused. Not being satisfied with a negative answer, the pilots formed themselves into an association known as the United Montreal Pilots, and commenced pooling their earnings. Matters then went from bad to worse, and finally ended by the shipping interests petitioning the government to throw open the pilotage districts of Montreal and Quebec by abolishing the compulsory payment of pilotage dues, which would give us permission to employ men in whom we would have absolute confidence. Owing to the shortness of the last session of parliament, no action was taken, but it is our intention to take this matter up further during the coming year, and see if some improvement can be made.

**St. Lawrence Ship Channel.**—Dredging operations were again greatly curtailed during the season. Considerable work, however, was accomplished at Cap-a-la-Roche, where the widening on the north side of the channel was completed. Some dredging and deepening was also done at the Longueuil curve, where it is proposed to widen the curve to 850 ft. and deepen it to 35 feet at E.L.W. When this work is completed, it will be a great improvement in this part of the channel. The usual sweeping of the channel was done thoroughly during the season, and no serious obstructions were found. Some sand bars were found to have formed in the Champlain channel, but these were immediately removed by dredges.

**Conclusion**—I would like to take the opportunity, now that I am leaving active business life, and severing my official connection with the federation, of saying how much its success and efforts are due to the loyal co-operation and friendly spirit of its different members and of hoping that this co-operation may continue in the future, as I am satisfied that this federation has been, and will continue to be, a great force for the good of the shipping interests, not only of the port of Montreal, but of Canada at large. During the time of my connection with the federation, all important Canadian shipping questions have been considered by its council and by its members, including legislation, rules, pilotage, navigation of the river, and other matters which directly affect the shipping interests. In all these questions the federation has made its influence felt. Its committee have taken cognizance of all the legislation which has affected the interests of the board, and have studied and influenced and in many cases taken the initiative where they thought it was in the interest of shipping that they should do so. I desire to take the opportunity of expressing my appreciation (which I think will be felt by all the members of the federation) for the work which has been done by your Secretary, Thos. Robb. He has been most devoted to the interests of the association and of the members of it, and has been indefatigable always in his efforts to please and assist us, and his complete knowledge of the affairs of the association render him, in my opinion, practically indispensable to us.

Questions are now under consideration which affect the interests of the board and all shipowners, which require your attention, and which I trust will be solved at an early date in a manner entirely satisfactory to us all. There never was a time when there was greater need for the loyal co-operation of all the different shipping interests in this country. In this connection, it is a subject of congratulation that for the first time, I think, since Confederation, Canada has as Minister of Marine, a Montreal merchant, and one, too, who is thoroughly familiar with the requirements of the port. Our relations with the various government departments have been most cordial, and I wish to extend our thanks to Hon. C. C. Ballantyne, Minister of Marine, A. Johnston, Deputy Minister of Marine, and G. J. Desbarats, C.M.G., Deputy Minister of the Naval Service, for their courteous attention given to the many matters which we have had occasion to bring to their attention. Our thanks are also due to the officers of the Militia Department, especially to Major-General J. Lyons Biggar, C.M.G., Quartermaster-General, who has now retired, after long and faithful service, and to Col. E. E. Clarke, Director of Supply and Transport.

The Canadian registered tonnage entered with the federation in 1919 was 108,000 tons, an increase of 30 tons over 1918.

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**Sea Going Safety**—Only one passenger in each 1,600,582 loses life at sea.

# Canada Shipping Act Amendment Discussed in House of Commons.

The Minister of Marine, Hon. C. C. Ballantyne, on Mar. 12, moved that the House of Commons go into committee on the following proposed resolution: "Resolved that it is expedient to repeal the Canada Shipping Act, Revised Statutes of Canada 1906, chap. 113, secs. 85 to 89, both inclusive, and sec. 91, and to re-enact in lieu thereof as follows: 1. That every British subject who—(a) served as a master or mate of a seagoing or coasting sailing vessel of over 75 tons, gross tonnage, before Jan. 1, 1920, for a full period of 12 months within 10 years immediately next preceding the date of his application for certificate of service, (b) produces satisfactory evidence of his sobriety, experience, ability and general good conduct on board ship, and (c) passes the sight test and the prescribed examination in signalling, shall be entitled, on payment of the prescribed fee, to a certificate of service as a master or mate of a square rigged or fore-and-aft rigged sea-going or coasting sailing vessel not exceeding 750 tons, registered tonnage, according as his service has been (a) as master or as mate, (b) on a sea-going or on a coasting sailing vessel, (c) on a square rigged sailing ship or on a fore-and-aft rigged sailing vessel. 2. That in every such certificate of service the name, place and date of birth of the person to whom the same is issued shall be stated, and each certificate shall specify whether the holder is entitled to act as master or mate, whether the certificate is for sea-going vessels or for vessels in the coasting trade, and whether for square rigged sailing vessels or for fore-and-aft sailing vessels, and that it is not for any vessel exceeding 750 tons, registered tonnage.

The proposed resolution was discussed as follows:

D. D. McKenzie, M.P. for North Cape Breton and Victoria, N. S.: "Legislation very much akin to what is aimed at by this resolution was introduced in the latter part of one of the sessions last year by the member for Halifax (Hon. A. K. Maclean), but it met with such vigorous opposition from members, including myself, that the acting minister thought proper to withdraw the bill. Now the Minister of Marine comes forward with a resolution, not exactly word for word, but on almost precisely the same lines as the legislation introduced last year. We all know that a certain standard of education, experience and ability is required of professional men in this country. In the case of lawyers, doctors, engineers, or any other professional men, certain educational requirements have to be met, and certain experience must have been had before they are permitted to practice. I venture to say that captaincy and charge of ships has been regarded not merely as a profession in this country, but as a very honorable and very onerous profession for the last hundred years and more. The Minister of Marine and Fisheries now brings before this Parliament legislation that would do away entirely with educational requirements in the case of a man whose duty it is to take charge of a ship. According to this resolution, if a man obtained a certificate 10 years ago stating that he had served on board ship for 12 months somewhere in Canada, now, after the lapse of that time, during which he may have done anything else and may have forgotten all about seamanship, he can claim a license as a captain qualified to put to sea with a crew. The sections in the Revised Statutes of Canada, chap. 113, and also secs. 85 to 89 inclusive, are very simple in their requirements, and are not, I think, too exacting. If this proposed legislation were restricted to coasting ships there would not be so much danger. But it is also contemplated to license such men as I have mentioned to go across the ocean. What would happen to such a captain if he went to Liverpool? He might take his ship there, but he would never be able to leave, because his certificate would be regarded as a mere scrap of paper. He would have to show a certificate recognized on the other side by the Board of Trade. It is possible that the minister may have consulted the English Board of Trade and obtained its approval of the bill. If he has not done so, I fear that the captains who might possess these unsatisfactory certificates would find themselves in difficulty in the old country. We know of instances in which engineers have gone from Canada to the old country, with certificates that were good enough here, but were rejected on the other side, and in this predicament competent engineers had to be secured to clear the ships of the ports in England. I earnestly submit that in order to take charge of an ocean ship a man must have adequate knowledge of seafaring and be able to ascertain his position by the use of the proper instruments. So far as I am concerned, I desire it to be distinctly understood that I repudiate any responsibility that might accrue by the enacting of such legislation as this, for I think it is a most dangerous thing to put life and property in the hands of incompetent captains. The insurance companies of this country, I think, would refuse to insure ships or cargoes intended to be sent to sea under the control of men who were palpably incompetent in every sense, at least in the matter of training. The minister was not in the house when the bill to which I have made reference was introduced. If he had been, he would recall that both our own law and the English law on the subject were cited, and that after due consideration of the facts the member who introduced the bill deemed it wise to withdraw it. I am therefore surprised that within such a short time the minister should seek to establish such a low standard of seamanship in this country. In conclusion, I can only emphasize my protest and leave the responsibility entirely with the minister and those who may be disposed to implement this resolution by an act of Parliament."

Hon. C. C. Ballantyne, Minister of Marine, said: 'I was not present at the special session of the house when the then acting minister introduced the bill in question, which was not similar to, but different from this. That bill applied to sailing ships propelled by auxiliary power, but this resolution does not apply to such ships. It applies only to sailing ships of a certain tonnage. Under the Shipping Act any master who served on a sailing ship prior to 1870, if he were alive today, and were sober, experienced and of adequate ability and general good conduct, would be entitled to a certificate on the payment of the prescribed fee. The member for North Cape Breton will at once realize that we could not expect men to be fit captains of sailing ships who had served prior to 1870, and this resolution seeks to repeal sec. 85 of the Shipping Act, and to enact that any man who has served on a sailing vessel for 12 months within the past 10 years and possesses the qualifications to which I have referred, in addition to a knowledge of signalling, shall be granted a service certificate. This is nothing new. We are merely bringing the Shipping Act up to date, and it is difficult for me to apprehend the reasoning of the member for North Cape Breton and Victoria in his argument that the legislation proposed is unusual and hazardous. I wish to say to him that the service certificate that shall be granted to an officer who desires to become a master of a sailing ship, should this resolution and the bill that is to be based upon it pass, is a service certificate that will be recognized just the same as a competency certificate. There is absolutely no difference so far as recognition by the English authorities is concerned between the service certificate and the competency certificate.

"With regard to the other clause, I wish to have sec. 86 of the act repealed also because a mate cannot obtain a service certificate without going back as far as 1883. Surely members will not object to the changes that the resolution calls for, in order that both a master and a mate, instead of having to go back to 1870 for the master, and 1883 for the mate, may, upon a service of 10 years be capable of obtaining a service certificate. During the last few years captains and mates of sailing ships have become very scarce; in fact, they were so difficult to get that during the war I had to take the necessary authority under the War Measures Act to grant service certificates to masters and mates of sailing ships. My object in bringing forward this resolution now is to meet the absolute necessity that exists for more masters and mates, by enabling them to get service certificates for sailing ships. The act introduced at the special session of the house was for sailing ships driven by auxiliary power. This resolution is confined to sailing craft only. There is another section of the Shipping Act—sec. 87—that I desire to have repealed. It provides that a ship shall be only 100 registered tons and not over 150. The resolution stipulates that the tonnage may be increased to 750 tons. The member from North Cape Breton comes from a maritime province, and I am sure that he appreciates better than I do the fact that those experienced men who have been on sailing ships for a number of years, while they may not be able, owing to lack of education, to pass the competency test, and therefore obtain competency certificates, are just as good men and just as competent, providing that their eyesight is all right and that they understand signalling, as others who may be better equipped as far as education goes. But we cannot put men on sailing ships who are 70 years of age. I therefore wish to repeal the clause so as to provide that masters and mates who have served, within the past 10 years, for 12 months on board a sailing ship

may be granted a certificate providing they have the qualifications that I have referred to."

The debate was continued on Mar. 18 by D. D. McKenzie, who again protested against its passage, the Minister of Marine replying. On Mar. 19 W. Duff, M.P. for Lunenburg, N.S., and C. A. Fourner, M.P. for Bellechasse, Que., and R. H. Butts, M.P. for Cape Breton South, and Richmond, N.S., spoke in support of the resolution, which was adopted, and a bill founded on it was introduced and read a first time.

## Loss of the Leyland Line s. s. Bohemian.

An enquiry into the loss of the Leyland Line s.s. Bohemian, on the Sambro Ledges, near Halifax, N.S., on Mar. 1, when six of the crew were drowned, was held at Halifax, Mar. 5, before Capt. J. B. Henry, commissioner, assisted by Capts. N. Hall and C. O. Allan as nautical assessors. The evidence showed that the Bohemian left Boston, Mass., Feb. 28, with 65 passengres and 115 of a crew for Liverpool, Eng., via Halifax. At 5.10 p.m. Feb. 29, Brazil rock was passed, a mile distant, on a course n. 55 e. true, and at 8 p.m. Little Hope Island was 6½ miles off by a 4 point bearing. The ship continued on the same course until 1.30 a.m., Mar. 1, when the master was called according to his instructions, and at 1.58, the direction finding station at Chebucto Head was asked for a radiotelegraph bearing, which was goven at 2.5, as Chebucto Head approximate bearing from 207 deg. east of true north. After consulting the chart, the master considered the radio bearing incorrect, and without verifying his position by soundings, continued on his dead reckoning, as he considered he had a visibility of 5 or 6 miles. At 2 a.m., the speed was reduced to slow, approximately 4 to 5 knots, the master intending to continue for 2 or 3 miles before hauling up for pilot station, but at 2.40 a.m. the course was altered to n. 10 e. true, without any soundings being taken, or the ship's position otherwise verified, and as the course was being altered, Sambro light was sighted at a presumed distance of 5 to 6 miles. The explosive signal at Sambro was heard about the same time, followed a little later by the Chebucto fog horn. Still no soundings were taken though the Sambro light vessel was not sighted, as it might be expected to have been from a ship in the position the Bohemian was presumed by her master to be, with the assumed visibility. The ship struck on Broad Breaker at 2.50 a.m., and though efforts were made by engine movements to float her, they were unsuccessful and she broke in two about 3 a.m., Mar. 2. Assistance arrived from Halifax, and all passengers were landed on the morning of the stranding, and during that day some of the crew were engaged to work for the salvage company, but this work was completed the same evening. It was the unanimous opinion of the master, surveyors and salvage experts, that the ship was quite safe for two or three days, but unexpected circumstances developed. There were about 100 men on board, including master, officers, crew and salvage men, and the transfer of these was made by rope ladders and lines from the Bohemian to the tug Roebling, which was alongside. During the transfer in the early hours of a very cold morning, six lives were lost, the victims apparently not being able to maintain their hold of the ice coated lines, either through frost bite, or burning through sliding down the ropes. Five of those lost were from the steward's department, none being firemen, who might have been more affected through the cold weather than the deck staff.

In commenting on the evidence, the court stated that the master, without taking the necessary steps to obtain an accurate estimate of the distance off Sambro light, which is surrounded by such dangerous outlying ledges, either thoughtlessly, or for some unexplained reason, except over confidence, as expressed by him, continued to haul the ship on her northerly course and into danger. He had plenty of time to have another bearing from the direction finding station before assuming his northerly course. The court expressed its appreciation of the difficulties experienced by navigators during the war, through mine and submarine zones, and other enemy dangers, and could not but consider the excellent war services of the master, Capt. E. C. Hiscoe, who, from the evidence, was successful in evading disaster to his vessel from submarines, though attacked on three occasions. Taking into consideration the facts as presented, the court found that he should have taken soundings when he received his radio bearing, before rejecting it as incorrect, again before he altered his course, and still again immediately he saw Sambro light, and also should have availed himself of further bearings from the radio station. He might easily have hauled away from the light, which was the proper thing to do under the circumstances. Therefore, the court, while finding him at fault for the casualty, crediting him with his war record and past career as a master, took a lenient view of the case and suspended his certificate, 00551, for three months from Mar. 8. The court also found that the second officer, S. Blackmore, master's certificate 039,-432, in whom the master, apparently had implicit confidence, was lacking in his sense of responsibility and duty, and censured him for not suggesting the necessity for verifying the ship's position by soundings and further radio bearings. The court considered that the deplorable loss of life was not in any way due to the neglect of any individual or individuals, but was caused during the transfer to the tug in the dark hours of a very cold morning, owing to the condition of the rope ladders and ice coated davits, etc. The court impressed upon navigators the desirability of more extensive use of the direction finding stations, which are undoubtedly a distinct advantage to mariners as a further means of checking their positions. The court also stated that it might have looked askance upon the disappearance of the log books and other papers, had it not been for the master's sworn statement that he also lost his certificate at the same time.

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**The Pullman Co.** is reported to have applied to the Interstate Commerce Commission for permission to increase its fares about 20% with a minimum of 50c for seats and $2 for lower berths.

## St. Lawrence River Ice Conditions.

J. Archambault, M.P., for Chambly-Verchères, said in the House of Commons Mar. 9:—"I wish to call the attention of the government to a most important and urgent matter. I am informed from reliable sources that the ice jam on the St. Lawrence is much deeper this year than ever before. At Cap Rouge, above Quebec, there is a gorge, and I am informed the ice has frozen 40 ft. deep, and that the water behind has risen 6 ft. higher in some places. There is an ice barrage. If this barrage is not broken up immediately there will be serious floods from that point up to Montreal. We had ice breakers that were built for that purpose. I understand that the steamships Earl Grey, Minto and John D. Hazen were sent to Russia in 1915-1916 and 1917. The Montcalm is at Halifax and I understand the Lady Grey is not powerful enough to break the ice there. I am informed that unless dynamite is used to break the ice very serious floods will occur with resulting damage. I wish to know if the Minister of Marine and Fisheries is aware of the facts, and what steps he intends to take."

Hon. C. C. Ballantyne, Minister of Marine and Fisheries, said: "I am afraid that the information that has reached the member is not accurate, and I shall be very glad indeed to give the information that he asks for. The first part of the winter was not very cold, and no ice bridge formed on the St. Lawrence up to Nicolet Traverse, 90 miles above Quebec, until the last week in January. The ice jammed several times during the winter at Cap Rouge, the Quebec Bridge site, which is considered the key of the ice situation, but was successfully broken up by the ice breaker Lady Grey. With no ice bridge formed at this point, there is no fear of disastrous floods occurring above. The channel is now clear if ice up to near Portneuf, 35 miles above Quebec, where the Lady Grey is working today, and is making good progress. The conditions this year are not much different from those of former years. The Lady Grey hopes to reach Cap Charles, 50 miles above Quebec, very shortly. The Montcalm first of all had to go to Belle Isle to take the place of the Arranmore that was wrecked, and to relieve the lighthouse people there. She afterwards had to go to the assistance of the Canadian Government s.s. Spinner, that was stuck in the ice below Father Point. After releasing that ship she proceeded to the Magdalen Islands, carrying provisions for the distressed people there. Owing to the severity of the weather and the thickness of the ice, she was delayed a month in making that voyage. She returned to Halifax requiring repairs, especially propeller blades, but owing to the wreck of the s.s. Bohemian, she had to go to her assistance. The Montcalm is now in Halifax and will go on the drydock as soon as possible. I do not anticipate any serious results from floods this spring— no one can accurately tell—but I am pleased to say that the Lady Grey is working well and that the ice bridge is broken."

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**Great Lakes Mariners Votes.**—A deputation of masters and mates in the Great Lakes trade has asked the Dominion Minister of Labor that the same consideration be granted to them at elections as is given to railway men, so that they may vote in a similar way.

## Superintendent of Pilots for Montreal-Quebec Pilotage District.

The Civil Service Commission advertised recently for applications for appointment as Superintendent of Pilots for the Marine Department of Marine for the Montreal-Quebec Pilotage District, at an initial salary of $3,060 a year, which will be increased on recommendation for efficient service at the rate of $180 a year until a maximum of $3,600 has been reached.

Duties—Under direction, to supervise the pilotage service in a pilotage district of the Marine Department; to call and assign pilots to ships, receive pilotage dues, and make the required reports and returns to the department; to conduct investigations, when required, into wrecks, collisions, and strandings; to make recommendations and handle correspondence in connection with such work; and to perform other related work as required. Qualifications.—A master's certificate of competency; must have been actually master of a seagoing ship, or a passenger ship in the coasting trade, for at least one year; must be thoroughly familiar with all shipping matters, especially those of the Gulf and River St. Lawrence and have a knowledge of the English and French languages. While no definite age limit has been fixed, age may be a determining factor when making a selection. Examination.—Subjects and weights as follows:—Education and experience, 100; oral interview, if necessary in the opinion of the commissioners, 100.

## Ice Breakers in the St. Lawrence.

The following questions were asked in the House of Commons, Mar. 10, by M. S. Delisle, M.P. for Portneuf, Que., the answers being given by the Minister of Marine.

Is the government aware that there is an insufficient number of ice breakers operating in the St. Lawrence? Answer: The only ice breaker operating in the St. Lawrence River at present is the C.G.S. Lady Grey.

If so, does the government propose to order the construction of new ice breakers, how many and of what type? Answer: Under consideration.

If the government has not been made aware of such a condition, is it the intention to order the construction of one or several of such ice breakers? Answer: Under consideration.

## British Shipbuilding in 1919.

The most notable British vessels launched during 1919: The Arundel Castle, 22,150 tons; the Cameronia, 16,000 tons, the Oropesa, 14,000 tons and the San Fernando, 13,056 tons. Of that remainder, 127 were between 5,000 and 6,000 tons; 47 between 6,000 and 8,000 tons, and 11 between 8,000 and 10,000 tons. It is a remarkable fact that not a single sailing ship was launched in Great Britain during the year, and only 17, with a total tonnage of 148,188, are fitted with turbine machinery. The four largest vessels, above mentioned, are all propelled by geared turbines, and five ships making 32,926 tons together, are provided with Diesel engines; the largest motor ship is a vessel of 6,980 tons.

The Clyde, including Glasgow and Greenock, accounts for 525,747 tons, which is over 32% of the whole British production. Glasgow yards show an increased production of nearly 80% compared with 1918. Next in order of magnitude of production comes Sunderland, with 274,283 tons, which is a slight improvement on 1918, while Newcastle follows with 239,836 tons, or rather less than 1918. At Belfast and Londonderry, which take fourth place in the list the tonnage launched was 213,720, an increase of over 42% from 1918. The only other district with more than 100,000 tons to its credit is Middlesbrough, Stockton and Whitby, for which the figure is 119,943, nearly 10% more than in 1918.

## Proposed Control of Inland Navigation Rules Etc.

The Dominion Parliament has given a first reading to a bill introduced by J. E. Armstrong to amend the Railway Act, 1919, by adding sections to give the Board of Railway Commissioners jurisdiction over ships trading on inland waters, and in coasting business. In explaining the bill Mr. Armstrong said it is similar to the one he brought before the House in 1919, and is intended to bring such ships under the Board of Railway Commissioner's control as to rates, tolls, tariff agreements and arrangements, time of cal, duration of stay and so forth. The last section of the bill seeks to amend Sec. 358 of the Railway Act in order that it may harmonize with the principles of this bill. The Winnipeg Board of Trade is reported to have passed a resolution Mar. 13, opposing the bill and it was further stated that other boards of trade in the west would be asked to also oppose it.

**Steamship Service to Gaspe Points.**—Sir George Foster, acting Prime Minister, gave the following information in the House of Commons, Mar. 11, in answer to questions by C. Marcil, M.P., for Bonaventure. The government does not intend to offer a subsidy this year for a steamship service between Campbellton, N.B., and Gaspe, Que., which was discontinued at the close of navigation in 1917. No requests have been received for the revival of the service this year. The Gulf of St. Lawrence Shipping & Trading Co., Quebec, has a contract for a steamship service this year between Montreal and Quebec and Gaspe, or Paspebiac, Que. The same company ran fortnightly trips last year between Montreal, Quebec, Gaspe and Paspebiac. There was no service to Campbellton.

**The Eastern Canada Stevedoring and General Contracting Co. Ltd.** has been incorporated under the Quebec Companies Act with $100,000 authorized capital, and office at Quebec, Que., to take over the business carried on formerly by L. Couture, to conduct a general contracting and stevedoring business, and to own and operate steam and other ships of every description. The incorporators are: L. Couture, M.L., M.J.S., V.K., and W. B. W. Mahon, Quebec, Que.

**Motor Transport, Ltd.** has been incorporated under the Dominion Companies Act, with $25,000 authorized capital, and office at Montreal, to carry on the transportation of merchandise and passengers upon land and water, towing, wrecking and salvaging, in all its branches, on navigable waters in Canada to or from any foreign port. The incorporators are: F. W. Tofield, B. S. Crombie, A. M. Murray, F. H. Robertson and E. Paul, Montreal.

## Canadian Government Steamboat Champlain.

The following questions by P. F. Casgrain, M.P. for Charlevoix-Montmorency, were asked in the House of Commons Mar. 10, and answered by the Minister of Marine:

Has the government disposed of the steamboat Champlain? Answer: No, but intends doing so.

If so, why? Answer: No further use for her.

What price was realized by the sale? Answer: $61,050.

Is it the Government's intention to buy or build another steamboat to replace the Champlain? Answer: No.

If not, why? Answer: No necessity for replacing her.

Is there any steamboat at present replacing the Champlain, along the route Murray Bay-Tadousac? Answer: The Champlain is still at Murray Bay.

The answers given to the questions, as reproduced from the official report of the House of Commons debates, do not agree, one answer stating that the government had not disposed of the ship, but intended doing so, while another stated that $61,050 was realized by the sale.

## Canadian Government Steamship Stanley.

The following questions were asked in the House of Commons Mar. 10, by D. W. Duff, M.P., for Lunenburg, N.S., and answered by the Minister of Marine:

Does the government own a steamer named the Stanley? Answer: Yes.

If so, when did she last undergo overhauling and repairs? Answer: At present under repair.

Have said repairs been completed, and what was their nature? Answer: No, general overhaul of the hull, boilers and machinery, including removal and refitting of certain shell plating, renewal of defective double bottom tank tops under boilers. General overhaul of the main and auxiliary machinery and boilers, overhaul of underwater fittings, also overhaul of the electric light installation including the rewiring of the ship.

What did said repairs cost? Answer: Amounts of contracts let, $23,507.85.

How long was the ship out of commission, giving dates? Answer: Dec. 12, still under repair.

**Gaspe Steamship Service.** Sir George Foster stated in the House of Commons, Mar. 22, that the government had not given any thought to putting on some of its steamships on the Montreal-Quebec-Gaspe route, in lieu of the steamships subsidized formerly, and that the government had no special information as to residents of Matane, Gaspe and Bonaventure counties having to rely on sailing craft to transact their business, as in the old days, but that there might be some cases of the kind. In answer to another question: "Owing to the government's refusal to grant a subsidy for a steamship service between Campbellton, N.B., and Gaspe, Que., is the government prepared to offer a subsidy of $3,000 for a steamship service between Dalhousie, N.B., St. Homer and Carleton, Que.?" Sir George Foster replied: "The answer is in the negative."

Tide Tables for Nelson, Hudson Bay and tidal data for Hudson's Strait and James Bay, for 1920 season, July to October both inclusive, have been issued by the Naval Service Department.

# Canada Steamship Lines, Limited, Annual Meeting.

Canada Steamship Lines Ltd. annual report for the calendar year 1919 was published in Canadian Railway and Marine World for March. The annual meeting was held in Montreal, Mar. 2. The President, J. W. Norcross, in moving the report's adoption, said:

"The report and financial statements have a special interest this year, as they afford an opportunity of gauging the possibilities of the enlarged system of the company's operations under peace conditions. During the past few years so many important developments have occurred that it might be of interest to shareholders to know how the various undertakings have gradually been rounded out into one complete unit of operation. At the time the consolidation was effected, the operations of the company were confined largely to freight and passenger business on the St. Lawrence and Canadian and inland waters. The various classes of tonnage owned by the companies at the time made it difficult to operate them to advantage under one central management. Today, as the result of carefully mapped out plans, the company operates a complete international trans-Atlantic and all-Canadian service. Its Atlantic, West Indies and South American lines are closely related to the inland services, and it has been clearly proved that the earnings of each department have benefitted by the new ones that have been established. The results obtained from the trans-Atlantic services have more than justified the important plans carried out in this field. While substantial revenue producers, these ocean services have been established at comparatively small capital outlay, and it has been possible to use in connection with them the company's regular traffic departments. At the same time their operation has necessitated only small additions to the general organization. Of equal importance has been the improvement in the class of tonnage owned and operated. The marked increase in tonnage values enabled your directors to dispose of, at very favorable prices, a large number of the steamships turned over at the time of the consolidation. They have in every instance been replaced by ships of the highest class. As a result, the company today has a fleet of steamers particularly adapted for the services in which they are employed. Notwithstanding the large increase in tonnage values, the entire fleet is carried on the books at a lower per ton rate than before the war. It might also be worthy of mention that while our trust deed only calls for a depreciation allowance of 2½% the board's policy has been to make a more liberal appropriation. The important affiliations made by the company in connection with its trans-Atlantic services are likely to lead to the establishment of other ocean routes. In addition, plans are being considered which may result in a working arrangement between your company and another very large undertaking. Both of these possible extensions should have a direct bearing on the growth of the import and export trade of the Dominion—a development which is so strongly urged, owing to its important bearing on the adjustment of the trade balance of the country. While we are passing through a period when it is somewhat difficult to see very far ahead, we feel that the results achieved under peace conditions justify confidence in the future. The broadening out of the organization makes the company less dependent on any one class of traffic and tends to stabilize, as a whole, the operations of the entire year. The company's various departments are co-related in a manner that permits of all your undertakings supplementing one another to advantage. With the inland and trans-Atlantic services, your agents can take delivery of freight at any port on the Great Lakes in Canada and the United States and issue to the shipper a through bill of lading to European ports. This is a particularly strong position to be in. Advantage was also taken of the special conditions that prevailed during the war period and as a result your company made a number of favorable long-term contracts which will greatly strengthen its position during the next few years. Your directors feel that gradually, but steadily, an efficient and complete system of transportation has been built up, which enables it to pre-eminently meet the demands of the growth of Canada's export and import trade. On this account your company is in a position to render a great service to the Dominion. This should be a matter of pride to every Canadian, as it will undoubtedly be to every shareholder."

M. J. Haney, of Toronto, Vice President, in seconding the adoption of the report, said: "The results reflect an achievement that is altogether exceptional for a Canadian corporation. Mr. Norcross, in his address, has been kind enough to give to the board of directors a considerable portion of the merit for the policy that has brought these eminently satisfactory results to the shareholders. Speaking on behalf of the board, I think it is only fair to point out that while we have given the management every co-operation at all times, the credit for the great organization built up and the satisfactory returns that are being obtained from the different departments must of necessity go to the management and the strong organization that has been rounded out. It must be a matter of considerable pride to the shareholders to note that their undertaking, by careful management, has been gradually rounded out from an inland undertaking, operating barely six months in the year, to a trans-Atlantic transportation system that operates in every month of the year, and covers such a multitude of services that any reduction in one department is likely in time to be offset by the increased revenues from others. It is surprising that the management has been able to do this without any increase in capital and with very small additions to the company's general organization. It only goes to show what a good organization the company has. Where before, the various agents were securing cargoes for the inland routes, they are now out in the different fields, filling up the ocean vesels in the various services of the company. Canada is every day becoming more of a factor in export trade to different parts of the world and with its substantial fleet of steamers, Canada Steamship Lines can assure to the Canadian shipper that his goods can be delivered in Canadian ships to the leading ports of Europe."

The following are the officers and directors for this year: Commander Sir Trevor Dawson, R.N., Honorary President; J. W. Norcross, President and Managing Director; M. J. Haney, Vice President; C. A. Barnard, K.C., Vice President. Other directors: E. Bristol, K.C., M.P.; W. E. Burke, Hon. Frank Carrel, Hon. J. P. B. Casgrain, H. W. Cowan, J. E. Dalrymple, D. B. Hanna, F. S. Isard, Sir Henry M. Pellatt, H. B. Smith, Geo. H. Smithers, J. P. Steedman.

London Advisory Committee: Commander Sir Trevor Dawson, Chairman; Sir Vincent Caillard, W. Grant Morden, M.P.; C. G. Bryan, Sir Francis Barker, Sir Frederick Orr-Lewis.

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**Steamship J. A. McKee.** The Minister of Railways gave the following information in the House of Commons, Mar. 22. The s.s. McKee, approximately 1,373 net tons, and 3,000 d.w. tons, was bought by the government, from Algoma Steel Corporation, April 18, 1917, for $500,000, and $342,660 has since been expended on repairs and refitting. She is engaged in the St. John, N.B.-West Indies trade. There was a deficit of $269,354 on her operation to Dec. 31, 1919, on account of serious damage sustained through the Halifax explosion, and also on account of her running aground at New York. As she was uninsured at that time, repairs were charged largely to operating expenses.

**British Docks**—A large number of important improvement schemes are being carried out by dock and harbor authorities in Great Britain. At the London port a new dock of 43 acres and with a water depth of 38 ft. is nearing completion. The scheme includes a graving dock to accommodate vessels of the largest class. A 2 story river jetty, with a frontage of 1,000 ft. and a low water depth of 30 ft. is also being built. At Liverpool the works in progress will cost £10,000,000, and include a large half tide dock and an extensive series of storage tanks for oil. On the Clyde new berthing basins large enough for the biggest vessels are being laid out, and important extensions are also being made at Leith and Dundee. Bristol Channel ports are increasing their equipment for handling coal, and at Plymouth, Dover, Grimsby, Sunderland, the Tyne, and the Tees, many improvements are being carried out.

**Tribute to C. Gardner Johnson.**—The Vancouver Pilot Board, just prior to quitting office recently, sent the following letter to the Secretary, C. Gardner Johnson: "We the undersigned members of the Vancouver Pilot Board now retiring (owing to the Dominion Government changing the head office to Ottawa), take the present opportunity to convey to you, by letter, our heartfelt thanks in appreciation of the excellent service you have given to the pilot commissioners at all times, in performing their respective duties for a period of over 30 years, in the capacity of Secretary of the Pilot Board, for the benefit of the shipping interest and pilot service of the Port of Vancouver. We also thank you for the courteous manner in which we have been treated by you during our business meetings, and we have pleasure in wishing you long life and prosperity in the future years to come. Yours sincerely, C. G. Major, Chairman; Frank Burnett, H. G. Ross, W. Harvey Copp."

## Durability of Piles in Intertidal Space.

How far above low water are untreated wood piles protected by saturation? This question has been asked a number of engineers by the Forest Products Laboratory, at Madison, Wis. In tidal waters the portions of piles above mean low tide, although completely immersed only part of the time, may be practically saturated all the time. Wood constantly saturated with water is not subject to decay, and this fact makes the height to which saturation extends above low tide a question of considerable interest to the designing engineer. The opinion of most of the engineers asked is that untreated piling in water not infested with marine wood borers will remain sound indefinitely if cut off at half-tide. This height ranges in various ports from 2.3 to 4.5 ft. above low water. At certain places on the Atlantic coast, piles cut off at the height of half-tide are still sound after from 50 to 100 years of service. Untreated piling is destroyed by marine borers more rapidly than by decay, and the information given would, of course, have no practical use where these organisms are active.

## A Ship Repairing Case in the Supreme Court.

An Ottawa press dispatch of Mar. 3 states that the appeal of Montreal Dry Docks vs. Halifax Shipyards, Ltd., was argued that day before the Supreme Court. The respondent was making repairs to the ship Westerian in Halifax, N.S., when it was put under arrest by appellants, who claimed liens for supply of materials. After the arrest the repairs were proceeded with at a cost of $15,000. The ship was sold under a court order, producing a sum slightly in excess of appellants' combined claim, and the latter took action in the Admiralty Court, claiming priority over respondent's claim for the cost of repairs after the arrest. The local judge at Halifax held that appellants had priority. His judgment was reversed by the Exchequer Court, on the grounds that the repairs had increased the selling value of the ship, and it would be inequitable to refuse full payment for the same; that the arrest had no effect on the lien of the shipwrights, whose possession was not interrupted thereby, and that respondent was in the same position as if permission of the court to continue the repairs had been obtained.

## Shipments of Goods to Roumania Through U.S. Ports.

W. Duff, M.P., for Lunenburg, N.S., asked the following questions in the House of Commons, Mar. 11: "Are Canadian goods, purchased by Roumanians on the credit of the $25,000,000, established by the government, and destined for Roumania, still being shipped through a U. S. port? If so, why does not the government insist that such goods, destined for Roumania, be forwarded through a Canadian port? Will the government give this important matter its most serious consideration?"

Sir George Foster, acting Prime Minister, replied: "Shipments to Roumania are being forwarded from Canadian ports. The total quantity shipped via Canadian ports has been 32,881 cubic tons, and via New York 2,850 tons. The traffic from Canadian ports has been handled in full ship loads. At the close of navigation last autumn it was necessary to relieve the various manufacturers of their accumulation of goods packed ready for shipment, although this quantity was not nearly sufficient to make up a cargo. About 75% of the material consisted of roofing, a comparatively low-priced commodity, which made the cost of storage, insurance and other charges prohibitive. There is no regular steamship service from Canadian ports to the Black Sea, but the Furness-Withy Co. has a regular sailing from New York. In order to relieve the accumulation of goods in the manufacturers stores, it was necessary to forward these goods through New York, where they could be shipped without storage or insurance charges being incurred. Meanwhile, the remainder of the goods to be shipped are being accumulated at Sydney, N. S., and St. John, N. B., and as soon as there is a sufficient quantity to warrant chartering a ship the remainder of the shipments will be made from these ports."

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**Harbor Tunnel for Victoria, B.C.**—There has been some press discussion recently in regard to the building of a tunnel in connection with the railway and harbor development works in progress in Victoria, B.C. Apparently at the request of the Minister of Agriculture, a Public Works Department engineer has made some investigations in the matter, the result of which has, a press report states, been communicated to the Victoria Board of Trade. The plan accompanying the letter shows a tunnel under the inner harbor of 5,600 ft. long, and 2,310 ft. of open cut, necessary to link up the ocean docks with the Canadian National Rys. terminals, the estimated cost of which is $2,000,000.

**Victoria Wharf Contract Suit**—Grant Smith and Co. and McDonnell Limited, have been given permission to enter suit against the Dominion Government for approximately $300,000 for work done in connection with the building of two wharves. The contractors' claim for the excavation of 28,276 cubic yards of earth and 32,100 cubic yards of rock at contract prices. There is a dispute as to what percentage of the excavation was rock and what earth. Earth excavation was paid for at 52c a cubic yard, and rock excavation at $9.10 a yard.

**The MacMillan River Exploration Co.** Ltd. has been incorporated under the Dominion Companies Act, with $30,000 authorized capital, and office at Ottawa, to carry on a general exploration and development business, and to own and operate steam and other ships, wharves, docks, elevators and other navigation facilities, and to act as common carriers. The incorporators are,—A. Haydon, D. R. Kennedy, E. R. Jackson, I. H. Doherty, E. Valois, E. H. O'Malloy and L. Brennan, all of Ottawa.

**Sorel Shipyard Superintendency.**—The Minister of Marine stated in the House of Commons, Mar. 11, in answer to questions by T. Gervais, M.P., for Berthier, Que., that no permanent appointment of a Superintendent of the Sorel, Que., shipyard had been made, to replace W. S. Jackson. Louis Lacouture is acting officer in charge, at a salary of $2,100, plus bonus of $228 a year. He has a practical knowledge of the English and French languages.

## Too Late for Classification.

The Polson Iron Works Shipbuilding Plant and other asets at Toronto are offered for judicial sale, tenders to be in by May 1.

Major-General Sir David Watson, proprietor of the Quebec Chronicle, is reported to have been appointed Chairman Quebec Harbor Commission, Vice Hon. D. O. L'Esperance, resigned owing to ill health.

A Vancouver, B.C., pres dispatch states that negotiations between the Vancouver Harbor Board, on behalf of the Dominion Government, and the Great Northern Ry., for the purchase of water frontage on Burrard Inlet, for the site of a new government pier, have been completed.

**Roy M. Wolvin,** who has been elected President Dominion Steel Corporation, was born at St. Clair, Mich., Jan. 21, 1880. He was in the Western Transit Co.'s service at Duluth in 1896 and 1897. He then became General Manager, Great Lakes & St. Lawrence Transportation Co. and Standard Steamship Co., occupying those position till 1910. He next became President of the Standard Shipping Co., Winnipeg, the Duluth Shipping Co., and the Central Shipping Co., Chicago. He later became President Montreal Transportation Co., Montreal; Vice President and Managing Director Halifax Shipyards; Vice President Collingwood Shipbuilding; President Reid Towing & Wrecking Co., as well as occupying several other responsible positions. He has worked in close contact with J. W. Norcross, President Canada Steamship Lines. He was elected a director of the Dominion Steel Corporation in New York.

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**Sales of British Government Ships**—The steamships War Company and War Storm, steel steamships built by J. Coughlan & Sons, Vancouver, B.C., and Wallace Shipyards, North Vancouver, B.C., respectively, for the British Government, under orders from the Imperial Munitions Board, are reported to have been sold to Italian interests. The s.s. War Company sailed from Vancouver some time ago from England, with a cargo of lumber, and reached Hull in 45 days, having met exceptionally bad weather, during which she is reported to have behaved remarkably well. The name of the s.s. War Storm has been changed to Laura. The wooden s.s. War Haida, built for the British Government by Cameron-Genoa Mills Shipyards, Ltd., Victoria, B.C., is also reported to have been sold to Italian interests, and to have been renamed Rodosto.

## Trade and Supply Notes.

**The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.**

**Whiting Foundry Equipment Co.** Harvey, Ill., has issued its crane catalogue 151, describing and allustrating electric, travelling, bucket, handling, gantry, transfer, hand, power, gib pillar and bracket cranes also bulletin 152, giving a list of users of the Whiting cupola.

# Order Early to get Early Delivery
## Delays are Dangerous

### HOISTS
We build any kind of Hoist you want, and for any purpose. We offer you a choice of either Steam, Electric or Gasoline Power, and 7 sizes, from 10 horse power up to 50 H.P. Let our Engineering Staff assist you with your Hoisting Problems.

### BUCKETS
We offer a large variety of styles and sizes of Steel Buckets, either Tipping or Bottom Dumping. Our prices are right, and we guarantee satisfaction as to both material and workmanship.

Standard Derrick Engine, made in 7 sizes, from 10 to 50 Horse Power.

### SMALL CARS
We catalogue a great many types of small cars, in a large range of sizes. We are prepared also to build to order any kind of small car you want, and in any quantity from one up.

### CAR IRONS
For repairing your small cars. Best chilled wheels, made of special charcoal iron. Steel Axles. Any kind of bearing or grease box you prefer. We supply complete sets, any size wheels or axles, and for any gauge track. Roller Bearings also fitted in car wheels if desired.

Let us send you our Catalogue. It will interest you.

**MARSH ENGINEERING WORKS, LIMITED** Established 1846 **Belleville, Ontario**

General Sales Agents: MUSSENS, LIMITED, Montreal, Toronto, Winnipeg and Vancouver.


# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.
Allow five words where replies are to be sent to a box number. Minimum order—$1.
Rates under other headings and for display advertisements on application.


## An Assistant Editor Wanted,

To collect material, and write on railway mechanical engineering, shop practice, etc., for technical periodical.

State age, full particulars of experience, and pay expected, addressing

**Acton Burrows,**
**President and Editor,**
**Canadian Railway and Marine World,**
**70 Bond Street,**
**Toronto, - - - - Canada.**


### CANADIAN PACIFIC RAILWAY COMPANY

NOTICE is hereby given that the Canadian Pacific Railway Company will apply to the Parliament of Canada at the present session thereof for an Act extending the time for completion of its Weyburn-Stirling branch, which it was authorized to construct by the Act 6-7 Ed. VII, Chapter 74, Section 3, (f) and (i) and extending Acts 1911, Chapter 59, Section 4, 1913, Chapter 96, Section 5, and 1916, Chapter 39, Section 3.

Dated at Montreal, this 10th day of March, A.D. 1920.

E. ALEXANDER,
Secretary.

Pringle, Thompson, Burgess & Cote,
Ottawa Agents.

### Department of the Naval Service.

### NOTICE OF SALE.

SEALED TENDERS addressed to the undersigned and endorsed on the envelope "Tender for the C. G. S. "Vigilant," will be received up to noon of Wednesday, the 14th day of April, 1920, for the purchase of the steamer "Vigilant," now lying at Collingwood, Ont.

This vessel is constructed of steel, is surface condensing, and has a maximum speed of 16 knots. Her length is 177', breadth 22.1', depth 13.2', gross tonnage 396.15, registered tonnage 242.66, and N.H.P. 65.

Full particulars and permission to inspect may be obtained on application to the undersigned or to the Commanding Officer of the ship at Collingwood, Ont.

G. J. DESBARATS.
Deputy Minister of the Naval Service, Ottawa, Ont.

March 10, 1920.

Unauthorized publication of this advertisement will not be paid for.


## Electric Railway Engineer Wanted.

Permanent position open for graduate engineer, preferably Canadian, familiar with Ontario. Intimate knowledge of interurban electrical railway equipment and operation essential. Apply Employes Relations Department, Hydro-Electric Power Commission of Ontario, 190 University Ave., Toronto.


### CANADIAN PACIFIC RAILWAY CO.

Notice to Shareholders.

The Thirty-ninth Annual General Meeting of the Shareholders of this Company, for the election of Directors to take the places of the retiring Directors and for the transaction of business generally, will be held on Wednesday, the fifth day of May next, at the principal office of the Company, at Montreal, at Twelve o'clock noon.

The Common Stock Transfer Books will be closed in Montreal, New York and London at 3 p.m. on Tuesday, the thirteenth day of April. The Preference Stock Books will be closed in London at the same time.

All books will be re-opened on Thursday, the sixth day of May.

By order of the Board,
ERNEST ALEXANDER,
Secretary.

Montreal, March 15th, 1920.

## Transportation Conventions in 1920

May—Association of Railway Claim Agents, Atlantic City, N.J.
May—International Railway Fuel Association, Chicago, Ill.
May 5-7—Air Brake Association, Chicago, Ill.
May 12—Railway Accounting Officers' Association, Washington, D.C.
May 25-28—Master Boiler Makers' Association, Minneapolis, Minn.
June—American Association of Freight Agents.
June 9-16—American Railroad Association's Mechanical Section, Atlantic City, N.J.
Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.
Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:
American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.
Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom 909 Shaughnessy Bldg., Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.
Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.
Niagara Frontier Summer Rate Committee, James Morrison, Montreal.
Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.
Railway Association of Canada—W. M. Neal, Montreal.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.
Transportation Club of Vancouver — H. W. Schofield, 556 Church St., Vancouver, B.C.

Rails, Cars, Locomotives
and Contractors' Equipment
IMMEDIATE SHIPMENT
**John J. Gartshore**
**58 Front Street West**
**TORONTO**

### CANADIAN PACIFIC RAILWAY COMPANY.

NOTICE is hereby given that the Canadian Pacific Railway Company will apply to the Parliament of Canada, at the next session thereof for an Act to amend Section 12 of the Canadian Pacific Railway Act, 1902, by changing the maximum number of Directors of the company from "fifteen" to "eighteen."

Dated at Montreal this eighteenth day of February, A.D., 1920.

E. ALEXANDER,
Secretary,
Canadian Pacific Railway Company.
PRINGLE, THOMPSON, BURGESS & COTE,
Ottawa Agents.

**It Pays**
to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better **Results**

**Every Day in the Week**

**Toronto-Vancouver**
**(Both Ways)**

Commencing SUNDAY, OCTOBER 5th, leaving
TORONTO
(UNION STATION)
9.15 P.M.
DAILY
MOST MODERN EQUIPMENT
Standard Sleeping, Dining, Tourist and Colonist Cars. First-class Day Coaches. Parlor Car through the Rockies.

Sunday, Monday, Wednesday, Friday
Canadian National all the way.
Tuesday, Thursday, Saturday
Via G.T.R., North Bay, Cochrane and Canadian National.

Further information from Canadian National Ticket Agents, or
GENERAL PASSENGER DEPARTMENT, TORONTO

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**Canadian National Railways**

# Report of the 27th Annual Meeting of the WINNIPEG ELECTRIC RAILWAY COMPANY Held March 10th 1920

The 27th annual meeting of the Winnipeg Electric Railway Company was held on March 10th, 1920, at the hour of 3 o'clock in the afternoon, in the office of the Company, in the City of Winnipeg.

Among the shareholders present were Messrs. William Whyte, William Harvey, vice-president and managing director of the Standard Trusts Co., representing the estate of the late Sir William Whyte; H. Howat, G. V. Hastings, Hugh Osler, F. Morton Morse and A. W. McLimont.

In the absence of the President, Sir Augustus Nanton, the Vice-President, A. W. McLimont, presided, and F. Morton Morse acted as secretary.

The report of the president and directors and the financial statements for the year ending December 31st, 1919, were presented to the meeting and adopted.

The following directors were re-elected for the ensuing year and until their successors are appointed: Sir Augustus Nanton, A. W. McLimont, F. Morton Morse, G. V. Hastings, Hugh Sutherland, J. D. McArthur, G. W. Allan, W. J. Bulman and W. R. Bawlf.

Messrs. Marwick, Mitchell & Co. were again appointed auditors.

After the President's report and the financial statements were considered and adopted, Mr. William Harvey took occasion to compliment the management and the directors upon the satisfactory showing made during the past year, when the obstacles and difficulties which the Company had to encounter were considered.

Mr. William Whyte corroborated what Mr. Harvey said, and pointed out that the management had the confidence and support of the shareholders, and that under the circumstances the showing made by the Company was gratifying.

The following are the officers of the Company for the ensuing year: Sir Augustus Nanton, president; A. W. McLimont, vice-president, and general manager; F. Morton Morse, secretary; J. S. Mackenzie, treasurer, and L. Palk, assistant secretary.

## REPORT OF THE PRESIDENT AND DIRECTORS.

For the Year Ended December 31st, 1919.

To the Shareholders:

Your Directors beg to submit a statement of the operations for the year ended the 31st December, 1919, as follows:

| | | |
|---|---|---|
| Gross earnings from Operations | | $4,284,479.11 |
| Operating Expenses, before charging Depreciation | | 3,019,495.11 |
| Net Operating Revenue | | 1,264,984.00 |
| Miscellaneous Income | | 58,639.40 |
| Income available to meet fixed charges, etc. | | 1,323,623.40 |
| From which the following deductions are made: | | |
| Interest Charges on Debenture Stock, Bonds, Gold, Notes, etc. | $696,489.94 | |
| Extinguishment of Discount on Securities | 37,672.04 | |
| City Percentage and Car License Taxes | 146,395.16 | |
| Taxes | 126,760.89 | |
| Miscellaneous Non-Operating expenses | 2,018.05 | |
| Other Income Deductions | 16,432.21 | |
| | | 1,025,768.29 |
| Net Income as shown on Accounts submitted herewith, excluding depreciation | | $ 297,855.11 |

The Gross Earnings for the year 1919 show an increase of $695,756.02 over the previous year. Notwithstanding the heavy increase in wages and other operating expenses, the net revenue shows an increase for the year of $8,071.03.

During the year 1919 many of the difficulties still prevailed that were encountered in 1918. The effect upon travel of the influenza epidemic continued well into the first months of 1919, but the most serious effect upon its revenue which your Company had to contend with was the strike of its employees, who went out in sympathy with other Trade Unions in the general suspension of all industries that took place in Winnipeg for forty-two days during May and June, during which time your railway department was unable to operate and the Gas and Electric Light and Power Departments were also severely affected. Your Motormen and Conductors, Shopmen, Trackmen, Electricians and allied crafts were granted a Board of Conciliation which awarded to them very large increases in wage, dating in some instances from May 1st, and in other instances from June 26th. Increased wages thus awarded, together with higher wages paid in all departments and increased cost of material, made a very large addition to operating costs.

On the other hand, your Directors are glad to be able to report that, effective October 9th, 1919, an interim order was secured from the Public Utilities Commission, permitting the Company to charge an increased fare, which resulted in sufficient additional revenue being obtained to largely compensate for the heavy uncontrollable increase in operation.

An appraisal of the physical properties of your Company is now under way in connection with the Company's application for increased fares now pending before the Commission, and when completed the appraisal will be made the basis for fixing a rate which will provide a reasonable return upon capital invested, over and above operating costs and fixed charges.

With the return of Peace, business is rapidly resuming its normal activity, and provision is being made by the Management to take advantage of the increased business which is looked forward to.

Respectfully submitted

(Sgd.) A. M. NANTON,
President.

### Winnipeg Electric Railway Company.

### INCOME ACCOUNT.

For Year Ending December 31st, 1919.

| | | |
|---|---|---|
| Gross Earnings from Operations | | $4,284,479.11 |
| Operating Expenses—Before charging Depreciation | | 3,019,495.11 |
| Net Operating Revenue | | 1,264,984.00 |
| Miscellaneous Income | | 58,639.40 |
| Gross Income | | 1,323,623.40 |
| Deduct: | | |
| Interest Charges on Debenture Stock, Bonds, Gold, Notes, etc. | $696,489.94 | |
| Extinguishment of Discount on Securities | 37,672.04 | |
| City Percentage and Car License | 146,395.16 | |
| Taxes | 126,760.89 | |
| Miscellaneous Non-operating Expenses | 2,018.05 | |
| Other Income Deductions | 16,432.21 | |
| | | 1,025,768.29 |
| Net Income—Before charging Depreciation | | 297,855.11 |
| Deduct: | | |
| Depreciation | | 201,050.00 |
| Net Income Transferred to Surplus | | 96,805.11 |
| Surplus Brought Forward from 1918 as Adjusted | | 1,242,367.60 |
| Net Income for Year Transferred | | 96,805.11 |
| | | 1,339,172.71 |
| Sinking Fund Appropriation | | 60,000.00 |
| Surplus Carried Forward | | $1,279,172.71 |

C.M.C.

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Barrett Industrial Paints include:

| | |
|---|---|
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All of these paints are moderate in price, extremely durable, and absolutely impervious to water, acids, alkalies, and fumes of all kinds.

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Barrett Nox-Aer-Leek overcomes this condition. It is a plastic cement of elastic bitumen, fused with non-drying oils and asbestos fiber. Applied to the exterior walls, it renders boiler-settings absolutely air-tight and moisture-proof.

You will find it sound economy to use Nox-Aer-Leek. Its small cost is repaid many times over by the saving in fuel expense.

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A popular-priced roll roofing of unusually high quality. Wears stubbornly under all conditions. Is giving uniform satisfaction on thousands of factories, and other steep-roofed buildings all over Canada.

Easy to lay and makes a roof that is durable and economical under hard service.

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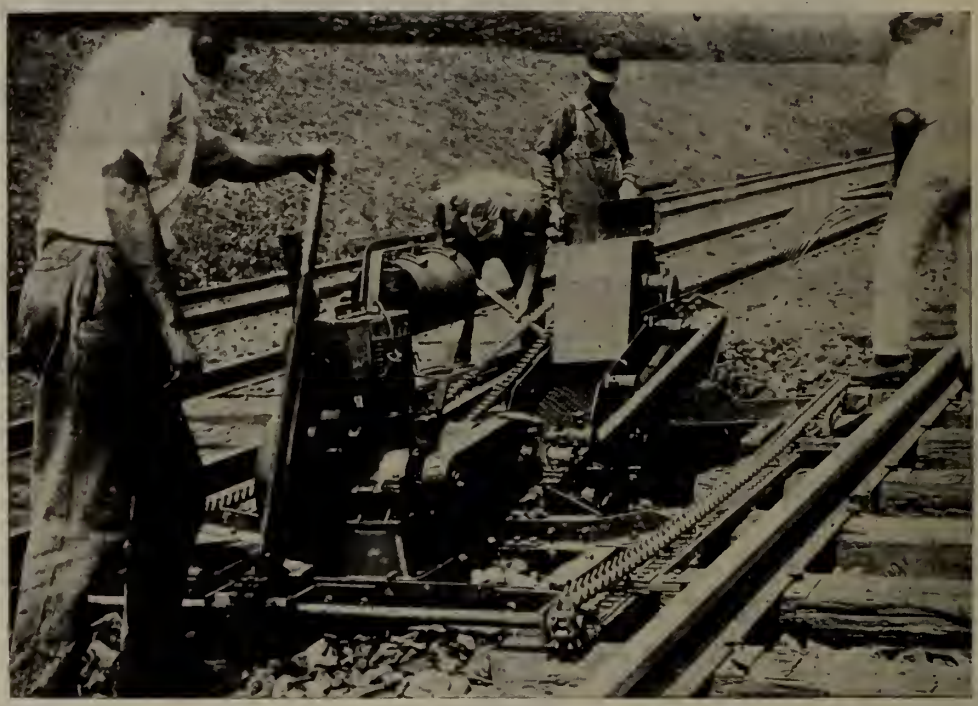

## The Pratt Ballast Cleaner

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Trains pass safely on either side.
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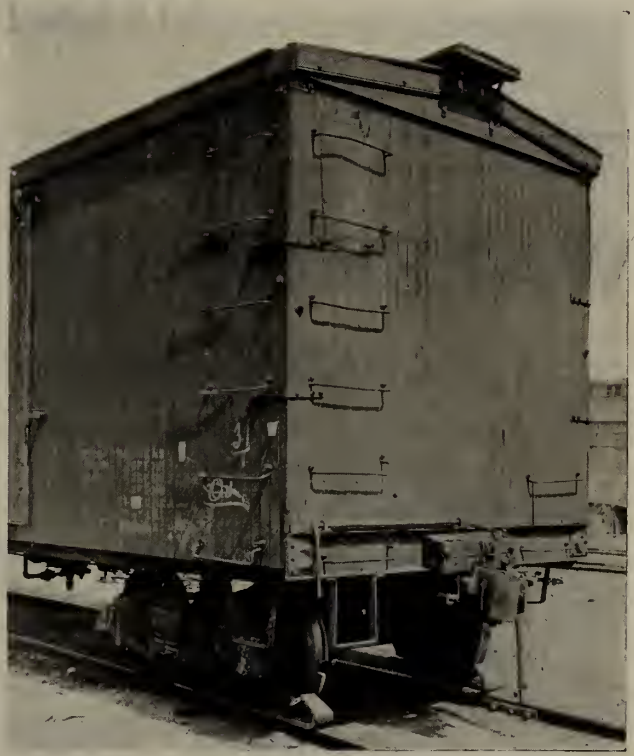

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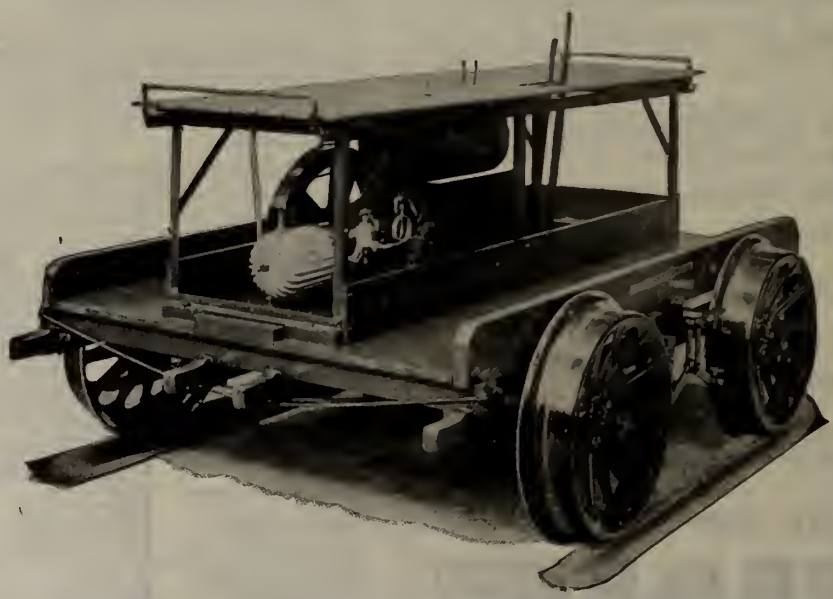

For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

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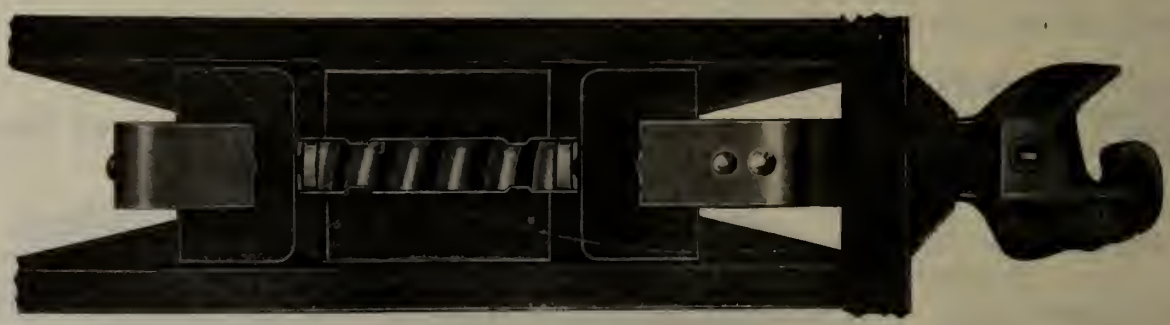

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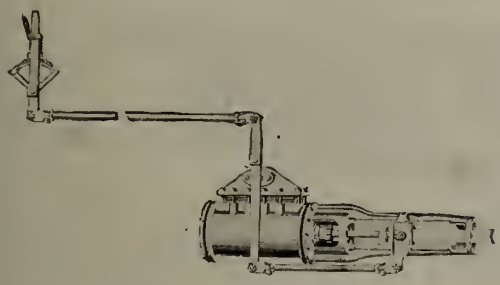

RAGONNET GEAR

Power reverse gear pistons do not travel back and forth in the cylinder.

A large part of their work and wear comes at a few points in the cylinders.

This is why special packing is needed for reverse gears.

Ragonay Packing does not wear the cylinders. It can not rust and freeze at one point in the cylinders.

When properly applied Ragonay Packing stays tight month after month.

Because it is specially constructed for the job it successfully prevents leakage by the piston.

KILL
LAST AD.

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Boiler and Machinery Repairs.

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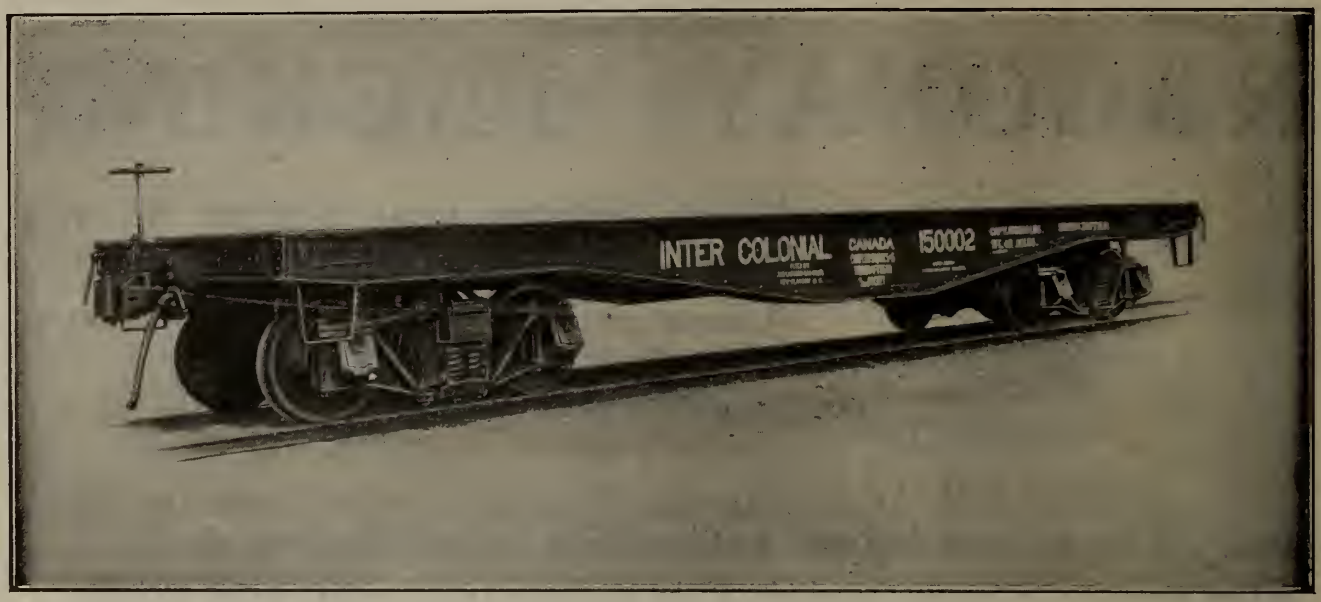


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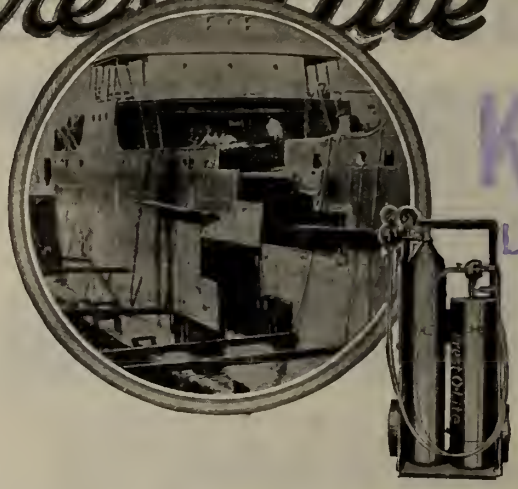

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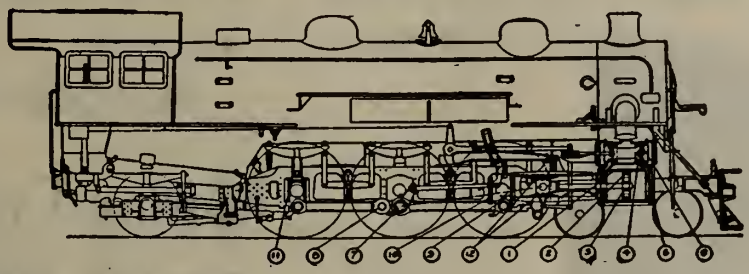
**12 OF THE PRINCIPAL PARTS OF A LOCOMOTIVE**

1 Cylinder Bushing
2 Cylinder Packing
3 Pistons
4 Valve Bushings
5 Valve Packing
6 Valve Bull Rings



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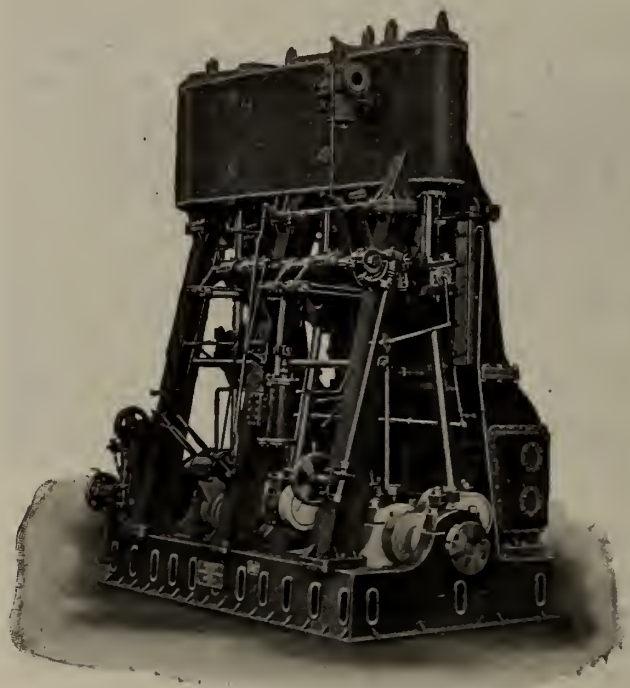

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Speed attained during trial trip 9½ knots

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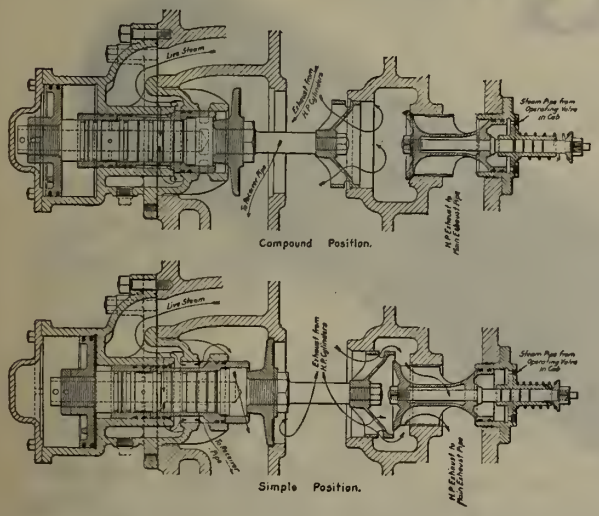


In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

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As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

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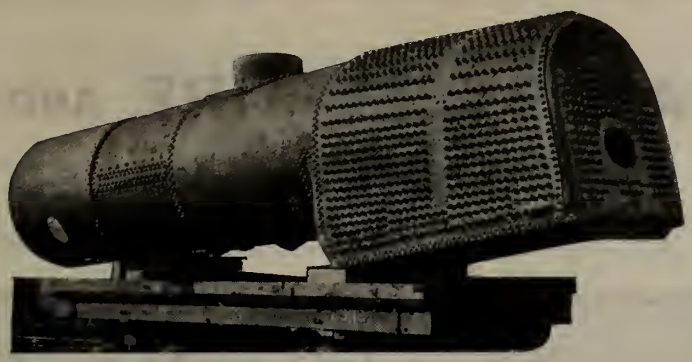

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That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

The Flexibility in the bolt serves to accommodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefulness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintainance.

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The Elesco Fire Tube Superheater reduces fuel consumption and increases a ship's capacity for cargo.

These facts are of vital importance because everybody knows that every foot of bunker space is one foot less for cargo.

Less bunker space is required on ships equipped with Elesco Fire Tube Superheaters because less fuel is burned.

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AUTOMATIC SAFETY SWITCH STANDS

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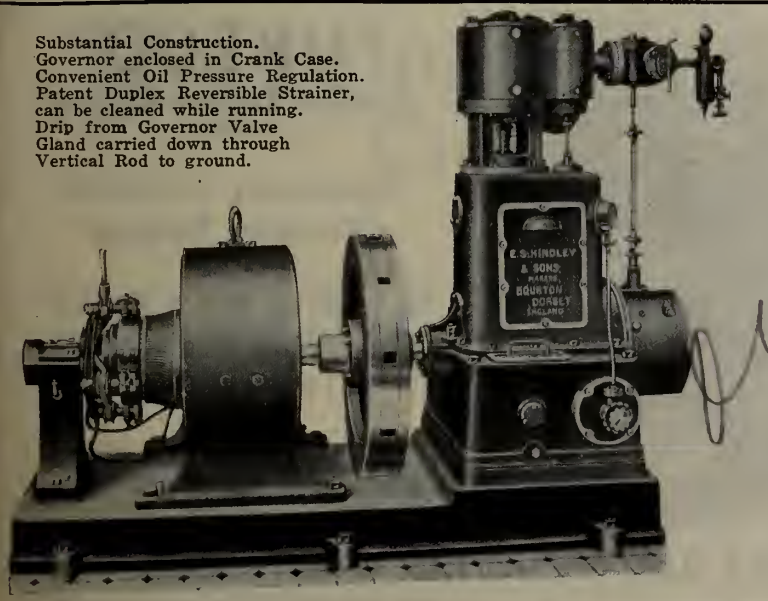
Drip from Governor Valve Gland carried down through Vertical Rod to ground.

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**STATEMENT**

Showing comparative cost using a Standard Nutlock now on the market and the HOLD TITE NUT LOCK as applied to the car body of a standard 40 top box car.

STATEMENT was prepared from the specifications of the body of a standard box car which include the truck.

**Summary**

| | |
|---|---|
| Total Cost using a Standard Nutlock on one Box Car Body | $3.36 |
| Total Cost using the HOLD TITE NUT LOCK on one Box Car Body | 1.51 |
| Difference in Cost (per car) in favor using the HOLD TITE NUT LOCK | $1.85 |

WHAT MORE? NOTE THE SIMPLICITY—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

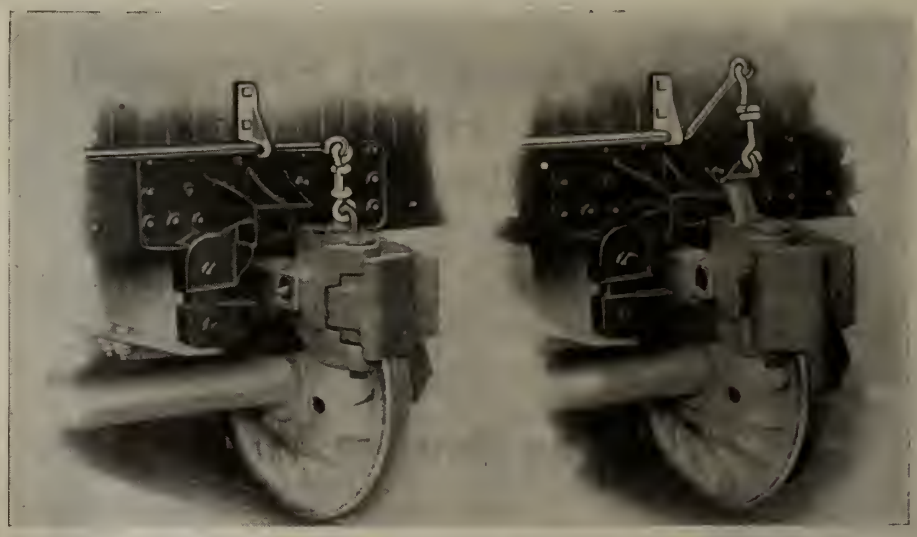
Why not save this Cost by always using the HOLD TITE NUT LOCK?

The cheapest device used; absolutely effective. Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

## Edward A. Robinson Co., Ltd.

228 Craig St. West Montreal

THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF



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(PATENTED)

Positively Prevents Penalty Defects

Requires No Change in Your Standard Hand-Rod

Complies with U.S.R.R. Administration Requirements

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Pipe Coverings for all classes of service.
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CARBONS of Superior Quality for Electric Welding and Cutting.

Carbon Specialties of All Shapes for Gas Welding.

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***PROTECTED BY PATENTS*** ***Grand Prize, San Francisco, 1915***

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**General Sales Office:**
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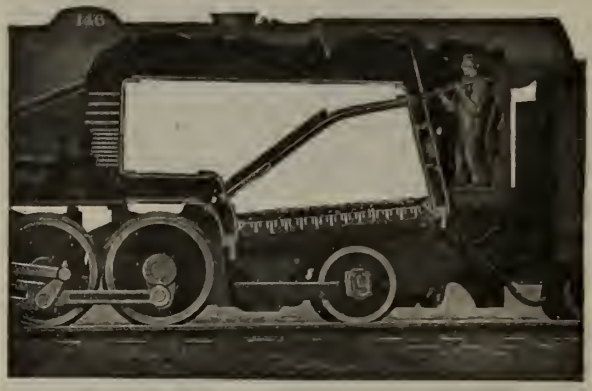
Lagonda Arch Tube Cleaner



Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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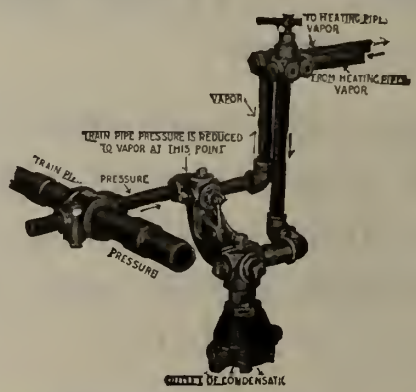


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OF
CAR HEATING

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Piston Rod and Valve Stem Packing for Super Heat and Saturated Steam.
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Pneumatic Tools. Tools that are guaranteed.
Ask for trials or tests and satisfy yourself.

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**INTERNATIONAL "RAPID" HOSE COUPLERS**
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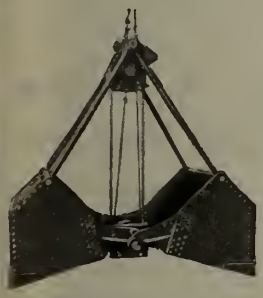

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will give a better service than is possible with the average bucket. There is a positive "bite" into the material—be it Coal, Sand, Gravel, Crushed Stone or Dirt—and every bucketful will measure up to the rated capacity of the bucket.

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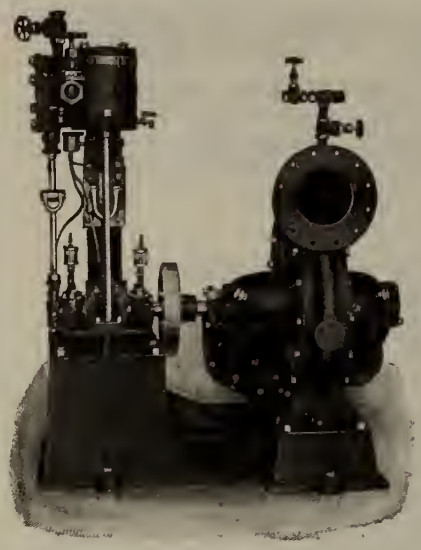

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Manufactured in Canada.

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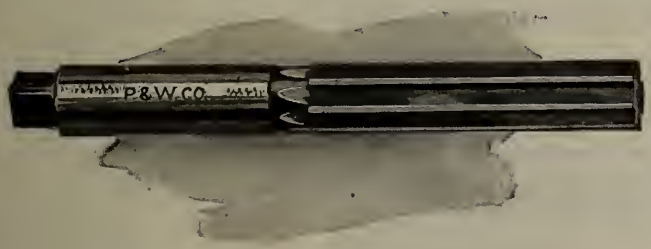


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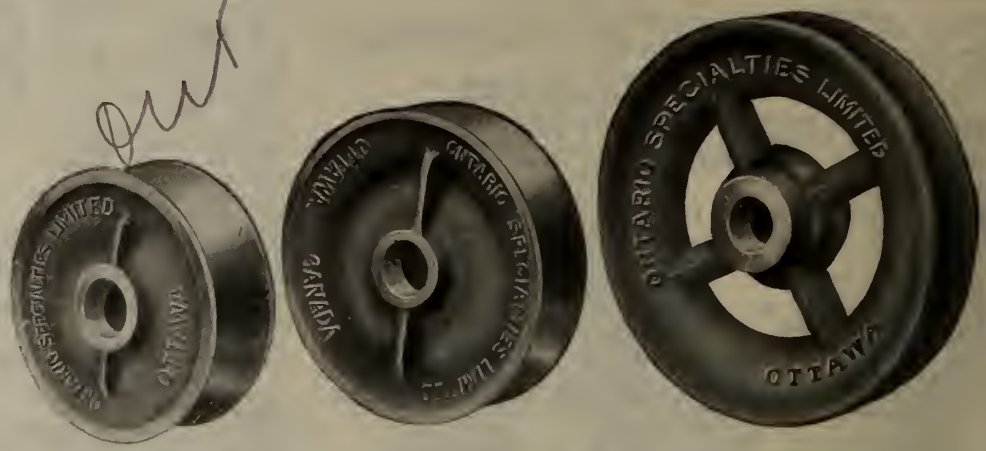


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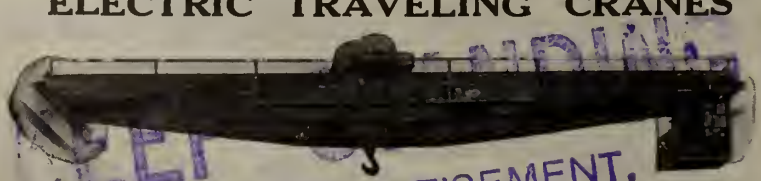

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**Walkerville, Ontario**

Locomotive Turntables Roofs Steel Buildings

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**Railway and Highway**
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Structural Iron Work of all Descriptions

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KILL
LAST AD.

# Davis-Bournonville

## Tube Welding Machines

EVERY one knows that a tube is stronger under bending and twisting stresses than a solid bar, weight for weight. The metal is placed at advantage to resist flexure and torsion, and is less likely to crystallize from vibration. Tubing is being used more and more in all kinds of machinery and apparatus in which the greatest strength and rigidity are required of a given amount of material. A tubular part saves weight, and when welded and fabricated in your own plant may cost less than the equivalent solid member. It is less likely to contain hidden defects or to fail through fatigue. Manufacturers of motor cars, trucks, parts and accessories cut time and cost by installing Davis - Bournonville oxy-acetylene compression welding machines and making their own tubing from commercial sheets or strips. The problem of maintaining stock is simplified as the user controls the production of diameters and gauges to meet his needs as they develop.

Complete tube welding and finishing plants designed, built and installed.

## Davis-Bournonville Company

*Manufacturers of oxy-acetylene welding and cutting torches, welding and cutting machines; acetylene generators, welding rods, fluxes and accessories.*

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**Factory at Niagara Falls, Ontario.**

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A Canadian Equipment made in a Canadian Factory by Canadian Workmen

Guaranteed Low Steam Consumption, Efficiency and Simplicity

## Taylor & Arnold Engineering Co., Ltd.

Montreal Toronto Winnipeg

# Canadian Railway AND Marine World

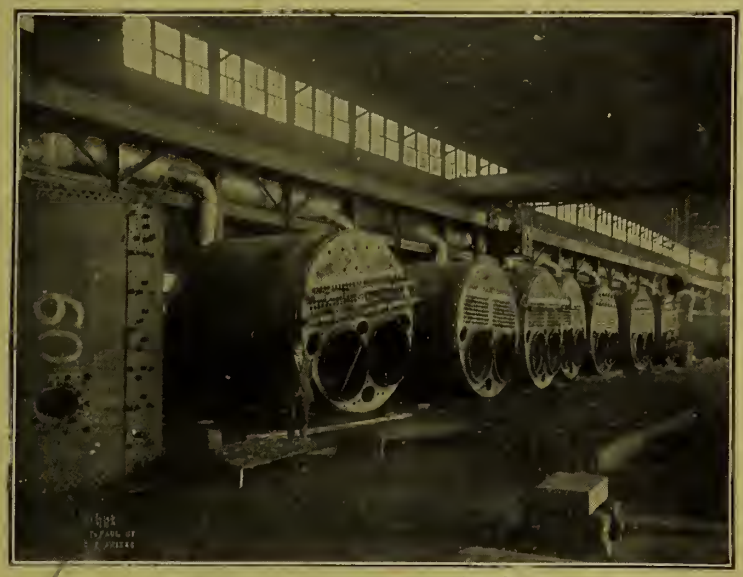
ESTABLISHED 1898.

Number 267 TORONTO, CANADA, MAY, 1920 Subscription Rates, Page 245



# MARINE BOILERS

**We build all sizes up to rail shipment limits**



A section of our Marine Boiler Shop.

Here is a big St. Catharines plant, strategically located with exceptional facilities and strictly modern equipment, that for 35 years has been giving unqualified satisfaction to its Marine Boiler customers. And we have the discernment to know that Workmanship and Service are our best salesmen.
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## ENGINEERING & MACHINE WORKS OF CANADA, Ltd.

**St. Catharines, Ontario**

Eastern Sales Offices: Birks Bldg., Montreal and Hall Machinery Co., Sherbrooke



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# Westinghouse

Westinghouse
Single Stage compressor

## Steam-Driven Compressors

Made in Single-Stage and Cross-Compound types.—They can be mounted on a post, a column or against a wall, or a stand is provided, if desired.

These compressors occupy little space, and stand up under hard usage.

Address nearest office for particulars.

Westinghouse Cross-Compound Compressor.

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WINNIPEG—158 Portage Ave. E. CALGARY—328 9th Ave. W.

**Canadian Westinghouse Company, Limited, Hamilton, Ontario**

TORONTO, Bank of Hamilton Bldg.
HALIFAX, 105 Hollis St.
CALGARY, Canada Life Bldg.
MONTREAL, 285 Beaver Hall Hill.
FT. WILLIAM, Cuthbertson Block.
VANCOUVER, Bank of Ottawa Bldg.
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CANADIAN WESTINGHOUSE

# KENNEDY PROPELLER WHEELS

Cut Shows Propeller 17 Ft. 6 Inches in Diameter, Weight 10 Tons. All Sizes, Sectional or Solid Iron, Semi-Steel or Steel.

**Marine Machinery Anchor-Windlasses Winches, etc.**

**Steel Castings, All Sizes**

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**ESTABLISHED 1860**

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**Products Include:**

Locomotive Cranes
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Dragline Buckets
Electric Hoists
Tramrail and Trolleys
Overhead Tr. Cranes
Pillar and Jib Cranes
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Your cranes and hoists are probably subjected to more severe service than any other equipment in your plant. For when a load is placed on the crane hook and the hoist line drawn taut there is often a check of several tons suddenly placed on the crane mechanism. These sudden strains are a severe test on any machinery. But the loads must be lifted, for that is the work of the crane or hoist.

Your investment in cranes and hoists pays biggest returns when the best quality material and workmanship are used. Our 40 years' experience on many types of cranes has taught us this. And so the Brownhoist trademark is a guarantee of the highest quality we can put into a Brownhoist product. With this goes a corresponding degree of dependability, of course.

Beneath the Brownhoist trademark opposite are listed some of the Brownhoist products. If you are interested in any of these or have any problems concerning them, we will gladly talk them over with you. Our engineering service is at your disposal.

# The Brown Hoisting Machinery Company

**40 Years in Crane Business** — **Cleveland, Ohio, U. S. A.**

Engineers and Manufacturers of Heavy Dock Machinery
Bridge Cranes, etc., as well as smaller Cranes and Hoists

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No Loose Weights
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May be applied to any existing platform scale.

The Fairbanks Dial Indicator reduces the weighing error and the cost of weighing.

Under present conditions, both of these are more important than ever before.

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*"Canada's Departmental House for Mechanical Goods"*

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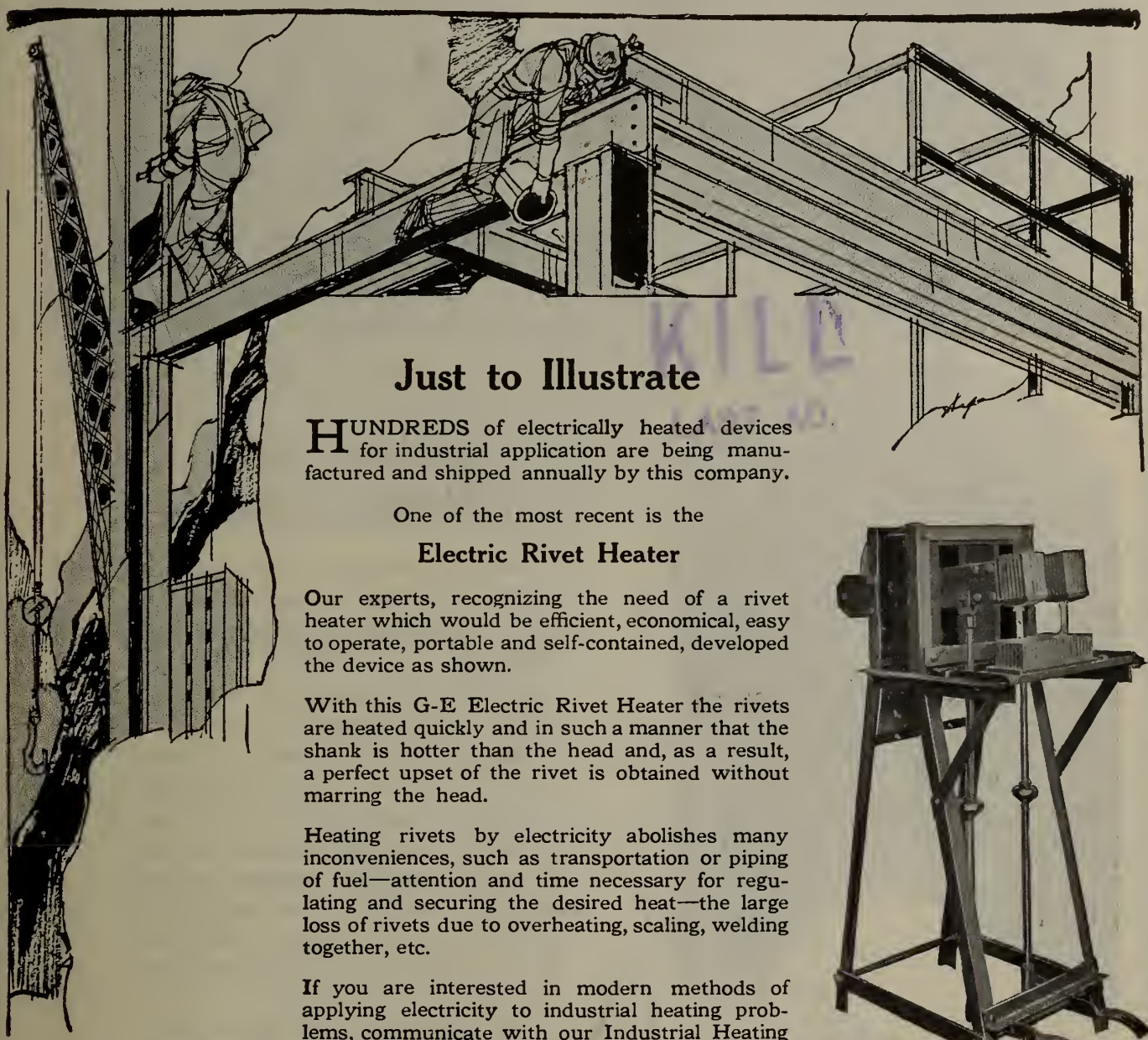
# *The fortunate fact that nature provided for the transformation of electric energy into heat is rapidly securing world-wide appreciation*



## Just to Illustrate

HUNDREDS of electrically heated devices for industrial application are being manufactured and shipped annually by this company.

One of the most recent is the

### Electric Rivet Heater

Our experts, recognizing the need of a rivet heater which would be efficient, economical, easy to operate, portable and self-contained, developed the device as shown.

With this G-E Electric Rivet Heater the rivets are heated quickly and in such a manner that the shank is hotter than the head and, as a result, a perfect upset of the rivet is obtained without marring the head.

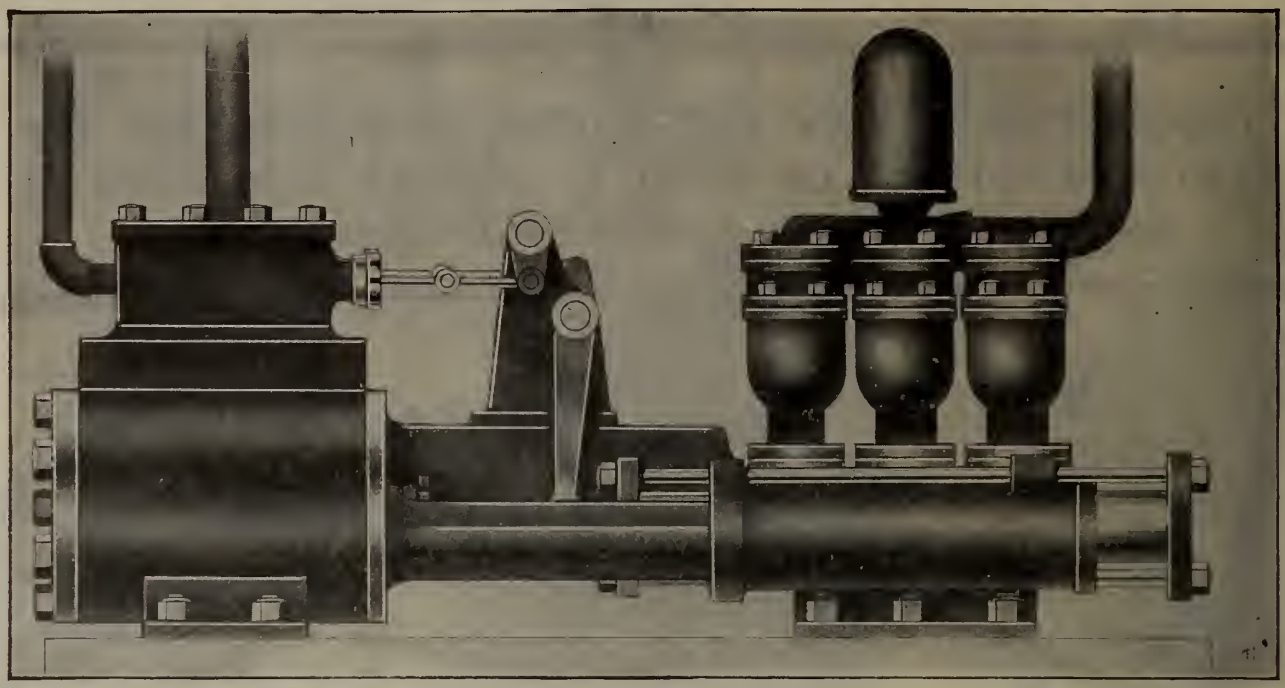
Heating rivets by electricity abolishes many inconveniences, such as transportation or piping of fuel—attention and time necessary for regulating and securing the desired heat—the large loss of rivets due to overheating, scaling, welding together, etc.

If you are interested in modern methods of applying electricity to industrial heating problems, communicate with our Industrial Heating Specialists. Their services are yours for the asking.

# Canadian General Electric Co., Limited

**Head Office** **TORONTO**

Branch Offices: Montreal, Quebec, Sherbrooke, Halifax, Sydney, St. John, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Nelson, Vancouver and Victoria.



# Garlock 1907 Combination Packing

Especially adapted for outside packed plungers of pumps handling extremely hot water. It is composed of Garlock Special Hydraulic, Diagonal and Cushion Centre Rings, which make it a strong and elastic packing, easy wearing on rods. There has been a long felt want for packing that would give satisfactory service on hot water rods and outside packed plungers, and this combination is the best known packing for that service. A trial will convince you.

*Write for catalog describing our many styles and combinations of packing.*

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| Winnipeg, Manitoba | Galt Building |
| Calgary, Alberta | 211 Eighth Avenue W. |
| St. John, N.B., | 23 Water St. |
| Vancouver, B.C. | 406 Pacific Coast Fire Bldg. |

# ECONOMY CAST STEEL DRAFT ARMS

## Strengthen the Center Sills

Those cars with weak construction along the line of draft can be made into revenue producers.

Economy Cast Steel Draft Arms will strengthen them along the line of draft so they will stand up in heavy service.

Our engineers have a fund of experience in draft arm work which is yours to profit by. This is the time to equip your cars with Economy Draft Arms.

AMERICAN STEEL FOUNDRIES

INTERNATIONAL EQUIPMENT CO., Ltd.

MONTREAL, QUE.

SAVE COAL by keeping the heating surfaces of your boilers free from scale. One-sixteenth of an inch of scale increases your coal consumption 10.8%.

SAVE WATER AND COAL by reducing the number of times it is necessary to open blow-off cocks to keep the concentration below the foaming point. You are blowing out one pound of coal each second a one and one-half inch blow-off cock is held open.

SAVE BOILER REPAIRS by reducing the amount of work made necessary by leaks caused by scale in your scale forming water districts, and unnecessary expansion and contraction caused by frequent washing and water changes in your foaming districts.

These savings can be effected by adopting the Dearborn System of Water Treatment. The cost is fifty per cent less than any other system now in use.

**Dearborn Chemical Company of Canada, Limited**

**General Offices and Factory, Toronto**

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# CARDWELL FRICTION DRAFT GEAR
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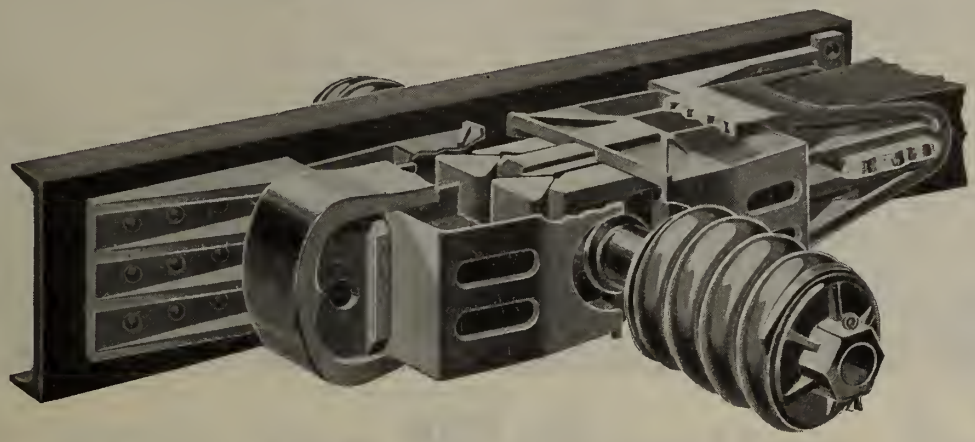

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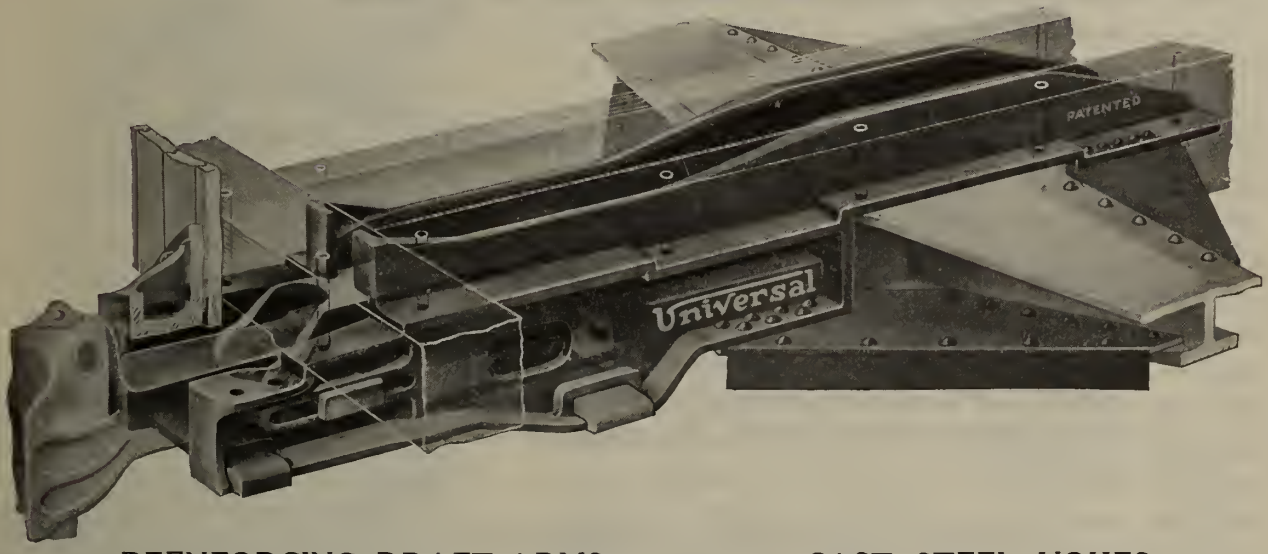


REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
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CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

## MADE IN CANADA

# WEBB. G. KRAUSER
**Transportation Building, MONTREAL**

# Yes! A Good Name Means Much!

KEEP STANDING LAST ADVERTISEMENT

The name *"Galena"* is synonymous with *"the Best"* in railway lubrication the world over. Galena Oils carry a good name—a reputation of worthiness and dependability. A reputation built on a half century's faithful and efficient performance.

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To the customer the Galena name is a guarantee of quality—an assurance of uniform goodness, of efficiency and economy. Galena Oils have always delivered a maximum mileage and demonstrated their ability to stand up under the most severe service conditions. The name *"Galena"* is a seal of safety and satisfaction.

## What the name "Galena" means to us

To this company the word *"Galena"* is a title that is guarded most jealously. A product must be worthy the name before it can carry it. Every care and precaution is taken that each Galena product is up to Galena specifications, a governing principle of this company from which the slightest deviation will not be permitted.

*The name "GALENA" is our Bond and your Security.*

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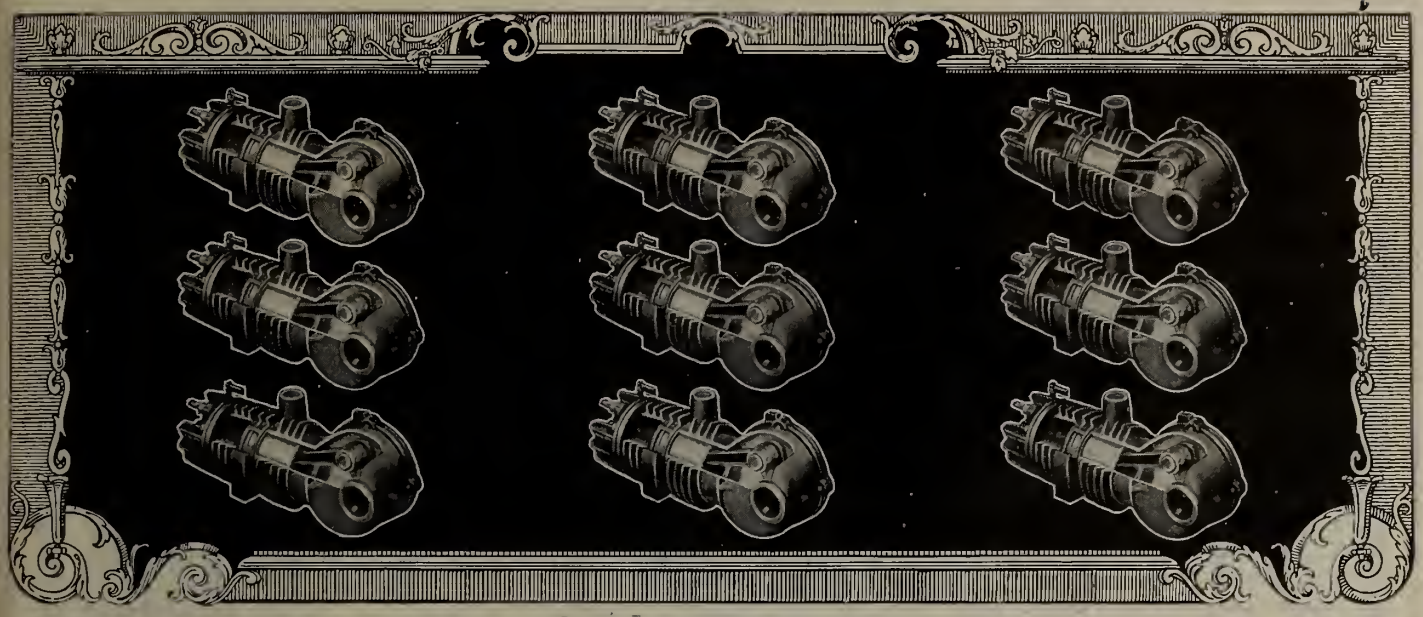
# Galena-Signal Oil Company

**Works - - - - - Toronto, Ont.**

**Stocks at Ft. William, Winnipeg, Vancouver.**

**Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg., Montreal.**



*Cutaway views of Class "E" Engines.*

# The urge for production is on at the new Mudge factory

*One of the new and latest type machines which assures accurate quantity production.*

¶ Hums now a high-pitched tune of industry in the wheels and shaftings of the new Mudge factory. ¶ The Urge for Production is On—on in fullest force and energy—where here—in recent weeks—millwrights have set for us the "last word" in machinery. ¶ Part now follows finished part to fill our well planned stock rooms—each, of its like pattern, a positive counterpart. ¶ Cylinders are bored, then ground, with mechanical exactness. ¶ Crank shafts, turned with precision, in taper—keyway—fitness. ¶ And all from machines where frequently are micrometered the special tools with which each one is fitted. ¶ So in their workshop—bright as day—airy, comfortable and clean—skilled and experienced workmen swiftly ply their trades. ¶ The Urge for Production is On.

## Mudge & Company

*Manufacturers—Railroad Equipment*

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4425 W. 16th Street, Chicago

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MAIN OFFICE
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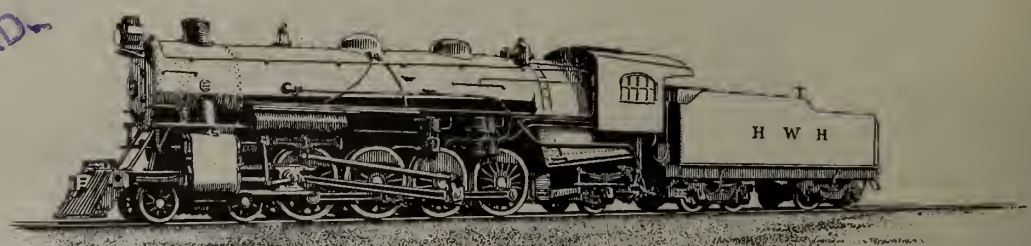
# YOU CAN DEPEND UPON OUR




# LOCOMOTIVE CASTINGS

BOLSTERS, CENTRE PLATES, CROSS TIES, DRIVING BOXES,
FOOT PLATES, KNEES, RUNNING BOARD BRACKETS,
SIDE BEARINGS, SIDE FRAMES, WHEEL CENTRES, E T C.

Correct to specification and true to pattern.

For all classes, types and sizes of Locomotive from the four-wheel Switcher to the largest Santa Fe, Mountain or Mallet. In open-hearth steel and ferro-alloys.

## CANADIAN STEEL FOUNDRIES LIMITED

TRANSPORTATION BUILDING

MONTREAL

"60 Vessels"

Canada's Commerce Carriers

"Total Tonnage 325,000"

# Canadian Government Merchant Marine, Limited

Now Afloat:

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| "CANADIAN PLANTER" | "CANADIAN PROSPECTOR" | "CANADIAN FARMER" |
| "CANADIAN INVENTOR" | "CANADIAN BEAVER" | "CANADIAN SEALER" |
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Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter. Monthly Freight Service to Australia and New Zealand from Vancouver.

For further information apply to any Canadian Railway Agent or

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Traffic Manager, Exp. & Imp. Dept.,
Canadian National Rys.,
Toronto, Ont.

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Room 704 Royal Bank Bldg.,
Toronto, Ont.

W. A. CUNNINGHAM,
Exp. & Imp. Freight Agt.,
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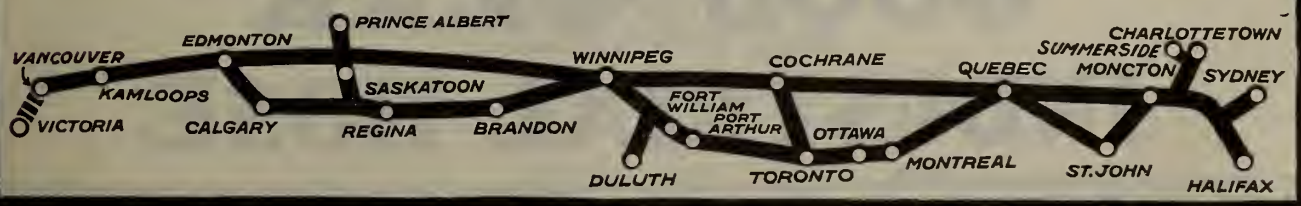
Montreal, Que.




# Canadian National Railways

# Tough as a Tire Tread—
# *This Hose Cover*

IN mines, quarries, tunnel work, shipyards and structural steel work, the tough cover on Goodyear Air Drill Hose and Goodyear Pneumatic Tool Hose has resulted in more work and a lowering of hose cost.

The life of hose in this work depends about 75% on the cover. Dragged over rock and ore and steel girders, tramped on and run over, it takes a tough and well-designed hose to give any length of service.

We have records of Goodyear Air Drill Hose in constant service for 18 months to 2 years.

The cover of white rubber is as tough as a tire tread. It is extra thick. It wears long, even under rough handling.

To balance such a good cover is a specially developed, oil-resisting inner tube; and fabric of extra strength.

So good are Goodyear Pneumatic Tool Hose and Goodyear Air Drill Hose that five-ply is found as satisfactory as six or seven-ply of old-style hose.

The thoroughness with which Goodyear Air Drill and Pneumatic Tool Hose has been designed and built, is paralleled in every kind of Goodyear Industrial Hose. The problems of each industry have been studied carefully. The solution to those problems has been worked out in the Goodyear laboratories. The Goodyear Industrial Hose man has a mighty interesting story to tell to industrial executives. No obligation on your part if you have him call. Just phone, wire or write the nearest branch.

**The Goodyear Tire & Rubber Co. of Canada, Limited**

*Branches—Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary Edmonton, Vancouver. Service Station Stocks in other Cities*

**GOODYEAR**
MADE IN CANADA
**INDUSTRIAL HOSE**

# COAL PUSHERS
## *On the*
## CANADIAN NATIONAL RAILWAYS

## Coal Pushers Save Steps and Long Reaches

Slope Sheet Coal Pushers are installed on 81 locomotives of the Canadian National Railways.

By the operation of a simple valve in the cab, the Coal Pusher brings forward within easy reach of the scoop a plentiful and continuous supply of coal. Thus the fireman is saved many steps and long reaches.

Over 1,200 Coal Pushers are in service on the lighter locomotives in Canada and the United States, including Mikado, Consolidation, Atlantic, Pacific, Prairie and Switcher types.

Send for descriptive literature.

*Over 1,200 of Our Coal Pushers in Service*

# Locomotive Stoker Company

Railway Exchange
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# Railway Equipment

Locomotive and Car Castings

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(Type "D" and "Penn.")

Cast Steel Truck Bolsters and Side Frames

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# Marine Equipment

Stern and Rudder Frames

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# DOMINION FOUNDRIES AND STEEL, LIMITED

HAMILTON, CANADA.

KEEPING bridges in commission is a vital concern of construction and maintenance engineers. The importance of positive protection is universally recognized.

Bridges coated with SUPERIOR GRAPHITE PAINT are proof against rust action, gases, oils and other agencies which cause rapid depreciation of structural steel and metal work—which often put improperly protected bridges out of commission.

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SUPERIOR GRAPHITE PAINT affords the additional advantage of low ultimate cost. It eliminates the need for frequent repainting and can be used without the hazard of experiment.

**Dominion Paint Works, Limited**

*Makers of*
*Degraco Paints, Varnishes, Enamels.*
WALKERVILLE, CANADA.
Montreal, Toronto, Winnipeg, Quebec, Vancouver, Sydney.

**SUPERIOR GRAPHITE PAINT**
**It Prevents Rust**

# GENERAL RAILWAY SIGNAL COMPANY
## OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

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Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track.

A-C. and D-C. Automatic Block Signals for Double Track

## Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signalling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

**Head Office and Works**
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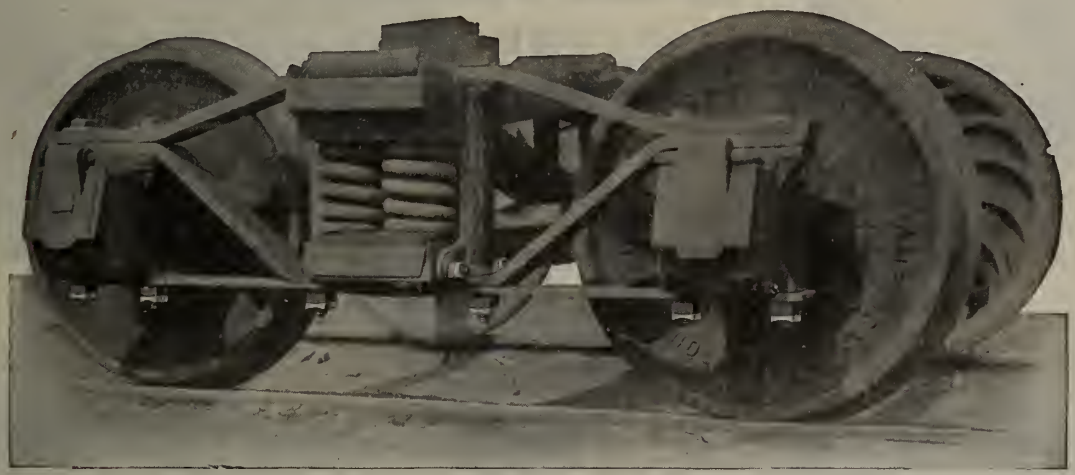
# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***



Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

## Boss Lock Nut Company
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**Winnipeg, Man.**

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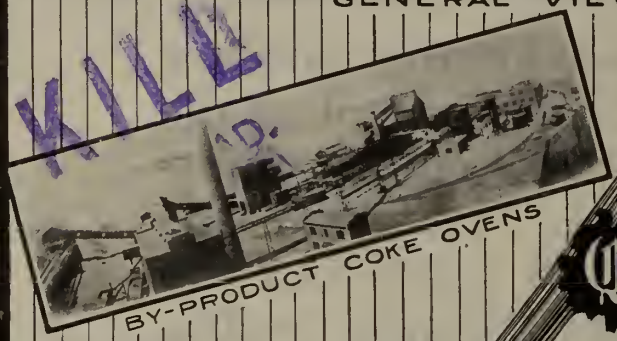
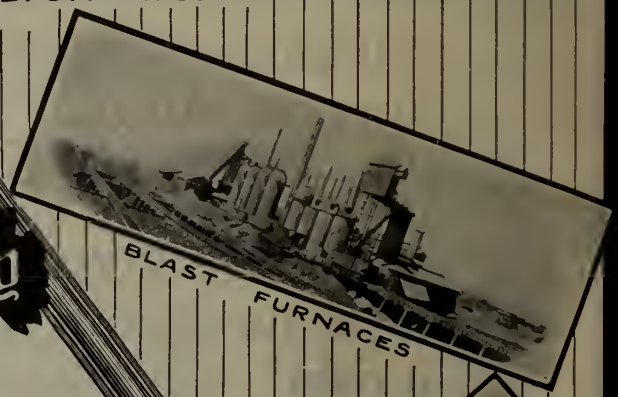


BY-PRODUCT COKE OVENS



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THE
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OF
CANADA
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HAMILTON—MONTREAL

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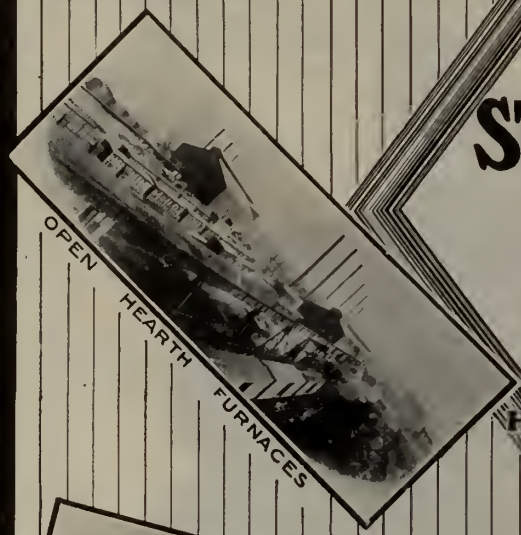

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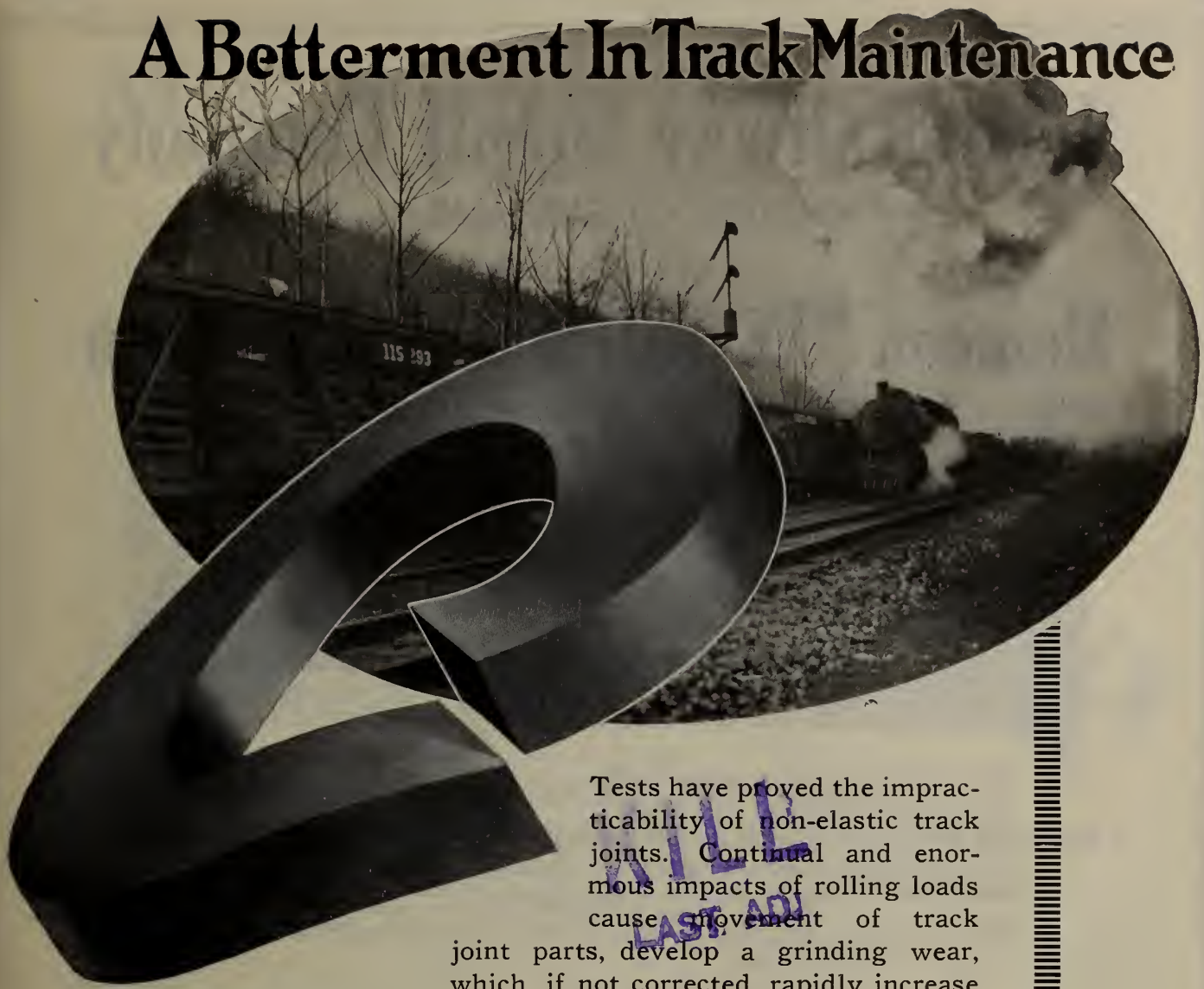
GENERAL VIEW OF NOTRE DAME WORKS
MONTREAL

# A Betterment In Track Maintenance



Tests have proved the impracticability of non-elastic track joints. Continual and enormous impacts of rolling loads cause movement of track joint parts, develop a grinding wear, which, if not corrected, rapidly increase and eventually result in looseness of bolted parts, low joints, battered rail ends and mutilated splice bars.

# HIPOWER NUT LOCKS

thru their maximum reactive pressure and their resilient properties retard this initial looseness of joint by compensating for the small but continual wear, thereby holding the splice bars in secure and uniform contact with the rail.

*Specify Hipower for your track maintenance.*

ESTABLISHED 1886

## The National Lock Washer Co.

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**New York** **Chicago** **Detroit**

# Joliet Railway Supply Company

NORTHWESTERN MALLEABLE IRON CO., Props.

## Huntoon "ECONOMY" Brake Beam

*With Reversible Strut*

KILL
EAST AD.

No nuts to get loose and fall off.
No threads to strip or rust off.
No danger of tension member becoming cut by wheel flange.
No pockets in heads or beam to collect or hold moisture.
No key slot in strut to cause breakages.

Heads are one pattern for each beam, which with the **Reversible** Strut means—

Only **one Beam** to carry in stock.
Only **one Strut** to carry in stock.
Only **one Head** to carry in stock.

The great popularity and wide success of the Huntoon **"Economy"** Beam has been due to its durability, and the above features, which make it a **Universal** beam.

Also manufacturers of—

Truss Rod Brake Beams.
The "Huntoon" Truck Bolster.
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"Joliet" Journal Boxes.
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## Smoke Jacks, Ventilators and Doors

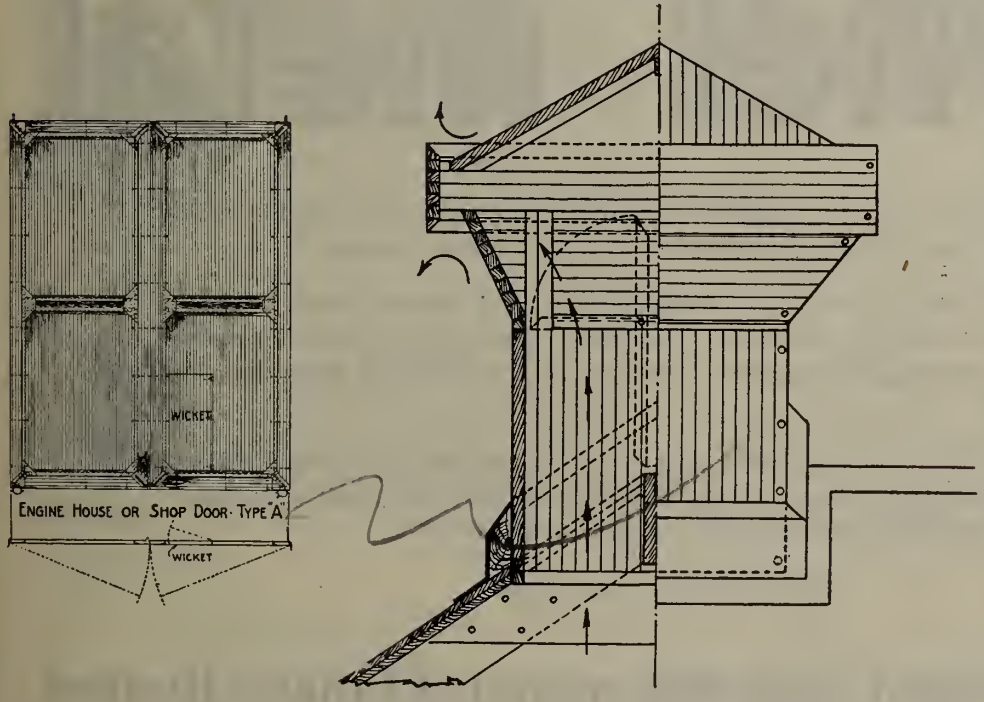
Another successful Mill Type Smoke Jack installation—C.P.R. West Toronto Yards

## IS THIS NOT PROOF ?

## 185 MILL TYPE SMOKE JACKS IN ONE ORDER !

**This is an order we have received from one of the largest railways in Canada, and only proves further that the Mill Type Smoke Jack is in a class by itself, and that it is only a question of time before it will be the standard on all railroads.**

WRITE FOR OUR BULLETIN COVERING ADDITIONAL MILL TYPE PRODUCTS WE MANUFACTURE




Ventilator for Flat Roof

**WILLIAMS & WILSON LIMITED**

SOLE MANUFACTURERS FOR CANADA

84 INSPECTOR STREET
MONTREAL, - QUE.

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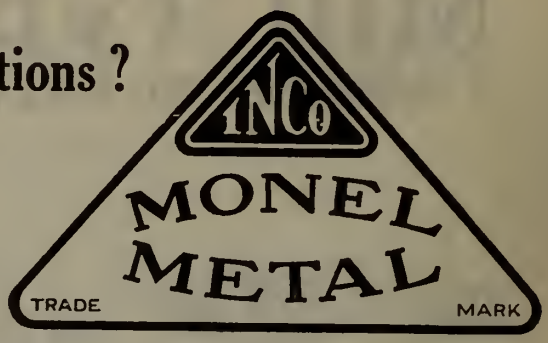


Do screens rust out?

Does salt water corrode metal?

Do valve discs and spindles corrode and leak?

Do pump rods pit and score and ruin packing?

Does superheated steam play hob with turbine blading?

***The answer to all these questions is YES—***
***UNLESS you use***

# MONEL METAL

Marine and Power Plant Engineers should investigate and specify this alloy, with a view to eliminating failures due to the above causes.

MONEL METAL has won favor in the British and United States Navies where the most reliable material is required. It has been adopted in most Marine and Power Plants where economical and efficient operation is demanded.

MONEL METAL is an alloy of nickel (67%) and copper (28%), and offers maximum resistance to superheated steam and to acid and alkali solutions. It has the strength of steel, and takes a high nickel finish.

*We invite your enquiries.*

**The International Nickel Company of Canada, Limited**

HARBOR COMMISSION BUILDING
Toronto, Ont.

# Barrett Roofings, Cements Industrial Paints etc.

Back of these products stands the reputation of Canada's oldest and largest manufacturer of Roofings and Industrial Paints. You will find them in every case exactly as represented.

## Everjet Industrial Paints

High-grade black carbon paints, developed by our chemists to meet the requirements of the special purposes for which they are intended. We manufacture no products which we can more thoroughly recommend.

Probably no other paints on the Canadian market enjoy such great popularity and fill so many demands in the industrial world as these "Proven Protective Paints." They are used extensively by railroads and large manufacturing companies throughout the Dominion.

Everjet Boiler Paint — Everjet Dip Paint — Everjet Smoke Stack Paint
Everjet Bridge Paint — Everjet Penstock Paint — Everjet Machinery Paint

These paints are all exceptionally durable and absolutely waterproof and effectively resist the corrosive action of acids, alkalies, and fumes of all kinds.

Put up in 1, 5 and 10 gallon cans, half barrels. Our Service Department, composed of experienced chemists, will be glad to help you solve your paint-problem.

## Nox-Aer-Leek Boiler Setting Cement

A tough, elastic, adhesive cement for stopping air leaks in brick boiler-settings. Pays for itself many times in reduced fuel bills and increased boiler efficiency.

Nox-Aer-Leek is composed of elastic bitumen, fused with non-drying oils and asbestos fiber. Low in cost, durable, and wonderfully effective.

Used on exterior walls only; on old or new boiler-settings.

Shipped in barrels (about 550 pounds) and half barrels (about 300 pounds).

## Everlastic "Rubber" Roofing

The biggest value in roll-roofing on the Canadian market. Made of the best grade waterproofing materials, low in cost, easy to lay, staunch and durable.

More than a million rolls of Everlastic "Rubber" Roofing were sold last year throughout the world.

Made in three weights—light (1-ply), medium (2-ply), heavy (3-ply). Rolls contain 108 Sq. Ft. Nails and cement with each roll.

## Everlastic Liquid Roofing Cement

Unequalled for re-surfacing worn-out felt and "Rubber" roofs. Has the consistency of thick molasses; is easy to apply and dries quickly into a hard, elastic, wonderfully durable coat. Proof against moisture, acids, alkalies and fumes. Has same base as Barrett Specification Pitch, which is famous for its waterproofing qualities.

Comes ready for use in package ranging from 1 pint tins to 40 gallon barrels.

## Elastigum Plastic Patching Cement

For patching holes and leaks in all kinds of roofs, repairing flashings, relining gutters, etc. Known as the "Plastic Cement of a thousand uses."

Elastigum is tough, elastic, plastic, waterproof, acid-proof and alkali-proof. Requires no heating or mixing. Very inexpensive.

Put up in 1, 5, 25 and 100 lb. packages; ½ barrels and barrels.

*Descriptive booklets regarding any of these products sent free on request. Address nearest office.*

ST. JOHN, N.B., HALIFAX, N.S.
SYDNEY, N.S.

The Barrett Company LIMITED.

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WINNIPEG VANCOUVER

# AVOID DELAYS

*with*

# Q&C SKID SHOES

For minor breakdowns due to defective trucks Q & C Skid Shoes will be found invaluable. The delay of sending for wrecker is avoided and chaining is unnecessary. Q & C Skid Shoes will slide wherever a wheel will roll and will pass any switch, frog or crossing and around all curves. Used as standard equipment on locomotives and in cabooses.

*MADE IN CANADA*

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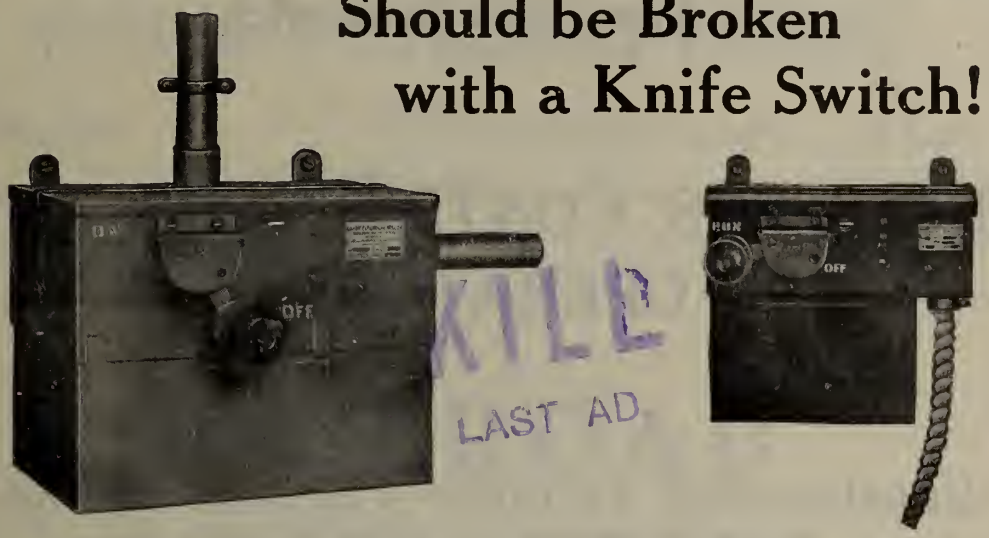
CONDIT

# No Power Circuit Should be Broken with a Knife Switch!




CONDIT Type N-2 Oil Switch has a maximum capacity of 60 amperes and 600 volts and is ideal for protecting small lighting and power circuits. It is single throw and made either two, three or four pole, non-automatic or automatic with under-voltage release and overload protective fuses.
Made with knock-outs for Conduit Connections.

CONDIT Type 1 Oil Starters are of oil switch construction and are equipped with enclosed fuses for overload and short circuit protection. Special design allows fuses of approximately full load running current to be used, *which will not blow during starting period.* Equipped with low voltage release. Handle cannot be left in starting position.

*Our nearest House can supply you*

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MONTREAL HALIFAX QUEBEC OTTAWA TORONTO
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CONDIT: *the Synonym of Safety in Electrical Protective Equipment*

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**St. John, New Brunswick**

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Constructing Terminal Harbour Works in Courtenay Bay, St. John, New Brunswick, consisting of Breakwater, Dredging, and Deep Water Piers

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# RAILROAD CONTRACTORS

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NOW OPERATING:

Construction of Dry Dock & Shipyards at Halifax, N.S.

Construction of Dry Dock, Shipyards & Breakwater at Courtenay Bay, East St. John, N.B.

Construction of Highway for N.S. Government

OFFICES AT

## HALIFAX, N. S. & EAST ST. JOHN, N. B.

# The BERTRAM Page

## MACHINE TOOLS

## 18-inch Crank Slotting Machine

A. C. Motor Drive Through Speed Box

10 H.P. Motor—1,000 R.P.M.

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## The New Weir Evaporator

WEIR PATENT
CONTINUOUS BRINING &
AUTOMATIC FEEDING.

## Embodies Three Important Improvements

1. The Patent Brine Ejector.
2. The Automatic Feed Regulator.
3. The Special Tube Coupling.

These devices ensure uniform efficiency, simplify working, and lessen costs of upkeep.

They are fully described and illustrated in our New Evaporator Booklet—Send for it.

## G. & J. Weir, Limited, Scotland

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Contractors to the British Admiralty and War Office and to the Governments of Australia, Canada, Egypt, India, New Zealand, South Africa, Argentine, Belgium, Brazil, Chili, Denmark, France, Greece, Holland, Italy, Japan, Norway, Portugal, Russia, Siam, Spain, Sweden, United States, Etc., Etc., also to the leading Steamship Lines and principal municipalities throughout the world.

MADE IN CANADA

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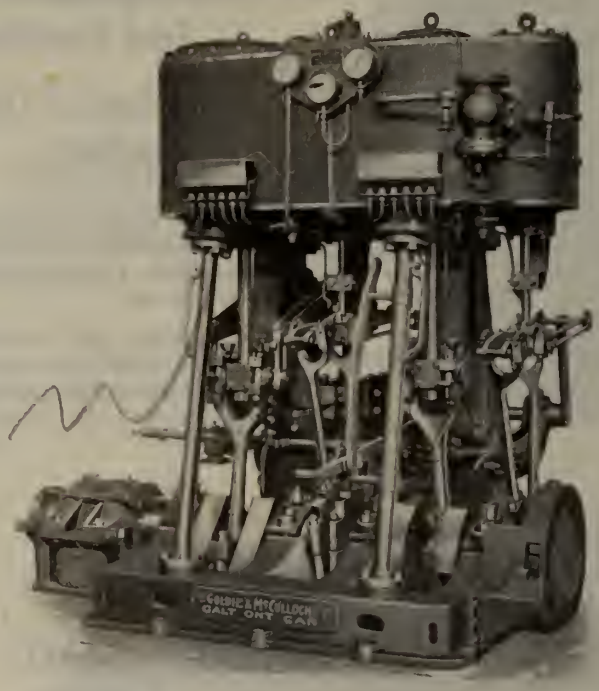
G. & McC. Co. Sectional Water-Tube Boilers in course of erection.



G. & McC. Co. Compound Marine Engine.

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Horizontal and Vertical Steam Engines, Steam Turbines.

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Horizontal and Vertical Land and Marine Boiler Feed Pumps.

REES ROTURBO Patent Pressure Chamber Centrifugal Pumps, Rotary Jet Condensers and Air Pumps.

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# The Best Ballast Car Ever Built

**Canadian National Railways Standard Ballast Car**

**For Ballasting Center Dump**

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**For Coal or General Service**

**Built of Materials Obtained in Canada**

**Built to any size or Capacity**

*Write for Booklet No. 19 for further information*

—DESIGNED, PATENTED AND BUILT IN CANADA—

## The HART-OTIS CAR CO., Limited, MONTREAL

No matter what your **LIFTING REQUIREMENTS** may be, there is, in the wide

## INDUSTRIAL CRANE

Line, the exact type and size to best fill your need.

**Branch:**
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# "Golden Glow" Headlights Are Guaranteed

"Golden Glow" Locomotive Headlights equipped with 14-inch "Golden Glow" reflectors, 250 watt, 32 volt standard locomotive headlight lamps, properly focussed, and the reflector wiped clean, are guaranteed to meet all the requirements of the Interstate Commerce Commission.

# KEYSTONE LOCOMOTIVE HEADLIGHT EQUIPMENT

## "GOLDEN GLOW" HEADLIGHTS

"Golden Glow" Locomotive Headlights are fitted with that same greenish glass reflector which has been used so extensively in the electric railway field. This reflector projects a soft golden yellow light that is not nearly so blinding and is a great deal more penetrating in misty weather than a brilliant white light.

Write for Bulletin 155.

## TURBO-GENERATORS

The "Keystone" Turbo-Generator is remarkably simple, compact and efficient. It gives great satisfaction in operation with a very low maintenance cost in labor and repair parts.

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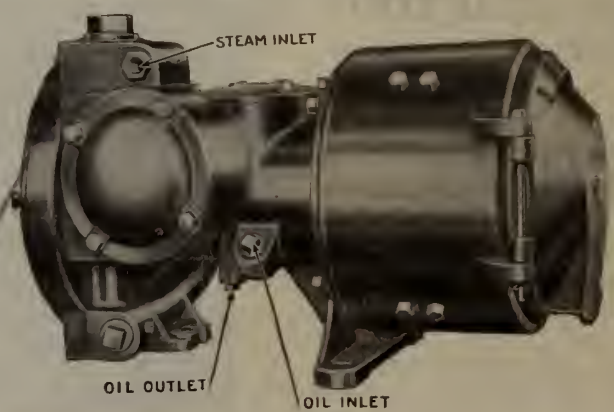


## HEADLIGHT SWITCHES

"Keystone" Locomotive Headlight Switches are rugged and simple in construction. They offer a satisfactory, durable and easy means for controlling "Golden Glow" or any other type of electric headlight.

Their simplicity makes inspection and repair a matter of little effort, which has a pronounced effect on their maintenance cost.

Write for data sheets.

**Electric Service Supplies Co.**

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United States Torpedo Boat Destroyer, **"Reid"**
Built in World's Record Time, 45½ working days by the
Bethlehem Shipbuilding Corporation

The shafting for the **"Reid"** and other U. S. Destroyers was completely finished, ready for installation, by

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**Limited**

**Brantford - Canada**

ROLLING MILL EQUIPMENT

RUBBER WORKING MACHINERY

HERRINGBONE GEAR DRIVES

HEAVY OIL ENGINES MARINE AND STATIONARY TYPE

DOMINION STEEL PRODUCTS CO. LIMITED
DOMINION
BRANTFORD CANADA
REGISTERED TRADE MARK

SHAFTING

LINE, DRIVE

AND

SHIP

CHAPTER 5.

# This One Thing We Do

With capital to finance a number of publications and with an organization that has no superior in Canada, we have yet resisted resolutely, every temptation to engage in publishing by wholesale.

For 23 years we have concentrated the efforts of a trained staff on just *one* publication:

CANADIAN RAILWAY AND MARINE WORLD

From the chief executive down to the humblest worker, there is just one duty, one task, one ambition: To make this *one* monthly magazine as nearly perfect as lies in our single purposed power.

To us, the publication of a technical magazine, that wields so vast an influence in so vital a field as the land and water transportation of Canada, involves a responsibility too great to permit us to allow a moment of our thought or an ounce of our strength to be divested into any other channel.

Every one of us is proud of his and her part in making this one magazine the recognized authority, the acknowledged leader, the valued guide and the text-book of Canadian transportation, in all its varied phases.

And we have been richly rewarded for our intensive devotion to the single "cause" of Canadian transportation, by a universally recognized supremacy in this field; and by the 100% good-will of the big capable far-seeing men who have made, and are making, a Greater Canada.

## CANADIAN RAILWAY AND MARINE WORLD

**Toronto** *Member of* **Canada**

*Audit Bureau of Circulations, Associated Business Papers, Canadian National Newspapers and Periodicals Association, Canadian Press Association*

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The Perfect Harness

## DRAFT ATTACHMENT

Furnishes the strongest connection between the draft gear and car underframe.

Service buffing and pulling shocks are transmitted to the car frame at a number of points, preventing distortion of sills, breakage of friction barrels or springs, and consequent necessity for repairs.

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**New York** **Works at Rochester** **Chicago**

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**BRASS**
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175 lbs. steam working pressure

**VALVES**
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GLOBE VALVE.

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"'Van Dorn' Geared" means up-to-the minute in dependability and long-wearing qualities.

"Van Dorn" gears and pinions have the recommendation of thousands of the largest and most representative gear users.

——And the service they render has justified their choice.

**Why not let us apply our expert gear knowledge to the filling of your requirements? Write**

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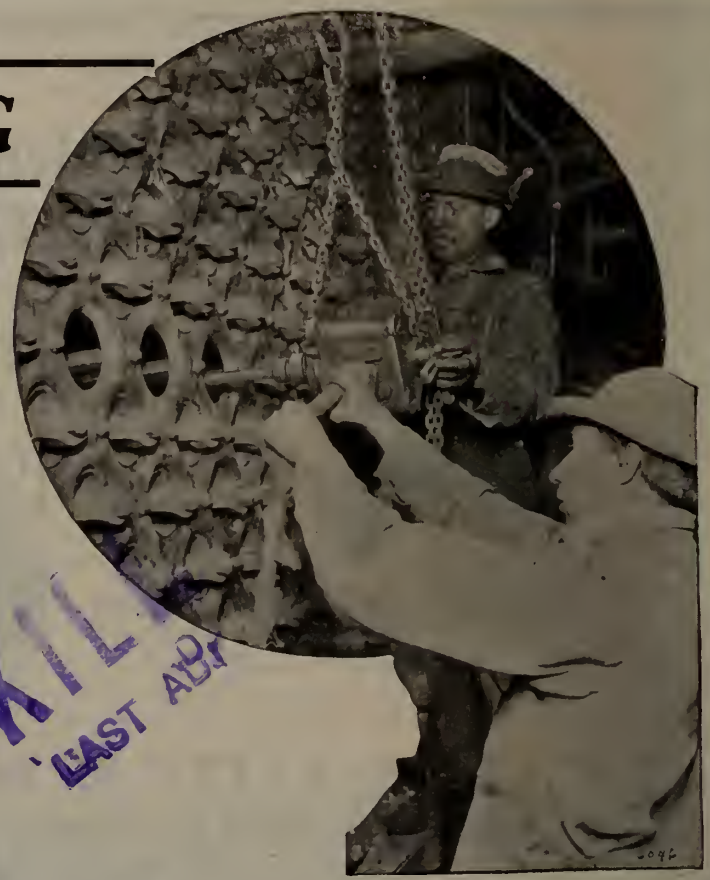
is only one of many odd jobs around the shipyard or railroad shop that can be handled to better advantage by using "LITTLE DAVID" Air Tools.

The "LITTLE DAVID" family comprises drills, wood borers, riveting, chipping, caulking and scaling hammers, sand-rammers and hoists in a wide range of sizes for all classes of service.

Bulletins describing these "made in Canada" tools are yours for a postcard.

**Canadian Ingersoll-Rand Co., Limited**

Sydney, Sherbrooke, Montreal, Toronto, Cobalt, Winnipeg, Nelson, Vancouver.



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Associated with YARROW & CO. LTD., Glasgow

SHIPBUILDERS SHIP REPAIRERS ENGINEERS

Builders of fast shallow draft vessels propelled by sternwheel or Yarrow Patent system of propellers working in tunnels. Vessels shipped in packing cases ready for re-erection.

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| Marine Railway, 315 ft. long, 3000 tons D.W. Capacity. | Esquimalt Dry Dock, 480 ft. x 65 ft. |
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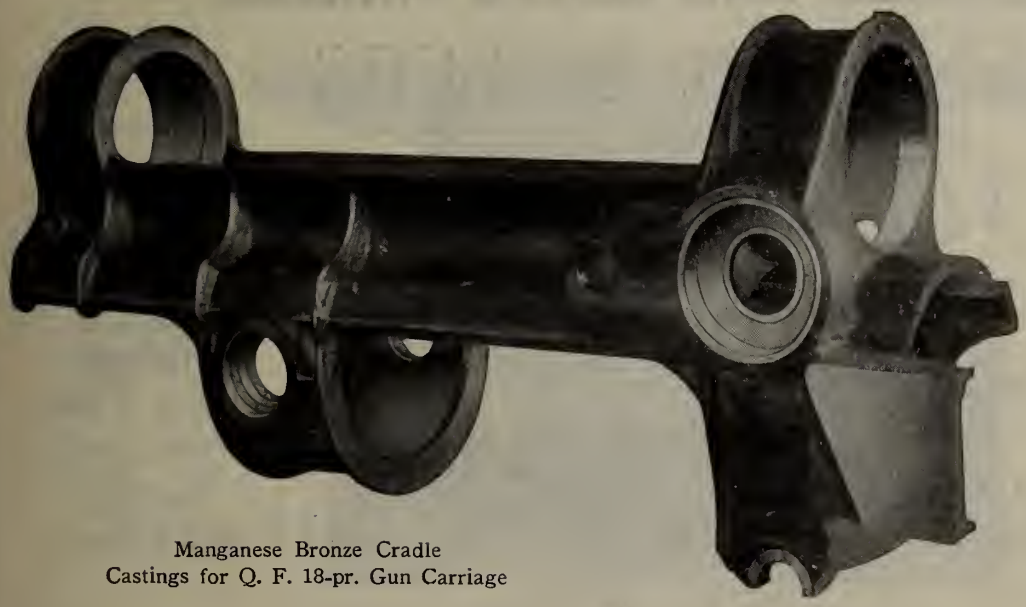

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# Canadian Railway and Marine World

May, 1920

## The Minister of Railways' Annual Statement on Canadian National Railways Etc.

Hon. J. D. Reid, in speaking in the House of Commons, Mar. 30, said: In presenting the Railways and Canals Department estimate for the forthcoming fiscal year, I desire to place before the house a statement dealing with the operation of the Canadian National Rys for the calendar year 1919. The Canadian Northern was merged with the government railways in Dec., 1918, so that we are now in a position to review one completed year of operation under non-political and purely business auspices. The national system, with which we are now dealing, comprises the following lines:

| | | |
|---|---|---|
| Canadian Northern system | 9,479 | miles |
| Intercolonial | 1,592 | " |
| Prince Edward Island | 278 | " |
| National Transcontinental | 2,002 | " |
| Branch lines | 376 | " |
| Total | 13,727 | " |

**Operating Results**—It is unfortunate that abnormal economic conditions, the disturbing effects of which are world-wide, and beyond the control of any railway management, whether a public or private, should have prevented a better showing for the first year of large scale national operation, but the result when closely analysed, is not without hope for the future of government ownership and operation.

Briefly stated, the national system, comprising the Canadian Northern, the Intercolonial, and the Transcontinental, earned $94,000,000 during the year, or almost $12,000,000 more than during 1918. But even with the $12,000,000 increased earnings, the operating loss is $14,000,000, made up as follows: Canadian Northern, $6,500,000; Intercolonial and Transcontinental, $7,500,000.

The explanation of this is that during the year the operating expenses advanced from $84,000,000 to practically $108,000,000, an adverse increase of nearly $24,000,000. For the most part, this was due to advances in wages under the McAdoo award and supplements thereto, which were not offset by corresponding increases in rates. There was no rate increase during 1919. Given the same operating costs as 1918, the earnings for 1919 would have taken care of them and provided in addition $9,000,000 towards meeting fixed charges. These interest obligations in themselves amount to $19,000,000, and, singularly enough, a comparison of the payroll of the national system for the two years shows an increase of practically $19,000,000 in wages alone during 1919.

The operating loss of $14,000,000, and the consequent failure to provide for fixed charges, is really a reflection of conditions which obtain all over the world as a result of the war. Comparisons are seldom conclusive, but sometimes they are illuminating, and, in passing, I am reminded that in the United States, where economic conditions so closely approximate our own, the lines taken over by the government for operation during the war are reported to have failed in two years by over $700,000,000 to earn the net revenue which the government guaranteed them when taken over by the U.S. Railroad Administration.

**Passenger and Freight Traffic.**—Although the freight earnings of the National system show an increase in excess of $2,500,000 for the year, there was a falling off in freight handled amounting to 3,000,000 tons. This was due in part to the stoppage of munition shipments on cessation of hostilities, and four-fifths of the decreased tonnage was on the old Canadian Government system, which formerly handled so much war business. There was a noticeable falling off also in westbound business, due to unsettled conditions in the period of transition from war to peace. That there was an increase in freight earnings at all is attributable to the increased rates put into effect during 1918. Had the volume of freight handled during the preceding year been maintained, the increased freight earnings would have amounted to $7,500,000 instead of $2,500,000. Thus the return of the world to a peace basis may be said to have cost the national system $5,000,000 in freight revenue during the year 1919. But no one will say it was not worth while.

The national system carried 11,500,000 passengers during the year, an increase of about 1,750,000. Additional services and the return troop movement helped to swell these figures. Total passenger earnings increased from $14,000,000 to a little less than $22,000,000. About $1,500,000 of this increased revenue is attributable to the 10% increase in passenger rates granted during 1918, and in effect for the first time for the full year. The coupling up of the Canadian Northern and the Canadian Government railways has resulted in an increase in better paying long-haul business, and the management has every expectation that this business will be maintained, notwithstanding the completion of troop movements.

**Operating Costs.**—I shall try not to weary the House with an endless procession of figures, but as briefly as possible call attention to their significance, and then append to this verbal statement detailed satistical information, which could appear as appendices to these remarks, and thus receive the leisured scrutiny which their importance warrants. The tables to which I refer differentiate between Canadian National and former Canadian Government lines, and, as well, give the totals for the entire system, with which I have been dealing, They do not, however, include the Grand Trunk Pacific, which, pending the taking over of the Grand Trunk system, has been operated as a separate entity. As receiver for the Grand Trunk Pacific, I intend in due course to present a detailed report of the operation of that line for 1919, though I shall refer briefly to the results of that operation at a later stage of my present remarks.

The operating revenue of the national system was more than $93,000,000. The wage bill for the year exceeded $73,000,000, having, owing largely to the McAdoo series of advances, jumped from $54,000,000 in 1918. In other words, out of every dollar of revenue earned, 78c passed directly, by way of wages, to the employes.

**Labor Conditions**—The cessation of hostilities appreciably relieved the labor situation and enabled a start to be made on overtaking considerable maintenance of way and equipment work which had been deferred under war conditions. An extra large number of tie renewals were made, which at the higher price and higher cost of labor, made a large item; also relaying of rails which could not be gone on with during the war, added to operating expenses. Special locomotive, car, and work equipment repairs were undertaken with a view to keeping in service as much equipment as possible, so as to avoid purchase of new units at the extraordinary high prices to which I shall refer later.

It is to be remembered then, in dealing with the operating expenses for the year under review, that such deferred maintenance work as has been done, amounting to over $5,000,000, is included in the year's operating expenses, and to that extent has increased the deficit. There is still a large amount of deferred work to do, which will add to the operating costs for 1920, but it is satisfactory to know that all the work which is being done is increasing the physical value of the property, as well as making for higher efficiency and economical operation.

The position of the 55,000 employes of the national system was materially improved during the year. They worked on the average a shorter day, and capital expenditures for the year included large items for the improvement of their housing and working conditions. In 1914 the average wage per year of railway employes of Canada was $700; in 1919 on the national system it was $1,447. The relations between the management and the employes have been very satisfactory. Since Canadian Railway Board of Adjustment No. 1 was established in Sept., 1918, Canadian railways have been remarkably free from serious labor troubles, and although the national system then comprised 35% of the mileage in Canada, the grievances arising therefrom amounted to only about 16% of the cases before the board. It is hoped that this board, which is comprised of six representatives of the large railway labor brotherhoods and six railway officers, will be maintained, so that differences of opinion may continue to be settled by round table conference rather than by more expensive uneconomic and inconvenient methods.

**Betterments**—Important progress was made during the year in improving the

transportation plant of the government-owned lines. The aim of the management is to bring the lines up to the standard which existing traffic justifies, to improve these standards as traffic increases, and finally to reach the position where the facilities will provide a slight margin over the immediate traffic requirements, so that when emergency traffic develops there will not be congestion. With respect to many sections of the main lines, this margin of capacity now exists, but expenditures are required on various sections, and at terminal and other important points where limiting conditions now restrict the economical handling of traffic. To improve track conditions, 625 miles of new 85 lb. rail were laid, and on 130 additional miles of track the existing rail was replaced with heavier section, this being largely good 80 to 70 lb. rail released by the first item. The balance of the released rail was used up on the construction of 64 new passing tracks, and the extension of 35 others; also 44 transfer, storage and other tracks, and 46 private and industrial tracks. This additional trackage will greatly facilitate the handling of trains and switching in yards.

About $1,200,000 was spent on ballasting. Over 100 trestles were replaced with permanent structures, and many other bridge improvements were made, a large item being $267,000 expended on the St. Charles river bridge. Good progress was made on the important work of providing second track where in previous years serious congestion has occurred on the Intercolonial Ry. The points where double tracking is being undertaken are between Ste. Rosalie and Charlotte, Truro and Belmont, Springhill Junction and Maccan and also out of Moncton. Over $1,000,000 was expended on the work during 1919. The double track between Drumheller and Munson Jct., Alta., has been completed, thus greatly facilitating the handling of coal from the Drumheller mines. In the case of the Drumheller work, the grouping of 23 mines in one locality, and the attendant mining conditions, make the handling of the traffic practically a limiting factor in production; the movement, too, being crowded into a relatively short season, makes it imperative that good facilities for handling be provided. These expenditures to improve operating conditions produce in many cases a much greater return on the investment than equal expenditures on new lines, as not only are additional earnings secured, but operating expenses are reduced, greater use of equipment is obtained and better service to the public. In line with the management's policy of improving existing facilities, many new structures have been erected, among these being 16 water tanks, 11 coal handling plants, 2 coaling trestles, 26 stations, 12 station shelters, 13 freight sheds, 4 express buildings, 64 single section houses, 10 double section houses, 36 bunk houses, and 8 workmen's cottages. Such expenditures eliminate train delays, effect labor saving, add needed facilities, provide housing and tend to the welfare of employes.

Additions and improvements to locomotive houses, machine shops and other mechanical facilities accounted for $125,000. General improvements included considerable ditching, widening banks and removing sags, preparatory in some cases to ballasting. Some diversions, to reduce grades, to give better alignment, or eliminate bridges were completed and others are under way.

The rebuilding of the Canadian Northern line between Cap Rouge and Portneuf, washed out by the tidal wave in 1918, was almost completed.

On Prince Edward Island, where the lines are narrow gauge, a third rail has been laid from Charlottetown to Summerside, and from Port Borden to Emerald—60 miles in all, which enables standard gauge rolling stock to be interchanged by car ferry, greatly facilitating the handling of traffic to and from the Island.

**New Construction in 1919.**—In submitting the construction programme for 1919, the directors recommended that the work to be undertaken should be as closely as possible confiined to completing branch lines which were under construction in Western Canada at the outbreak of the war. Following this policy, work was done on various lines, among the more important being the extension of the Hanna-Medicine Hat line to Red Cliff, and the St. Paul de Metis line in Alberta; the Humboldt-Melfort connection and Duck Lake branch in Saskatchewan, and the Kamloops-Kelowna line in British Columbia. On Vancouver Island, 28 miles of track were laid on grade previously constructed, and 40 miles of ballasting completed. The Vancouver passenger station was completed and opened for traffic.

Shortage of labor and disturbed industrial conditions during the summer prevented the expected completion of certain western branches, but the work on these will be vigorously pushed this year.

At Toronto, the Leaside terminal yard was further developed. Most of the facilities at this point are now utilized and are proving of great value in handling the business on the lines in Southern Ontario.

**Betterments Proposed for 1920.**—The following general improvements are recommended by the directors as being among the most pressing requirements of the system:

Canadian Government Rys. The relaying of about 200 miles of track with heavier steel, and the utilization of the released steel for additional passing tracks, spurs and sidings.

The completion of the 20 miles of double tracking already referred to and now well under way. Improvements to or replacing of over 200 bridges, trestles and culverts, including filling and other permanent work.

The construction of 25 stations and freight sheds, 7 coaling plants, 7 water stations, 9 buildings for the mechanical department such as locomotive houses, machine shops, etc., 58 buildings for housing employes such as section houses.

Provision will be made for the general improvement of track conditions, and at St. John, N.B., an extension of the yard trackage is required to relieve the congestion at that point.

Canadian Northern Lines. The construction of branch line mileage in Western Canada provides an opportunity to replace steel now on main lines with heavier section, the steel taken from the main lines being serviceable for branch line traffic. The additional traffic being provided by the branch lines is enabling heavier train movements to be made, and the present demand for all-steel passenger equipment requires the utilization of very heavy power, making it necessary to continually improve the standard of main line roadbed, track and structures.

The programme in respect to rail replacements covers the relaying of 350 miles of new steel on main lines; 331 bridges, trestles and culverts are to be replaced, filled or renewed, involving the replacing of many temporary structures by permanent work. The completion of additional mileage in the prairie provinces has necessitated the construction of many new buildings, a large item being 68 stations and freight sheds. There were also built 22 coaling plants. The present price of labor necessitates the adoption of labor-saving devices of this kind. There are also listed 20 new water stations. The mechanical department's facilities will be improved by the construction of new locomotive houses, machine shops, etc., 19 in all. Some of these are required at the end of new branch lines. Additional lines also account for a number of the 134 section houses required.

A large appropriation is required for general roadbed and track improvements, and increasing traffic warrants improvements and revision of the main line between Montreal and Quebec.

A greatly needed improvement is the stringing of an additional copper and steel wire between Montreal and Toronto and Winnipeg, to provide through wires between these important points, the present wires being required for local business and train dispatching. The new wires will also enable new through business to be handled by the G.N.W. Telegraph Co. through Canada, whereas the company's through business now goes via United States connections.

**Construction Programme, 1920.**—It is again proposed to confine new construction in Western Canada to the completion of branch lines on which work is well under way. The programme includes work on 16 branch lines in Manitoba, Saskatchewan, Alberta and British Columbia. The principal items of track laying will be from Eston south-easterly, 35 miles; Humboldt-Melfort line, 32 miles; Melfort north-easterly, 32 miles; Oliver north-easterly, 22 miles; Peace River line, 32½ miles; Swift Current line, 18½ miles, and Jackfish Lake branch, 27 miles. In British Columbia it is proposed to grade 40.4 miles to complete the Okanagan branch. In all, 349.6 miles of track is to be laid and 123.4 miles of line to be graded. The extension of other lines and the construction of additional branches is very strongly urged, and while certain of these projections are fully justified on traffic considerations, their construction has to be postponed on account of the financial situation, labor shortage and high cost of material and supplies.

In Eastern Canada there are several very important connections which can be regarded as essential to economic and unified operation with other lines of the national system, but which must also be postponed until the financial situation improves. Among these may be mentioned the Long Lake connection between the National Transcontinental and the Canadian Northern main lines, which, when completed, will give the Canadian Northern the short route between Winnipeg, Montreal and Toronto.

**Rolling Stock Orders.**—During 1919 the following rolling stock was ordered for Canadian Government railways: 25 Pacific type locomotives, 25 switching locomotives, 13 compartment observation cars, 18 standard sleeping cars, 9 dining cars, 30 baggage cars, 130 colonist cars, 20 tourist cars, 20 mail cars, 550 general service or coal cars, 500 flat cars,

750 box cars, 250 ballast cars, 800 stock cars, 150 refrigerator cars, 25 cabooses.

This equipment has been delivered, except 7 of the standard sleepers, the observation cars, diners, first-class cars and mail cars, all of which it is expected will be in service at an early date.

Passenger earnings have shown such a good increase that 30 additional heavy passenger locomotives are required, and 50 additional passenger train cars.

On account of the very high unit prices of rolling stock, the requirements have been kept down to the lowest point consistent with traffic conditions. This is very necessary, in view of the fact that locomotives suitable for our purpose which could be purchased for $24,000 in 1914 cost $62,000 now; first-class cars have increased from $16,000 to $38,000; dining cars from $28,000 to $46,000. The increase in price of freight cars ranges from 144% for refrigerators to 170% for steel frame box cars.

The equipment to be ordered is as follows: Locomotives — 20 Pacific type, medium weight; 10 Pacific type, heavy weight; 25 heavy freight, 20 switching. Freight cars—3,000 40-ton box, 500 refrigerator, 650 50-ton coal or general purpose, 350 50-ton ballast, 100 cabooses, 6 snow ploughs, 150 stock cars. Passenger cars—20 baggage, 18 standard sleepers, 12 standard diners.

**Freight and Passenger Rates.**—The question of rates is one which will bear careful examination. No system can indefinitely stand the relationship at present existing between earnings and operating expenses of the national, but before proceeding to a consideration of future rates, it may be well to review what has taken place in recent years in that connection. Members will recall the agitation, extending over a period of years, for a reduction of rates in Western Canada, by many urged because it was felt one railway at least could well afford a reduction. Just a few months before the outbreak of war, this western rate case was finally decided. The judgment involved a comprehensive reduction in rates in territory west of the Great Lakes, and very seriously affected the newer lines. Then came the war, and with it undreamed of problems of transportation, and the railways began to feel the effects of war conditions. In 1916 what is known as the eastern rates case provided for a 5% increase in tariffs of eastern roads, both Canadian and U.S., but it did not apply to the west. In 1918, there were two rate increases, the March order, commonly called the 15% increase, and the August increase of 25% (so-called) which accompanied the first of the McAdoo series of wage increases. There was this difference, however, between the rate increases and the wage increases; the latter were retroactive, but the rates could not be retroactive; and, in addition, it was found that the rate increases, when finally applied, did not produce anything like the increase in revenue hoped for. The first mentioned (15%) netted only 7% on the national railway system's passenger revenue and 10% on the system's freight revenue, or on the gross. The second increase was on freight only, and was less in the west than in the east, owing to the equalization of eastern and western rates involved. For instance, in Western Canada the 25% increases wiped out the previous 15% increment. Taken together, these two rate increases are estimated therefore to have been approximately only 30% instead of considerably more than 40% as they would have had they been imposed upon the other.

There are only two ways by which a railway's revenue may be increased. One is by increased rates and the other is by increased business. The Canadian National Rys, should, in view of the resumption of trade and immigration, in view of the strengthening of weak spots by the inclusion of Grand Trunk lines, and especially in view of the traffic possibilities of the 60 steamships, the freight of which will come to national railways, commence to show a steady increase in business, but the management has, in the course of public utterances, called attention to the necessity for increased rates if operating expenses are to be met out of earnings. There are and will be various opinions as to this, but it behooves us to give careful consideration to the management's viewpoint. They point out that Canadian roads are closely bound up with U.S. roads, in proof of which witness the application of the McAdoo awards to Canada. Not only do we pay the same wage schedules and apply the same working conditions, but, generally speaking, freight rates are the same on both sides of the line. In the U.S. the roads are being handed back to their owners in groups and the legislation provides that they be allowed to earn 5½% on their investments, with an additional ½% construction betterments. During the war the U.S. roads were guaranteed a certain return which was made up from the public treasury. Now that this guarantee no longer applies, either an increase in rates will be necessary or the U.S. Government must continue to implement the earnings of the weaker roads. It is estimated that a rate increase of 26% would be required to put the U.S. roads on a paying basis. An increase to that extent, if applied to the earnings of 1919 on the national system, would have produced a revenue of a little more than $110,000,000, which would have left a surplus of net earnings of over $2,000,000. That, of course, does not take the fixed charges into account. The management, therefore, feel that, both because we have the same expenditures to meet and must compete with each other all along the line, whatever freight increase is permitted in the U.S. ought also to be applied to Canadian roads. As Minister of Railways and having asked the management to operate on a business basis, I am bound to present the management's viewpoint for the consideration of Parliament.

I have, however, a larger responsibility as Minister of Railways, having, as such, to do with all Canadian roads, and answerable, in the final analysis, to the people who at present find the cost of commodities sufficiently high. The railway situation in Canada has undergone a marked change, the entire mileage being now controlled in two great groups or systems, the Canadian National and the Canadian Pacific. In Canada the mileage of the latter road is 14,824, but there are 4,948 miles of owned or controlled lines in the United States, so that the system mileage aggregates 19,772. Including the Grand Trunk lines, the Canadian National system will comprise 22,356 miles, of which 2,093 miles are located in the U.S. These two systems are, from the mileage standpoint, at any rate, fairly evenly balanced and it is unnecessary to point out that any increase in rates granted the Canadian National Rys. would equally apply to Canadian Pacific lines. The annual statement of that immense corporation showed that, notwithstanding the disadvantage of increased operating costs and charges common to all roads, the C.P.R. had been able to pay a dividend of 7% on its railway operation, and 3% on its outside operations, or in all its usual 10% dividend on last year's operation.

The argument has been advanced that it would be possible to tax out of the C.P.R. any increase in earnings which might be permitted it in common with the Canadian National Rys. I have my own opinion as to the fairness of such a proposition, but, in any event, I personally feel that such a proposal, even if fair from the standpoint of competition, would not be practicable, for the simple reason that you could not prevent the C.P.R. from spending its revenue legitimately on the improvement of its property, and if, at the end of a year, we found that the increased earnings had gone into betterments, how could we tax it out?

My own feeling is that the C.P.R. is entitled to a rate sufficient to earn 7% on its railway investment, and this they appear to be able to do, notwithstanding present abnormal conditions. The question resolves itself, therefore, into the following proposition: Shall Canadian freight rates be increased generally for the particular purpose of enabling the Canadian National Rys. to meet their operating expenses and fixed charges, or would it be better to go on with the present rates, giving dealers no additional excuse for increasing the cost of living, and trusting to increase in business, the economics it should be possible to effect by co-ordination, and the return of normal conditions to gradually reduce these deficits until the day (which I personally feel is not far off) when the revenue will prove sufficient to pay for operation, and, later also to take care of fixed charges. Should this latter suggestion prevail, it would require to be thoroughly understood that the Minister of Railways, no matter who he may be, must come down next year with a deficit, and the next year with a deficit, and so on for a few years until we shall have turned the corner.

The earnings of the Canadian railways last year were $350,000,000, made up as follows: C.P.R., $177,000,000; Canadian National, $94,000,000; G.T.R., $68,000,000; G.T.P.R., $11,000,000.

A 25% increase on these earnings would approximate $88,000,000, the greater part of which would be earned in Canada. Whether we shall take $88,000,000 in increased freight rates out of the people of the country next year in order to show a surplus for the national system is a question as to which I myself am not prepared to take the responsibility of deciding either one way or the other at present. I leave it to the consideration of the house, and of the people of Canada as a whole, and shall be glad to elicit representative public opinion in the matter, so that the government may be in a position to give this important question the best consideration.

**Bringing in the Grand Trunk.**—The current year will witness the rounding out of the Canadian National Rys. system by the acquisition of the Grand Trunk and its subsidiary lines. With these added, it is estimated that over 50% of the domestic freight traffic of the Dominion will be found to originate along government railways. The con-

necting up of the Grand Trunk lines will give direct access to eastern industrial centers, especially in Ontario. Western Canadian business originating on Grand Trunk lines will no longer require to be split into three but can go forward in one long haul over all-national lines, and, vice versa, the G.T.R. will benefit from a large amount of additional business from our western lines which it could not obtain except as a member of the national system.

Fear has been expressed that Halifax and St. John might suffer as a result of the government taking over the G.T.R. The people of Eastern Canada need have no fear of this, for the reason that these are the terminals of our immense railway systems and have been for many years. They have been greatly improved, and in the operation of our national system, more especially in view of the ocean tonnage we now control, these ports will become increasing, rather than diminishing, factors in the Canadian railway situation.

The connecting up of the G.T.R. lines will mean that 52% of the entire railway mileage of Canada will have passed under government control. This will permit of economics in operation, where the two systems have been maintaining parallel lines and duplicate staffs, and, as already pointed out, there should be compensating advantages to the Canadian Northern, the Intercolonial and the Grand Trunk as well. I wish to point out, however, that, in speaking of advantages, I am referring to the G.T.R. lines only, not the G.T.P. or the Transcontinental Rys. These last named colonization roads, built as part and parcel of the G.T.R., are bound to be unprofitable for many years to come. The loss on operation of the Transcontinental last year was $2,735,000. This was included in the Canadian National figures already referred to. But there is also the Grand Trunk Pacific, which the government found on its doorstep in Mar. 1919, and as to the operation of which I shall have to make a separate report, as the figures form no part of the national system figures with which we have been dealing. But to make my present statement complete, I desire to point out that the G.T.P. for the year ended Dec. 31, 1919, showed an operating loss of $5,500,000. To this must be added fixed charges of $8,500,000, making a total deficit of $14,000,000, an increase of $3,500,000 over 1918. The reasons for this increase were set out in a communication from the General Manager to myself as receiver, and these will be dealt with at the proper time.

Personally, I do not think it will be possible for many years to make the expenses of operating these colonization roads, nor do I think it fair that they should be expected to make the showing we look for from the Canadian Northern, the Intercolonial or the Grand Trunk proper. Therefore, I think the annual loss on these railways should not be added to the net deficit of the Canadian National Rys., for purposes of comparison, and I have instructed the management that the operation of these systems must be shown separately at the close of each year, so that when comparisons are made between other systems and our government system, the comparison may be a reasonably fair one.

**Hudson Bay Railway.**—There is one more railway which was commenced and which has not been completed, viz., the Hudson Bay Ry. For the information of members, I may say that the government has decided that no more work shall be done on it during the coming year. It is the intention to use every effort to extend branch lines into districts where settlers are much more in evidence and in much greater need of railway communication. The Hudson Bay Ry will therefore stand until financial conditions will permit of its resumption.

In conclusion let me say there was a time, not long ago, when the government system was largely a local carrier getting the short end of business that goes with the short haul. The longest haul it could hope for was from Halifax or Sydney to Montreal, and vice versa. And in competing with the Grand Trunk for Montreal business offering to the seaboard, we could charge only the Portland rate, though the Intercolonial mileage to Halifax was 841 as against the Grand Trunk's 297 to Portland. Similarly, the C.P.R. had the advantage of its comparatively short haul of 481 miles to St. John, and for business originating at the Intercolonial chief terminal, Halifax (it had to compete with this same highly organized and stronger competitor, whose agents were always active abroad and whose ships were ever on the seas. But a change has come over the scene. Now the government system itself bestrides the continent, with branches reaching, for the first time, into productive centers and with terminals upon both eastern and western oceans. The story of the Canadian Government Merchant Marine has been told by the Minister of Marine, and at last we also have our ships upon the seas, and our agents abroad will actively compete for international trade. Keen competition, 'adroit, persistent, aggressive and fair,' is promised by the C.P.R. President, who expresses the hope that both their own systems and the national may in future work in common for the advancement of the country. He says there need no longer be controversy, but that there will always be keen competition. That is what the management of the national system expects and welcomes. I am told that the nationalization of the Canadian Northern has made no difference in the morale of the employes of that road, that they are as keenly alert as ever and "on their toes" to make government ownership and operation a success. We expect the employes of the G.T.R. systems will co-operate with equal loyalty, and the government in turn will spare no effort to build up a great national railway system able to compete with and maintain the high standard of transportation efficiency reached by the C.P.R. That road may well be the standard against which we may measure the success of government ownership and operation. I say "success" because I am not prepared for one moment to contemplate any other possibility. The national lines, with the G.T.R. included, will comprise a system which will serve every province in Canada, which will be identified with every progressive community, and must continue to perform the major part of the transportation service of the entire Dominion. We have taken steps to remove the government's lines from political interference. Experienced railway men are in charge; they are being given money to improve the roadbed, to buy the best equipment to enable the greatest tonnage to be hauled in a single train. It is the greatest encouragement towards expansion to have this great national system ready and equipped to handle additional traffic as it develops—and it surely will develop. If we imagine Canada to have reached the maximum of development then we shall have planned foolishly, but I, for one, have the faith to feel and the vision to prophesy that this great transportation system is not being prepared to perform this splendid transportation service in vain.

I would like to hand in the schedules I referred to to be inserted in the official report of the debates, so that members may have before them all the details I have mentioned.

**Canadian National Railways.**

Comparative summary of operating results, 12 months ended Dec. 31:

| | 1919. | 1918. | Increase. | % Increase. |
|---|---|---|---|---|
| **Operating revenue.** | | | | |
| Canadian Northern | $ 53,562,177.57 | $47,310,011.91 | $ 6,252,165.66 | 13.22 |
| Canadian Government | 40,179,380.93 | 34,636,484.67 | 5,542,896.26 | 16.00 |
| Canadian National | 93,741,558.50 | 81,946,496.58 | 11,795,061.92 | 14.39 |
| **Distribution.** | | | | |
| Passenger | 21,837,744.47 | 14,327,355.63 | 7,510,388.84 | 52.42 |
| Freight | 63,154,773.39 | 60,550,011.42 | 2,604,761.97 | 4.30 |
| Other | 8,749,040.64 | 7,069,129.53 | 1,679,911.11 | 23.76 |
| **Operating expenses.** | | | | |
| Canadian Northern | 60,034,023.92 | 44,062,949.94 | 15,971,073.98 | 36.25 |
| Canadian Government | 47,728,205.73 | 40,028,099.35 | 7,700,106.38 | 19.24 |
| Canadian National | 107,762,229.65 | 84,091,049.29 | 23,671,180.36 | 28.15 |
| **Distribution.** | | | | |
| Mtce. of way and str. | 28,476,450.66 | 19,266,424.83 | 9,210,025.83 | 47.80 |
| Mtce. of equipment | 19,950,409.17 | 15,792,342.10 | 4,158,067.07 | 26.33 |
| Traffic | 1,478,372.41 | 1,291,721.00 | 186,651.41 | 14.45 |
| Transportation—rail | 52,914,891.80 | 44,406,311.93 | 8,508,579.87 | 19.16 |
| Transportation—water | 782,316.69 | 319,857.23 | 462,459.46 | 144.58 |
| Miscellaneous | 1,877,168.08 | 1,162,311.69 | 714,856.39 | 61.50 |
| General | 2,282,620.84 | 1,852,080.51 | 430,540.33 | 23.25 |
| **Operating ratio.** | | | | |
| Canadian Northern | 112.08 | 93.14 | 18.94 | 20.33 |
| Canadian Government | 118.79 | 115.57 | 3.22 | 2.78 |
| Canadian National | 114.96 | 102.62 | 12.34 | 12.02 |
| **Operating loss.** | | | | |
| Canadian Northern | * 6,471,846.35 | 3,247,061.97 | * 9,718,908.32 | *299.31 |
| Canadian Government | * 7,548,824.80 | * 5,391,614.68 | * 2,157,210.12 | * 40.01 |
| Canadian National | *14,020,671.15 | * 2,144,552.71 | *11,876,118.44 | *553.84 |
| **Mileage operated.** | | | | |
| Steam | 13,601.75 | 13,451.16 | 150.59 | * 1.12 |
| Electric | 125.60 | 62.00 | 63.60 | *102.58 |
| Total | 13,727.35 | 13,513.16 | 215.19 | * 1.58 |
| Revenue train miles | 29,633,398 | 28,555,928 | 1,077,470 | 3.77 |
| Earnings per r.t.m | 3.09† | 2.82† | 0.27 | 9.58 |
| Expenses per r.t.m. | 3.57† | 2.91† | 0.66 | 22.66 |
| Loss per r.t.m. | 0.48† | 0.09† | 0.39 | 433.33 |

*These figures denote decrease or deficit.
†Electric and water lines excluded.
Statement excludes income and equipment items and branch line rentals.

Canadian National Railways.

| | | | | |
|---|---|---|---|---|
| Operating deficit | $14,020,671.15 | $ 2,144,552.71 | $11,876,118.44 | 553.84 |
| Canadian Government rentals | 697,384.22 | 692,400,00 | 4,984.22 | 7.20 |
| Miscellaneous income | *961,665.21 | *298,075.67 | *1,259,740.88 | *422.62 |
| Def. St. John and Quebec | 187,269.97 | 142,941.87 | 44,328.10 | 31.01 |
| Net deficit excluding Canadian Northern fixed charges and miscellaneous income balance .. | $13,943,660.13 | $ 3,277,970.25 | $10,665,689.88 | 325.38 |
| Traffic—Passengers carried (exclusive of electric lines.) | 1919. | 1918 | Increase. | Per cent. |
| Canadian Government | 6,697,232 | 5,779,085 | 918,157 | 15.89 |
| Canadian Northern | 4,910,160 | 4,114,965 | 795,195 | 19.32 |
| Canadian National | 11,607,392 | 9,894,050 | 1,713,352 | 17.32 |
| Tons of freight handled. | 1919. | 1918. | Decrease. | Per cent. |
| Canadian Government | 11,108,391 | 13,476,755 | *2,368,364 | *17.57 |
| Canadian Northern | 13,066,315 | 13,699,345 | *633,030 | * 4.62 |
| Canadian National | 24,174,706 | 27,176,100 | *3,001,394 | *11.04 |
| Passenger train mileage. | | | | |
| Canadian Government | 4,744,179 | 3,946,703 | 797,476 | 20.21 |
| Canadian Northern | 5,829,184 | 5,043,098 | 786,086 | 15.58 |
| Canadian National | 10,573,363 | 8,989,801 | 1,583,562 | 17.62 |
| Mixed train mileage. | | | | |
| Canadian Government | 1,182,041 | 1,205,829 | * 23,788 | * 1.97 |
| Canadian Northern | 1,841,603 | 1,788,536 | 53,067 | 2.97 |
| Canadian National | 3,023,644 | 2,994,365 | 29,279 | 0.98 |
| Freight train mileage. | | | | |
| Canadian Government | 6,199,775 | 6,986,399 | * 786,624 | *11.26 |
| Canadian Northern | 9,788,782 | 9,545,329 | 243,453 | 2.55 |
| Canadian National | 15,988,557 | 16,531,728 | * 543,171 | * 3.29 |
| Work train mileage. | | | | |
| Canadian Government | 547,594 | 492,558 | 55,036 | 11.17 |
| Canadian Northern | 1,505,543 | 1,108,625 | 396,918 | 35.80 |
| Canadian National | 2,053,137 | 1,601,183 | 451,954 | 28.23 |
| Total train mileage. | | | | |
| Canadian Government | 12,673,589 | 12,631,489 | 42,100 | 0.33 |
| Canadian Northern | 19,012,946 | 17,525,622 | 1,487,324 | 8.49 |
| Canadian National | 31,686,535 | 30,157,111 | 1,529,424 | 5.07 |

*Decrease.

Canadian National Railways.

Comparison of pay-roll, 12 months ended Dec. 31.

| | 1919. | 1918. | Increase. | Per cent. |
|---|---|---|---|---|
| Can. Government railways | $31,545,481.18 | $24,980,155.59 | $ 6,565,325.59 | 26.28 |
| Canadian Northern railway | 41,620,133.30 | 29,269,906.70 | 12,350,226.60 | 42.19 |
| | $73,165,614.48 | $54,250,062.29 | $18,915,552.19 | 37.87 |

Explanation of Increase.

| | Can. Govt. Rys. | Can. Nor. Ry. | Total | Per cent. |
|---|---|---|---|---|
| Increase due to G.O. 27 | $ 2,499,353.28 | $ 3,218,339.56 | $ 5,717,692.84 | 30.23 |
| Supplements | 3,749,029.92 | 4,827,509.34 | 8,576,539.26 | 45.34 |
| Deferred maintenance and increased service | 316,942.39 | 3,456,199.97 | 3,773,142.36 | 19.14 |
| Backe time 1918 | ..... | 84,177.73 | 84,177.73 | ..... |
| Total | 6,565,325.59 | 12,350,226.60 | 18,915,552.19 | 100.00 |

Canadian National Railways.

Revised estimate of wages for 12 months at present rates, showing increase under McAdoo Award, supplements and collateral increases down to and inclusive of 4c. increase to shopmen. Based on number of hours on duty for all employes for year ended June 30, 1918.

| Class of employes. | Compensation prior to G.O. 27. | Increase under G.O. 27. Amount | % | No. | Increase under Supplements. Amount | % | Estimated wages 12 months under existing rates. | Total Increase over 1917. Amount | % |
|---|---|---|---|---|---|---|---|---|---|
| | $ cts. | $ cts. | | | $ cts. | | $ cts. | $ cts. | |
| Maintenance of way | 10,686,978 83 | 2,837,304 88 | 26.55 | 8 | 4,701,487 53 | 43.99 | 18,225,771 24 | 7,538,792 41 | 70.54 |
| Maintenance of equipment | 9,595,877 56 | 2,921,562 96 | 30.44 | 4 | 3,163,022 42 | 32.96 | 15,680,462.94 | 6,084,585 38 | 63.41 |
| Enginemen | 5,334,427 54 | 611,870 90 | 11.47 | 15 | 636,986 23 | 11.94 | 6,583,284 67 | 1,248,857 13 | 23.41 |
| Trainmen | 6,323,329 91 | 673,679 16 | 10.65 | 16 | 392,532 24 | 6.21 | 7,389,541 31 | 1,066,211 40 | 16.86 |
| Agents and telegraphers | 2,468,844 39 | 177,110 04 | 7.17 | 13 | 956,310 93 | 38.74 | 3,602,265 36 | 1,133,420 97 | 45.9 |
| Clerical and other station forces | 6,199,273 57 | 1,195,561 46 | 19.28 | 7 | 1,970,280 30 | 31.79 | 9,365,115 53 | 3,165,841 76 | 51.07 |
| Various (not distributed) | 1,381,846 26 | 261,059 04 | 18.89 | Var. | 830,981 46 | 60.14 | 2,473,886 76 | 1,092,040 50 | 79.03 |
| Officers | 1,275,303 73 | ..... | ..... | Coll. | 361,353 81 | 26.33 | 1,636,657 54 | 361,353 81 | 28.33 |
| Grand total | 43,265,881 79 | 8,678,148 44 | 20.06 | ..... | 13,013,954 92 | 30.07 | 64,956,985 15 | 21,691,103 36 | 50.13 |

## Standard Conditions and Specifications for Wire Crossings.

The Board of Railway Commissioners passed general order 288, Mar. 23, as follows:—Re sec. 372 of the Railway Act, 1919, for carrying of wires and cables along or across railway tracks and the Canadian National Rys. application for an order amending the Standard Conditions and Specifications for Wire Crossings, approved by general order 231, May 6, 1918, as amended by general order 267, June 27, 1919: Upon reading what is filed in support of the application, the Canadian Pacific and Grand Trunk Railways concurring therein, it is ordered that the Standard Conditions and Specifications for Wire Crossings, as approved by general order 231, be amended by striking out paragraph 4 of part 1 and substituting therefor the following, viz.:

"4. The applicant, before any work is begun, shall give the railway company owning, operating, or using the said railway at least 72 hours prior notice thereof in writing, and the said railway company shall be entitled to appoint an inspector, under whose supervision such work shall be done, and whose wages, at a rate not to exceed $11 a day, shall be paid by the applicant; such payment to cover both wages and expenses. When the applicant is a municipality, and the work is on a highway under its jurisdiction, the wages of the inspector shall be paid by the railway company."

General order 267 is rescinded.

## London to Calcutta by Rail.

The Bagdad Railway begins at Konia, in the heart of Asia Minor, where, by means of the Anatolian Railway it connects with Constantinople. From Constantinople to Aleppo, is some 850 miles. From Aleppo the line proceeds to Jerablus, on the Euphrates, and thence by Nisibin to the important center of Mosul on the Tigris; thence southward to Bagdad and to Basra. From Aleppo to Bagdad is about 650 miles. Carry the imagination further, and we may reasonably picture, under the new political arrangements between Great Britain and Persia, the extension of the Bagdad Railway to Teheran, and thence to Quetta and India. That done—and the conception has its grandeur—travel overland between London and Calcutta should be a matter of less than a fortnight. Lindsay Bathford in Edinburgh Review.

## Alberta's Guarantees of Railway Bonds.

The Province of Alberta is reported to have made a statement in the Legislature recently, in reply to questions as to the position of the province in regard to its guarantees of bonds for railway construction. His reply covered the guarantee of bonds for lines forming part of the Canadian Northern Ry., and for branch lines of the Grand Trunk Pacific Ry., both of which railways are now under the Dominion Government's control, the first forming part of the Canadian National Rys., and the second being under a Dominion Government Receivership, and will shortly pass, with the G.T.R. under government ownership.

In reference to the Canadian Northern Ry. the Premier said the Alberta Government had guaranteed bonds for the lines from Strathcona to Calgary, 230 miles; from north of Calgary to Lethbridge, 125 miles; from Camrose to Vegreville, 45 miles; from near MacLeod to the western boundary of the province, 65 miles, and from the crossing of the Lethbridge-Calgary line over the Little Bow River, via Macleod to the international boundary, 110 miles. Bonds have been sold in respect of these lines to the extent of 88.35% of the guarantee, the amount of money standing to the credit of the province from the proceeds of the sales of such bonds being $1,201,791.85. The completed lines of the branches guaranteed are those from Camrose to Vegreville; Strathcona to Calgary, and a portion of the Lethbridge-Calgary line, there being still 96.87 miles to build. Monies paid over to the C.N.R. for work done amount to $188,600 on the Calgary-Lethbridge line; $182,325 on the Little Bow-Boundary line and $86,282.30 on the Macleod-B.C. boundary branch.

In reference to the Grand Trunk Pacific branch lines the Premier said the provincial guarantee was for the lines from Tofield to Calgary, 201.5 miles, the bonds for which had been sold and the entire proceeds paid to the company. This line is completed and has been in operation for some years.

**Van Horne Estate.** The transferring of 122½ square miles of crown lands, owned by the late Sir William Van Horne's estate in Northumberland County, N.B., to the International Paper Co., New York, has been completed.

# Canadian Pacific Railway Co's Annual Report.

Following is the directors' report for the year ended Dec. 31, 1919. The accounts show the following results:

| | | |
|---|---|---|
| Gross earnings | | $176,929,060.00 |
| Working expenses | | 143,996,023.58 |
| Net earnings | | $ 32,933,036.42 |
| Deduct fixed charges | | 10,161,509.77 |
| Surplus | | $ 22,771,526.65 |
| Contribution to pension fund | | 500,000.00 |
| | | $ 22,271,526.65 |
| From this there has been charged a half-yearly dividend on preference stock of 2%, paid Oct. 1, 1919 | $ 1,613,638.42 | |
| And three quarterly dividends on ordinary stock of 1¾% each, paid June 30, Oct. 1, and Dec. 31, 1919 | 13,650,000.00 | |
| | | 15,263,638.42 |
| | | $ 7,007,888.23 |
| From this there has been declared a second half-yearly dividend on preference stock of 2% payable April 1, 1920 | $ 1,613,638.42 | |
| And a fourth quarterly dividend on ordinary stock of 1¾% payable Apr. 1, 1920 | 4,550,000.00 | |
| | | 6,163,638.42 |
| Leaving net surplus for year (which amount has been placed in reserve to meet special taxes imposed by the Dominion Government) | | $ 844,249.81 |

In addition to the above on ordinary stock 3% was paid from special income.

**Special Income For Year Ended Dec. 31, 1919.**

| | | |
|---|---|---|
| Bal. Dec. 31, 1918 | $16,114,502.37 | |
| Less: dividend paid April 1, 1919 | 1,950,000.00 | |
| | | $14,164,502.37 |
| Net revenue from investments and available resources | | 1,765,220.18 |
| Interest on deposits, and interest and dividends on other securities less exchange | | 1,040,544.13 |
| Net earnings ocean and coastal steamship lines | | 3,567,510.38 |
| Net earnings commercial telegraph and news department, rentals and miscellaneous | | 2,676,067.21 |
| | | $23,213,844.27 |
| Less: payments to shareholders in dividends in 1919 | | 5,850,000.00 |
| | | $17,363,844.27 |
| From this a dividend has been declared payable April 1, 1920 | | $ 1,950,000.00 |

The working expenses for the year were 81.39% of the gross earnings, and the net earnings 18.61% compared with 78.10% and 21.90% respectively in 1918.

The gross earnings of your transportation system during the year exceeded those of any previous year in the company's history, and exceeded those of 1918 by $19,391,362, but the net earnings were less by $1,569,351. This large addition of $20,960,713 to working expenses is due to the great advance in wages and the increased cost of fuel and other materials.

Your directors cannot hold out any hope of substantial relief, for some time to come, from these high costs, which are reflected so strongly in the operating expenses, but every effort is being made to offset the effect on your revenues by economy in operation and the extension of the company's freight and passenger business. It is not to be expected, however, that any normal increase in business can possibly equal the extraordinary increase in wage and other costs which all railway companies have experienced during the past two years.

The sales of agricultural land in the year were 681,763 acres for $13,668,443, an average of $20.05 an acre. Included in this area were 80,795 acres of irrigated land, which brought $52.53 an acre, so that the average price for the balance was $15.68 an acre.

There were no sales of 4% consolidated debenture stock, 4% preference stock, other capital securities during the year.

The late granting of the necessary statutory authority, combined with difficulty in securing labor and the early setting in of winter in the west, prevented extensive construction during the year of branch line mileage which you authorized at the last annual meeting. Your directors are of the opinion that reasonable additional construction should be gone on with as conditions warrant, and your authority will be asked for proceeding with the construction of the following lines and for the issue and sale of a sufficient amount of 4% consolidated debenture stock to meet the expenditure, viz:

Wymark-Archive Branch, 25 miles.
Rosetown South Branch, 45 miles.
Weyburn-Lethbridge Branch, from Altawan to Manyberries, 35 miles.
Moose Jaw Southwesterly Branch, from Consul southeasterly, mile 35 to 60.
Moose Jaw Southwesterly Branch, from Assiniboia southwesterly, 30 miles.
Leader Southerly Branch, 50 miles.
Duchess, or Rosemary, North Branch, 34 miles.
Cutknife to Whitford Lake Branch, 40 miles.
An extension of the Swift Current Northwesterly branch from Empress northwesterly, 20 miles.
An extension of the Swift Current Northwesterly Branch, from Sedgewick to Vegreville, 54 miles.

Your directors appreciate that the construction of the above lines can only be proceeded with gradually, in view of the probable shortage of labor available for such purposes, but they deem it desirable to obtain your authority, in order that the work may be gone on with from time to time as circumstances permit.

In order to facilitate the economic handling of traffic in and out of Winnipeg, your directors think it desirable to double track the line extending from Winnipeg to Molson, and, for the purpose of relieving the main line of pressure of traffic during grain shipping seasons, that capital expenditure should be made on the Bassano Branch, extending from Bassano to Java, with the view of raising it to the standard of the main line, and thus permitting the expeditious and cheap handling of grain and other traffic from points west of Bassano. The estimated total cost of these works will be about $2,000,000, but in the opinion of your directors the heavy present and prospective traffic in these districts amply warrants the outlay.

In anticipation of your confirmation your directors authorized capital appropriations, in addition to those approved at the last annual meeting for 1919, aggregating $3,359,000, and subject to your approval have authorized expenditures on capital account during this year of $9,613,353. Of this amount the principal items are:—

| | |
|---|---|
| Replacement and enlargement of structures in permanent form | $1,267,144 |
| Additional stations, roundhouses, freight sheds and shops, and extensions to existing buildings | 2,009,166 |
| Tie plates, rail anchors, ballasting, ditching and miscellaneous betterments | 1,113,599 |
| Replacement of rail in main and branch line tracks with heavier section | 979,493 |
| Additional terminal and side-track accomodation | 442,363 |
| New coal dock at Fort William terminals | 871,000 |
| Proposed new station and yard changes at Trois Rivieres | 500,000 |
| Improvements in connection with telegraph service | 575,860 |
| British Columbia Coast Steamship Service | 135,000 |
| Mechanical department, machinery at various shops | 363,236 |

The balance of the amount is required for miscellaneous works, to improve facilities over the whole system, and effect operating economies.

Your directors are making provision for obtaining the following necessary additions to your company's equipment, viz: 3 dining cars, 43 sleeping cars, 67 air dump cars, 2,500 sixty-ton box cars, 500 refrigerator cars; at a total cost of approximately $13,162,000.

During the year the following steamships were disposed of: Prince George, Princess Margaret, Princess May, Virginian, Monmouth. The s.s. War Peridot and War Beryl, having a d.w. tonnage of 10,500 tons each, were bought.

The lease of the Nakusp and Slocan Ry., extending from Nakusp to Three Forks, with branches to Sandon and White Water, having an aggregate mileage of 48.47 miles, which was executed in 1895, and under which this railway was leased to your company for 25 years from July, 1895, will expire in July next. Your directors will therefore submit for your approval a new lease of the railway to this company for 99 years on the usual terms.

Appreciating the vital importance to Canada of the success of the Victory Loan of 1919, your company subscribed to $20,000,000, of which $14,000,000 was taken for the company's special investment fund.

The Consolidated Mining and Smelting Co. in which your company has a substantial direct interest, through its holdings of bonds and stocks and upon the success of whose undertaking the prosperity of Southern British Columbia, and the consequent traffic for your railway depend to a marked degree, will require during this year additional sums for needed extensions and additions to its plant. In anticipation of your consent your directors have decided to advance such amounts as may be required, pending the making of capital issues or other permanent financial arrangements by the Consolidated Company.

Your directors regret to report the death on May 24, 1919, of Wilmot D. Matthews, of Toronto, who had been a director of the company for 31 years, and whose advice and counsel had always been of the utmost value to his associates on the board. During the year Hon. James Dunsmuir, of Victoria, resigned as a director. The Hon. W. J. Shaughnessy was elected to succeed Hon. James Dunsmuir, and Sir John C. Eaton was elected to fill the vacancy created by Mr. Matthews's death.

The undermentioned directors will retire from office at the approaching annual meeting. They are eligible for re-election: Sir John C. Eaton, Grant Hall, Sir Vincent Meredith, Sir Augustus M. Nanton.

**Receipts and Expenditures, Year Ended Dec. 31, 1919.**

RECEIPTS.

| | | |
|---|---|---|
| Cash in hand, Dec. 31, 1918 | | $39,548,416.63 |
| Surplus revenue | $22,271,526.65 | |
| Special income | 9,049,341.90 | |
| | | 31,320,868.55 |
| Land Department. | | |
| Lands and townsites: | | |
| Proceeds of sales and interest, less cancellations | $14,893,960.31 | |

| | | |
|---|---|---|
| Less sales expenses and irrigation | 4,284,045.93 | |
| | $10,609,914.38 | |
| Deferred payments on previous year's sales | 3,228,239.02 | |
| | $13,838,153.40 | |
| Amount remaining in deferred payments on the sales of the year | 9,183,640.97 | |
| | | 4,654,512.43 |
| Amount received from sales of government securities and repayment of advances to governments | | 9,017,458.13 |
| Amount of West Kootenay Power & Light Co.'s first mortgage bonds transferred from miscellaneous securities to pension fund (cost) | | 35,283.33 |
| Amount applied in reduction of cost of mining and other properties | | 17,956.58 |
| Increase on current liabilities, rentals of leased lines and coupons on mortgage bonds, and reserves and appropriations | | 24,740,569.94 |
| | | $109,335,065.59 |

EXPENDITURES:

| | | |
|---|---|---|
| Dividends on preference stock | | $3,227,276.84 |
| Dividends on ordinary stock | | 26,000,000.00 |
| Construction of branch lines | | 1,415,970.35 |
| Additions and improvements, main line and branches | | 3,095,694.08 |
| Expenditure on leased and acquired lines | | 1,198,548.55 |
| Shops and machinery | | 64,452.85 |
| Lake and river steamships | | 27,115.40 |
| Ocean and coastal steamships: | | |
| Payments on steamships acquired and under construction | $10,394,443.06 | |
| Less amount paid from steamship replacement | 8,009,690.30 | |
| | | 2,384,752.76 |
| Deposited with trustee, special investment fund | | 6,607,318.59 |
| Securities acquired: | | |
| Consolidated Mining & Smelting Co. bonds | $2,698,400.00 | |
| Lake Erie & Northern Ry. 1st mortgage bonds | 6,700.00 | |
| Nakusp & Slocan Ry. bonds | 647,072.00 | |
| Alberta Stock Yards Co., preferred stock | 430,500.00 | |
| Public Markets Ltd., of Manitoba, stock | 50,000.00 | |
| Trustee securities | 2,201.539.69 | |
| | | 6,034,211.69 |
| Payments on subscriptions to government loans | | 2,037,981.25 |
| Payment of equipment obligations | | 940,000.00 |
| Increase in working assets and advances to controlled properties and insurance premiums | | 2,782,322.45 |
| | | $ 55,815,644.81 |
| Cash in hand, Dec. 31, 1919 | | 53,519,420.78 |
| | | $109,335,065.59 |

**Construction of Branch Lines.**

| | |
|---|---|
| Archive—Wymark Branch | $ 81,099.10 |
| Bassano East (Milden southwest) Branch | 26,444.27 |
| Langdon North (Acme-Drumheller) Branch | 483,962.31 |
| Lanigan Northeast Branch | 347,657.80 |
| Leader Southeast Branch | 94,561.20 |
| Moose Jaw Southwest (Consul Southeast) Branch | 109,633.16 |
| Rosetown Southeast Branch | 136,964.26 |
| Surveys | 135,648.25 |
| | $1,415,970.35 |

**Earnings for Year Ended Dec. 31, 1919.**

| | |
|---|---|
| Passengers | $ 46,182,151.12 |
| Freight | 111,064,441.68 |
| Mails | 1,483,332.26 |
| Sleeping cars, express and miscellaneous | 18,199,134.94 |
| Total | $176,929,060.00 |

**Working Expenses for Year Ended Dec. 31, 1919.**

| | |
|---|---|
| Transportation | $ 68,054,174.76 |
| Maintenance of way and structures | 28,912,220.30 |
| Maintenance of equipment | 33,897,727.64 |
| Traffic | 3,829,686.56 |
| Parlor and sleeping cars | 1,861,428.05 |
| Lake and river steamships | 1,335,003.19 |
| General | 6,105,783.08 |
| Total | $143,996,023.58 |

**Description of Freight Forwarded, Years Ended Dec. 31.**

| | 1918. | 1919. |
|---|---|---|
| Flour, barrels | 13,301,740 | 12,787,020 |
| Grain, bushels | 137,070,428 | 121,059,921 |
| Live stock, head | 2,364,870 | 2,603,571 |
| Lumber, feet | 3,241,312,802 | 3,143,431,200 |
| Firewood, cords | 339,631 | 279,925 |
| Manufactured articles, tons | 9,718,373 | 7,854,163 |
| All other articles, tons | 9,798,523 | 7,589,275 |

**Freight Traffic, Years Ended Dec. 31.**

| | 1918. | 1919. |
|---|---|---|
| Tons carried | 29,856,694 | 25,102,821 |
| Tons carried one mile | 13,014,665,922 | 11,121,322,012 |
| Earnings per ton per mile | 0.85 cents | 1.00 cents |

**Passenger Traffic, Years Ended Dec. 31.**

| | 1918. | 1919. |
|---|---|---|
| Passengers carried | 14,502,546 | 15,815,982 |
| Passengers carried one mile | 1,289,280,061 | 1,776,740,850 |
| Earnings per passengers per mile | 2.39 cents | 2.60 cents |

**Train Traffic Statistics, Years Ended Dec. 31.**

Earnings of lake and river steamships and of Kettle Valley Ry. not included.

TRAIN MILEAGE.

| | 1919. | 1918. |
|---|---|---|
| Passenger trains | 20,411,110 | 16,665,928 |
| Freight trains | 19,994,867 | 22,326,115 |
| Mixed trains | 1,943,410 | 1,966,362 |
| Total trains | 42,349,387 | 40,958,405 |

CAR MILEAGE.

| | | |
|---|---|---|
| Passenger. | | |
| Passenger and P. D. and S. cars | 110,759,727 | 82,747,310 |
| Combination cars | 2,400,909 | 2,366,268 |
| Baggage mail and express cars | 46,196,600 | 40,903,961 |
| Total passenger cars | 159,357,236 | 126,017,539 |
| Freight. | | |
| Loaded | 494,862,169 | 539,157,440 |
| Empty | 170,620,412 | 199,157,368 |
| Caboose | 23,988,547 | 25,343,851 |
| Total freight cars | 689,471,128 | 763,658,659 |
| Passenger cars per traffic train mile | 7.13 | 6.76 |
| Freight cars per traffic train mile | 31.43 | 31.44 |

PASSENGER TRAFFIC.

| | | |
|---|---|---|
| Passengers carried (earning revenue) | 15,671,752 | 14,396,753 |
| Passengers carried (earning revenue) one mile | 1,763,604,596 | 1,280,533,734 |
| Passengers carried (earning revenue) one mile per mile of road | 135,727 | 98,550 |
| Average journey per passenger miles | 112.53 | 88.95 |
| Average amount received per passenger | $2.91 | $2.12 |
| Average amount received per passenger mile | 2.59c | 2.38c |
| Average number of passengers per train mile | 78.89 | 68.73 |
| Average number of passengers per car mile | 15.58 | 15.04 |
| Revenue from passengers per passenger car mile | 40.32c | 35.81c |
| Total passenger train earnings per train mile | $2.59 | $2.15 |
| Total passenger train earnings per mile of road | $4,463.87 | $3,078.88 |

FREIGHT TRAFFIC.

| | | |
|---|---|---|
| Tons of revenue freight carried one mile | 10,926,848,494 | 12,885,684,625 |
| Tons of non revenue freight carried one mile | 1,378,437,805 | 1,423,459,482 |
| Total tons (all classes) freight carried one mile | 12,305,286,299 | 14,309,144,107 |
| Tons of revenue freight carried one mile per mile of road | 840,928 | 991,680 |
| Tons of non-revenue freight carried one mile per mile of road | 106,084 | 109,549 |
| Total tons (all classes) freight carried one mile per mile of road | 947,012 | 1,101,229 |
| Average amount received per ton per mile of revenue freight | 1.003c | 0.847c |
| Average no. of tons of revenue freight per train mile | 498.07 | 530.44 |
| Average no. of tons of non - revenue freight per train mile | 62.83 | 58.60 |
| Average no. of tons of (all classes) freight per train mile | 560.90 | 589.04 |
| Average no. of tons of revenue freight per loaded car mile | 22.08 | 23.90 |
| Average no. of tons of non - revenue freight per loaded car mile | 2.79 | 2.64 |
| Average no. of tons of (all classes) freight per loaded car mile | 24.87 | 26.54 |
| Freight train earnings per loaded car mile | 22.15c | 20.24c |
| Freight train earnings per train mile | $5.00 | $4.49 |
| Freight train earnings per mile of road | $8,434.11 | $8,398.25 |

**Mileage of Company's Lines.**

| | |
|---|---|
| Included in C.P.R. traffic returns | 13,388.5 |
| Other lines worked | 383.6 |
| Lines under construction | 234.0 |
| | 14,006.1 |
| Minneapolis, St. Paul & Sault Ste. Marie Ry. | 4,227.8 |
| Duluth, South Shore & Atlantic Ry. | 625.8 |
| | 4,853.6 |
| | 18,859.7 |

**French Railway Rates Increased.** The French Official Journal states that an act has been passed authorizing further temporary increases in French railway rates. The new increases, which will be in force for 1920, are as follows: third class tickets, 45%; second class tickets 50%; first class tickets 55%; transport of merchandise, 115%. The present increases will be added to the increase of 25% provided by the law of Mar. 31, 1918, but the new percentage of increase will not apply to or be calculated upon this previous increase of 25% itself.

**Canadian National Rys. Shop Employes.**—The Minister of Railways, replying to questions in the House of Commons recently, said that 93 employes of the Riviere du Loup, Que., shops had been transferred to the St. Malo shops at Quebec City, of whom 33 are single and 60 married; there are dependent on the married men 227 women and children and 29 other dependents. The total population thus removed from Riviere du Loup was 349.

**Esquimalt & Nanaimo Ry. Land Grants.** The British Columbia Legislature appointed a committee recently to enquire into and determine certain matters respecting coal licenses granted on lands ceded to the Esquimalt & Nanaimo Ry. under the settlement agreement of 1910, and to report what, if any, measure of relief should be granted to the license holders.

**E. A. Campbell**, agent, C.P.R., Sussex St., Ottawa, in remitting his annual subscription, writes: "I enjoy Canadian Railway and Marine World very much."

## Rules for Inspection of Locomotives and Tenders.

The Board of Railway Commissioners passed general order 289, Mar. 24, as follows:—Re consideration of adoption by railway companies of rules relative to inspection of locomotives and tenders. In pursuance of powers conferred upon the board by the Railway Act, 1919, Sec. 287, and of all other powers possessed by it in that behalf; and upon reading the submissions filed by the Railway Association of Canada and the Canadian Pacific and Grand Trunk Railways, and the report and recommendation of the board's Chief Operating Officer, it is ordered that railway companies adopt and put into force, not later than June 1, 1920, the rules relative to the inspection of locomotives and tenders, hereto attached marked "A".

"A" Rules relative to inspection of locomotives and tenders.

Every locomotive and tender shall be inspected after each trip, or day's work. The employe making the inspection shall report all defects found, in report book. Defects reported, which are not repaired before the locomotive is returned to service, shall be filed in the office where the inspection is made.

Air Brakes. It must be known before each trip that the brakes on locomotive and tender are in safe and suitable condition for service; that the air compressor or compressors are in condition to provide an ample supply of air for the service in which the locomotive is used; and that all other devices for controlling or regulating the pressure are properly maintained.

Testing Main Reservoirs. Every main reservoir, before being put into service, and at least each 12 months thereafter, shall be subjected to hydrostatic pressure, not less than 25% above the maximum allowed air pressure. The entire surface of the reservoir shall be hammer-tested each time the locomotive is shopped for general repairs, but not less frequently than once each 18 months.

The draw gear between the locomotive and tender, together with the pins and fastenings, shall be maintained in safe and suitable condition for service. The pins and drawbar shall be removed and carefully examined for defects not less frequently than once each 3 months. Suitable means for securing the drawbar pins in place shall be provided. Inverted drawbar pins shall be held in place by plate or stirrup. (b) Two or more safety bars or safety chains of ample strength shall be provided between locomotive and tender (except when double drawbars are used), maintained in safe and suitable condition for service, and inspected at the same time draw gear is inspected. (c) Safety chains or safety bars shall be of the minimum length consistent with the curvature of the railway on which the locomotive is operated. (d) Lost motion between locomotives and tenders not equipped with spring buffer, shall be kept to a minimum and shall not exceed ½ in. (c) When spring buffers are used between locomotives and tenders, the spring shall be applied with not less than ¾ in. compression, and shall at all times be under sufficient compression to keep the chafing faces in contact.

Chafing irons of such radius as will permit proper curving shall be securely attached to locomotive and tender, and shall be maintained in condition to permit free movement laterally and vertically.

Draft gear and attachments on locomotives and tenders shall be securely fastened and maintained in safe and suitable condition for service.

Cab Lights. Each locomotive, used between sunset and sunrise, shall have cab lamps, which will provide sufficient illumination for the steam, air, and water gauges, to enable the enginemen to make necessary and accurate readings from their usual and proper positions in the cab. These lights shall be so located and constructed that the light will shine only on those parts requiring illumination. Locomotives used in road service shall have an additional lamp, conveniently located, to enable the persons operating the locomotive to easily and accurately read train orders and time tables, and so constructed that it may be readily darkened or extinguished.

The total lateral motion, or play, between the hubs of the wheels and the boxes on any pair of wheels shall not exceed the following limits:

| | |
|---|---|
| For engine truck wheels (trucks with swing centers) | 1 in. |
| For engine truck wheels (trucks with rigid centers) | 1½ in. |
| For trailing truck wheels | 1 in. |
| For driving wheels (more than 1 pair) not more than | ¾ in. |

These limits may be increased on locomotives operating on track where the curvature exceeds 20 degrees, when it can be shown that conditions require additional lateral motion.

Pilots shall be securely attached, properly braced, and maintained in a safe and suitable condition for service. The minimum height from the rail 3 in. and the maximum 6 in.

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**Brazilian Railway Electrification.**—A Rio Janeiro press dispatch says that the Paulista Ry. has given the General Electric Co., Schenectady, N.Y., a contract for the electrification of its lines, at a cost of over $2,000,000, which will include the electrification of 44 kilometers of double track, between Jundiahy and Campinas, the building of a 4,500 k.w. sub station at Louviers, and the supply of 12 electric locomotives.

**Canadian National Railway's Official Cars** — Replying to questions in the House of Commons recently, the Minister of Railways said that official cars are used by the management and superintendents in connections with operation over the entire system of 14,000 miles, the expenses of which are charged to operating expenses under the headings of administration and superintendence.

**Temiscouata Ry.'s Future.**—The Minister of Railways stated in reply to a question in the House of Commons recently that it is not the government's intention to acquire the Temiscouata Ry., running from Riviere du Loup, Que., to Edmundston, N.B., in order to make it a Canadian National Rys. branch.

**The Railway Maintenance of Way Men** through their brotherhood organization, will according to a press report, establish co-operative stores at several Canadian railway centers for the benefit of members. Arrangements are said to be in progress for a store in Windsor, Ont.

**The Point St. Charles Railway Y.M.C.A.** building at Montreal is reported to have been sold to the G.T.R. for conversion into an office building. A new building for Y.M.C.A. purposes will, it is said, be built on Wellington St., during this year.

## Birthdays of Transportation Men in May.

Many happy returns of the day to:

J. F. Aitchison, Auditor of Disbursements, G.T.R. and Grand Trunk Pacific Ry., Montreal, born at Edinburgh, Scotland, May 28, 1880.

Jas. Bain, Superintendent, Halifax & South Western Ry. (Canadian National Rys.), Bridgewater, N.S., born at Pictou, N.S., May 24, 1860.

B. A. Bourgeois, Assistant to Comptroller and Treasurer, Canadian Government Railways, Moncton, N.B., born there May 24, 1869.

B. T. Chappell, General Superintendent, Prairie District, Western Lines, Canadian National Rys., Saskatoon, Sask., born at Charlottetown, P.E.I., May 1, 1878.

N. R. DesBrisay, District Passenger Agent, C.P.R., St. John, N.B., born at Minneapolis, Minn., May 18 1888.

A. E. Duff, ex-District Passenger Agent, G.T.R., Toronto, now of Winnipeg, born at Sherbrooke, Que., May 1, 1872.

G. C. Dunn, Division Engineer, Grand Trunk Pacific Ry., Winnipeg, born at Quebec, May 13, 1862.

C. S. Gzowski, Jr., Special Engineer to Vice President, Operation, Etc., Canadian National Rys., Toronto, born there, May 1, 1876.

G. H. Hedge, Works Manager, Canadian National Rys., Winnipeg, born at Neath, Wales, May 26, 1865.

G. A. Hoag, Superintendent, Nipissing Division, Ontario District, Canadian National Rys., Capreol, Ont., born at Walters Falls, May 31, 1866.

J. Irwin, Superintendent, Division 4, Western District, Canadian National Rys., Calgary, Alta., born at Clinton, Ont., May 28, 1866.

J. N. Murphy, Roadmaster, C.P.R., Brandon, Man., born at Mooretown, Ont., May 10, 1879.

Sir Augustus M. Nanton, President, Winnipeg Electric Ry., and director, C.P.R., Winnipeg, born at Toronto, May 7, 1860.

A. V. Redmond, District Engineer, Central District, Canadian National Rys., Winnipeg, born at Kingston, Ont., May 16, 1879.

A. C. Shaw, Passenger Department C.P.R., Montreal, born at Detroit, Mich., May 12, 1865.

W. H. Snell, General Passenger Agent, C.P.R., Montreal, born at Palmyra, Neb., May 23, 1872.

W. Stapleton, District Passenger Agent, Canadian National Rys., Saskatoon, Sask., born at Bristol, Eng., May 20, 1884.

R. B. Teakle, Manager, Canadian Government Merchant Marine, Ltd., Montreal, born at Quebec, Que., May 19, 1877.

J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke, Que., born at Quebec, May 12, 1860.

H. K. Wicksteed, B.A.Sc., C.E., Consulting Engineer, Canadian National Rys., Toronto, born at Quebec, May 25, 1855.

C. L. Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto, born at Boston, Mass., May 23, 1871.

A. O. Wolff, Resident Engineer, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Copenhagen, Denmark, May 14, 1887.

# Freight Car Roofs.

By H. R. Naylor, Assistant Works Manager, Canadian Pacific Ry., Montreal.

Car roofs, or the upper covering of what are classed as house cars, are a most interesting study. In point of importance they may be considered almost as essential as the wheels of a car, for although the wheels are the principal factor in moving a car from one location to another, the roof provides the necessary protection for the merchandise, which otherwise would be damaged or totally destroyed. The essential features of a car roof are to act as a watershed, enclosing the car, thereby providing security for the contents, and also to effectively tie and brace the car superstructure. A car roof consists of a suitable framing, securely attached to the top of the side and end framing of the car, providing the necessary support for the roof boards, metal sheets, or other materials which form the outer covering. In Europe, where the roof type of car has not been adopted to the same extent as in America, large quantities of freight are transported in open top cars, over which tarpaulins are spread and fastened, to protect the lading from the weather. This system, however, is gradually being abandoned as new equipment is built, and the house class of car adopted.

It is interesting to note the progress made on this continent in car roof construction from the time when the outer covering consisted only of a single layer of boards having tongue and groove joints. In many instances, I believe it was customary to use a wood shingle roof, similar to that commonly used in house construction. Another method adopted, presumably to overcome the leakage, was to apply the roof boards lengthwise of the car, overlapping each other, similar to clapboarding on present day wooden buildings, but it can be readily understood that this method of construction proved unsatisfactory, and gave way to the double board roof which can be seen on a large number of cars even today. This was a decided improvement over the earlier types of roof, especially when at a later date a layer of waterproof paper was applied between the first and second course of boards, and became known as the "plastic roof." This roof undoubtedly protected the lading for some time, but it eventually became waterlogged, and a method was then sought to prevent the water leaking between the joints of the top course of boards, which rapidly destroyed the paper and bottom boards. This was overcome, to a great extent, by grooving the face of the top boards, the grooves acting as drains, carrying off the water, and protecting the joints from possible leakage. In fact, this is the most common type of roof to be found on stock and refrigerator cars at the present time. The plastic roof, however, proved unsatisfactory for box cars, as the top course of boards soon warped, shrunk, and split, due to the constant drenching and sun baking received, allowing the under courses of paper and boards to become waterlogged, setting up rapid decay and ending in numerous damage claims.

Metal Sub Roof.—So far it should be noted that only wood, paper, and, in some instances, canvas, were being used in roof construction, which in themselves are very poor weather-resisters, creating a demand for further improvements, which brought metal into use for the first time. The next step was a distinctly new departure, and brought into existence the metal sub roof, over which a wood roof was applied, for protection only. The roof framing consisted of a ridgepole, carlines and purlins, to which an addition was made in the form of cross rafters. The galvanized metal sheets were formed with corrugations, and fitted into suitable grooves in the ridgepole and rafters, providing altogether a fairly effective watershed. This was undoubtedly a distinct advance in roof design, and was the forerunner of the sub-metal roof on thousands of box cars at present, but it was not long before the usual complaints were being made about this new metal roof, owing to the grooved edges of the wooden rafters breaking away, allowing the metal sheets to sag and leak. This defect was eventually overcome by flanging the roof sheets, and applying a metal capping over the rafters, which enclosed the flanges of the roof sheets, making a continuous metal watershed for the full length of the car. With a few later modifications this was the final attempt along the lines of a metal sub-roof. Some of the principal objections to the metal sub-roof are that the roof sheets, in time, buckle up at the eaves, and work out of the grooves in the ridgepole. With the constant twisting and straining of the car superstructure, the metal sheets and caps are soon displaced and bent, and in making repairs to the outer wood roof, the metal sheets are frequently punctured by nails, carelessly driven, all of which result in damage to the lading. The outer wood roof also requires frequent renewal, on account of constant exposure, which is a rather expensive item, when added to the cost of maintaining the metal sub-roof.

Before passing to the consideration of more modern roofs, it should be observed that the metal sub-roof proved a distinct advance over the types previously used, and was, with a few exceptions, the standard design on box cars for upwards of 20 years, but the steady increase in car capacity, and length of train, threw an ever increasing load on the car superstructure, including the roof framing, this demanding in turn improved roof construction. This demand was met by adopting a roof framing made of steel, as in other parts of the car, for instance, the wooden carlines which were bolted to the sideplates, and a source of constant trouble, gave way to the steel carlines of various shapes, rivetted to the sideplates, in order to give greater rigidity and strength. Other parts of the roof framing were improved, and reinforced, in a similar manner, providing greater stability, which is most essential if the outer roof is to be protected from the racking and straining of the car superstructure. This demand for greater stability was largely responsible for an entirely new departure in roof design, for instead of placing the wood roof boards on the outside, as in the case of the metal sub-roof, the plan was reversed, the roof boards being applied direct to the roof framing, and the metal roof sheets used as an outer protection for the boards, in addition to acting as a watershed. The roof boards in this case, being applied direct to the roof framing, had the effect of bracing the roof against cornering and bulging, and brought into extensive use the outside metal roof.

The outside metal roof usually consists of one course of 13/16 tongue and groove boards, securely fastened to the roof framing, the outer metal roof being formed of galvanized iron sheets, generally of no. 22 gauge. At the junctions of the main sheets, weather-proof protection is provided by metal caps, formed in various ways to interlock with the flanged edges of the main sheets. The method of securing the outside metal sheets at the eaves is very different to that on the metal sub-roof. The roof sheets on the latter type are prevented from lifting, by the capping and outer wood roof, the fascia boards securing the sheets laterally on the car, making nailing unnecessary at the eaves. On the outside metal roof, the main roof sheets, or eave flashings, are flanged at the eaves, and secured to the outside of the fascia boards. This difference in the method of attachment on the early types of outside metal roofs, which were not designed to allow freedom of movement at the roof sheet intersections, resulted in cracked sheets and a considerable number of defective roofs, but eventually this was entirely overcome, by providing ample sideplay at the main sheet capping, and applying eave flashings, giving the roof the necessary flexibility to withstand the cornering, weaving and bulging of the superstructure. In the development of roof construction wood is being gradually eliminated, or restricted in its use, for instance, the wood framing is being abandoned in favor of steel, and as a roofing it is used only to protect or support the metal roof sheets, all of which is in keeping with the steady advance in car construction.

All Steel Roofs.—Progressing still further along these lines we find roofs today built entirely of steel, and in consequence known as all-steel roofs. In comparison with the composite roofs already described, the all-steel roofs presents an entirely new departure in design, both in regard to framing and roofing. The roof sheets are usually of 1/16 in. galvanized steel, but in some instances the sheets are 3/32 in. thick, and span the full width of the car, providing in themselves the necessary protection against puncture or other hard usage. Additional reinforcement can be obtained by corrugating the roof sheets at suitable intervals. The carlines in most cases are designed to provide ready means of connecting the roof sheets, in addition to supporting the roof, and bracing the superstructure of the car. With the adoption of the all-steel roof, the question of flexibility becomes a very live subject, some types provide for free movement of the roof sheets, in a similar manner to the flexible outside metal roof, while in others the roof sheets are flanged, capped and rivetted together, forming in themselves an absolutely rigid roof. It is claimed for the first type that the roof should be sufficiently flexible to take care of the constant straining of the car body, while in the rigid type the roof is made strong enough to resist the straining of the body, and act as bracing for the superstructure. The all-steel roof lends itself readily to the use of outside carlines, this arrangement giving the car a considerable advantage in loading space.

Other advantages are the reduction in fire risk, and final cost, owing to the life of the car, and finally, a greater safeguard against leakage is obtained by the use of thicker sheets, which resist corrosion and cracking to a greater extent, and as a result this type of roof is gradually meeting with more general approval.

An objection which is sometimes raised against the all-steel roof is the claim that under certain conditions it is liable to sweat, resulting possibly in damage to lading. For instance, freshly milled flour, containing a high percentage of moisture, and which is usually hot when loaded, quickly raises the temperature of the car above that of the outside atmosphere. It is claimed that the metal roof, being then subject to two widely varying temperatures, commences to sweat, and that the resultant moisture is sufficient to damage the contents. It is questionable, however, if this is of enough importance to warrant special attention when building box cars for general service requirements, but as a measure of precaution effective steps are being taken to prevent the possibility of this occurring, even under the most extreme conditions, and eventually there is good reason to believe that the all-steel roof will meet all requirements, even to the extent of satisfying the demands of very exacting shippers.

**Double Board Roof.**—As previously mentioned, the double board roof is the most common type on refrigerator and stock cars today, and while it meets the requirements for stock cars, it is rather surprising that a better roof has not been previously adopted for refrigerator cars, in order to protect the insulation more effectively. In making repairs to this class of car, it is often necessary to renew the whole roof insulation, and ceiling, which have become waterlogged and decayed, owing to the poor protection offered by the double board roof. The entire side and end framing, with their insulation, are often affected in a similar manner, due to the water working down through the defective roof. These conditions are becoming better recognized, and as a result we find the outside metal roof now being adopted for refrigerator cars. Owing to the metal roof being a greater conductor of heat, it might be necessary to increase the roof insulation, but the added cost would be more than offset by the saving in maintenance.

Having briefly sketched the development of the car roof from the old time shingle to the modern metal type, it may be well to summarize a few of the more essential features entering into roof design, and conclude with a reference to maintenance. In comparison with the roof of a stationary building, which, outside of providing the necessary shelter, has only to contend with wind pressures, the car roof has to withstand considerably more abuse, due to the fact that the car is constantly in motion, from the day it is built to the last day of its existence. Consider for a moment what happens to a car, especially a loaded car, when in a switching movement it is shot at a speed varying anywhere up to 10 miles an hour, on to a train of cars at rest. Many of us have seen this happen frequently, and still more have heard the report and marvelled that the cars withstood the racket. The underframe of the car in motion is immediately arrested on impact with the other car, but the car superstructure, with its contents, is not arrested so quickly, with the result that it is strained from end to end, including the roof, which ties the side and end framing together. The car roof must also take care of a bulging load, when grain or other material is carried in bulk, uneven track, curving, side wiping, and hump yard switching, all of which set up different strains, which must be considered and provided for in car roof construction, in order to keep clear of future trouble. It is these conditions that persuade many car builders to adopt a roof sufficiently flexible to accommodate the strains in order to ensure it being water tight. On the other hand, the advocates of the rigid roof believe in making the roof sufficiently strong to withstand the strain, and tie the superstructure together.

In conclusion, I may point to the importance of roof maintenance. A car roof should be so constructed that repairs can be made quickly, and at a minimum cost. The position of the roof, in relation to other parts of the car, does not lend itself to proper maintenance. Trucks, airbrakes and draft gear are constantly being inspected for indications of possible failure, but unfortunately, and all too often, the only warning received of roof failure is when the damage has actually occurred to the lading. Car roofs should therefore be as far as possible self maintaining.

Corrosion will be an important factor in modern roof maintenance, and calls for a systematic method of painting, for it cannot be expected that the galvanizing will protect the roof sheets indefinitely. The best designed car roof will only last in proportion to the maintenance it receives, and the object should be to make the life of the roof equal to the life of the car.

The foregoing paper was read before the Canadian Railway Club recently.

## Railway and Steamship Terminal for Sydney, N.S.

The Sydney, N.S., Board of Trade is reported to have received from the Public Works Department at Ottawa plans of a terminal dock to be built at Sydney towards the construction of which $100,000 on account is passed in this year's estimates. The plans are said to call for the construction of a pier 540 ft. x 72 ft., having on each side 2 ship berths, one 350 ft. long and one 150 ft. long, was a low water depth of 29 ft. on the inside berths and 30 ft. on the outside berths. A warehouse 450 ft. x 40 ft. is to be erected on the pier, on each side of which will be a 4 ft. platform, level with the freight car floors. Two railway tracks will extend to the head of the dock on either side of the shed. The dock will consist of 25 concrete crib piers filled with stone, and the approach will be by an earth embankment, and will be located at about the site of the old Intercolonial Ry. wharf. The cost of the work is estimate at $700,000 or $800,000.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and Public Elevators in the East.

| Week ending April 9th, 1920. | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William | | | | | | |
| C.P.R. | 89,515 | 30,622 | 131,286 | ..... | 55,762 | 307,185 |
| Empire Elevator Co. | 266,262 | 150,507 | 229,705 | 9,906 | 65,237 | 721,617 |
| Consolidated Elevator Co. | 264,444 | 39,173 | 121,344 | 30,211 | 16,651 | 471,823 |
| Ogilvie Flour Mills Co. | 795,851 | 26,093 | 83,562 | ..... | 63,114 | 968,620 |
| Western Terminal Elevator Co. | 147,920 | 56,118 | 24,018 | 15,794 | 11,395 | 355,245 |
| G. T. Pacific | 881,161 | 289,341 | 54,637 | 19,735 | 40,005 | 1,284,879 |
| Grain Growers' Grain Co. | 858,618 | 269,439 | 241,386 | ..... | 65,373 | 1,434,816 |
| Fort William Elevator Co. | 225,082 | 319,891 | 52,646 | 5,827 | 24,881 | 628,327 |
| Northwestern Elevator Co. | 484,098 | 26,855 | 87,660 | 43 | 69 | 598,725 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 2,316,188 | 902,946 | 358,079 | 327 | 69,508 | 3,647,048 |
| Sask. Co-op. Elevator Co. | 1,484,743 | 405,811 | 150,703 | 43,504 | 32,500 | 2,117,261 |
| Canadian Government Elevator | 190,269 | 87,277 | 34,651 | 59,830 | 27,523 | 399,550 |
| Thunder Bay | 481,154 | 471,459 | 103,106 | 13,966 | 23,426 | 1,093,966 |
| Davidson and Smith | 123,085 | 27,393 | 11,854 | ..... | 7,119 | 169,451 |
| Eastern-Richardson | 435,351 | 117,628 | 75,775 | 7,567 | 40,517 | 676,838 |
| Total Public Terminal Elevators | 9,143,741 | 3,220,553 | 1,760,412 | 210,280 | 543,080 | 14,878,066 |
| Total Private Terminal Elevators | 290,827 | 288,491 | 102,664 | 162 | 459 | 682,603 |
| Saskatton Can. Gov't. Elevator | 1,997,543 | 379,687 | 4,337 | 2,521 | ..... | 2,384,088 |
| Moose Jaw Can. Gov't. Elevator | 947,122 | 384,175 | 12,770 | 8,435 | 3,921 | 1,356,423 |
| Calgary Can. Gov't. Elevator | 1,365,475 | 582,356 | 69,961 | 1,365 | 21,820 | 2,039,977 |
| Vancouver, B.C. | 16,857 | 32,077 | 10,376 | ..... | ..... | 59,310 |
| *Total Interior Terminal Elevators | 4,326,997 | 1,378,295 | 96,444 | 12,321 | 25,741 | 5,839,798 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 3,000 | 23,524 | 73,158 | ..... | ..... | 99,682 |
| Midland Elevator Co. | 25,171 | 211,398 | ..... | ..... | ..... | 236,569 |
| Tiffin, G.T.P. | 61,145 | ..... | ..... | ..... | ..... | 61,145 |
| Port McNicoll | 207,483 | 140,489 | 3,415 | ..... | ..... | 351,387 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 321,092 | 22,400 | ..... | ..... | ..... | 343,492 |
| West Can. Flour Mills Co., Ltd. | 260,149 | ..... | ..... | ..... | ..... | 260,149 |
| Toronto Campbell Flour Mills Co. | 181,468 | 8,851 | 1,371 | ..... | ..... | 191,690 |
| Kingston— | | | | | | |
| Commercial Elevator Co. | ..... | 19,593 | ..... | ..... | ..... | 19,593 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 60,793 | 282,369 | 64,304 | ..... | 3,439 | 410,905 |
| Montreal Warehousing Co. | 441,323 | 12,342 | ..... | ..... | ..... | 453,665 |
| Ogilvie Flour Mills Co. | 259,423 | ..... | 1,380 | ..... | ..... | 260,803 |
| Quebec Harbor Commissioners | ..... | 30,671 | ..... | ..... | ..... | 10,671 |
| West St. John, N.B., C.P.R. | 486,898 | ..... | 136,905 | ..... | ..... | 623,803 |
| St. John, N.B., Can. Nat. Rys. | 352,686 | ..... | 91,307 | ..... | ..... | 443,993 |
| Halifax, N.S., Can. Nat. Rys. | 150,233 | ..... | ..... | ..... | ..... | 150,233 |
| Baltimore, U.S.A. | ..... | ..... | ..... | ..... | 8,336 | 8,336 |
| Total Public Elevators | 2,810,864 | 751,637 | 371,840 | ..... | 11,775 | 3,946,116 |
| Total Country Elevators | 14,148,779 | 10,368,491 | 1,739,249 | 324,697 | ..... | 26,581,216 |
| Total Quantity in Store | 30,721,208 | 16,007,467 | 40,706,609 | 547,460 | 581,055 | 51,727,799 |

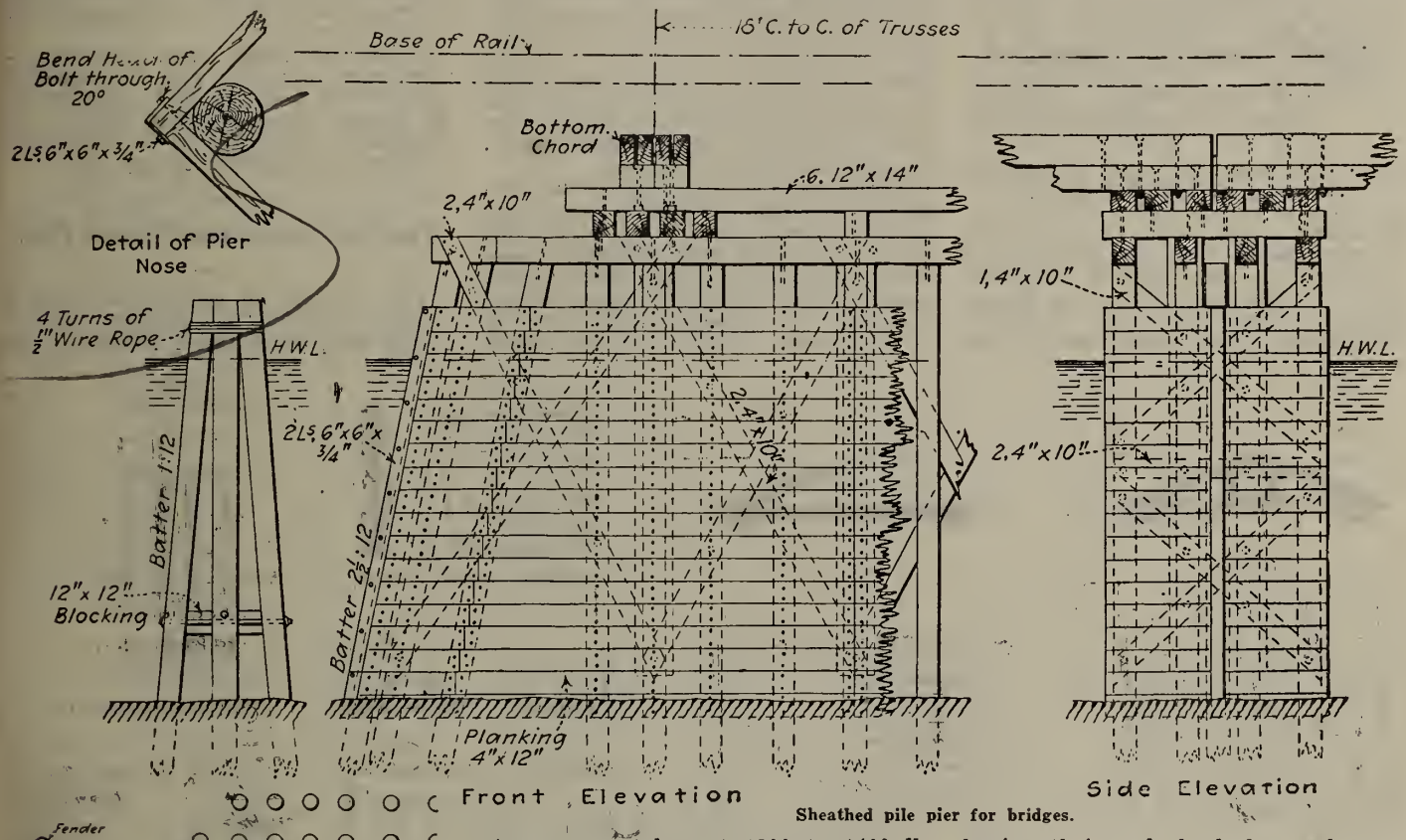
*Quantity for each individual interior terminal elevator not received.

# Timber Bridge Problems on the Alaska Railway.

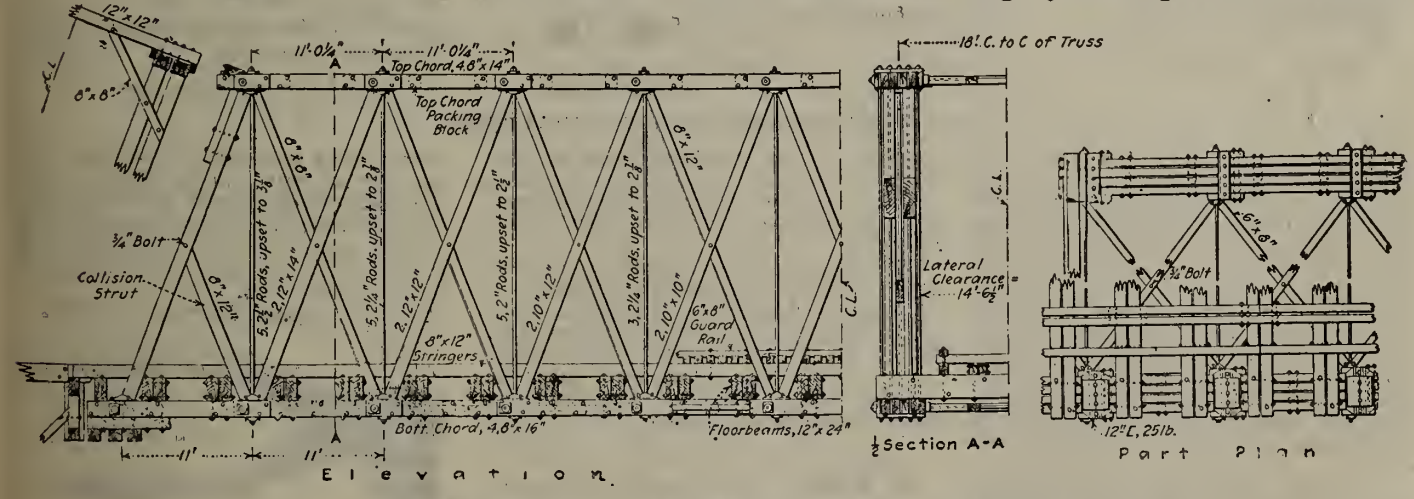
Timber truss spans used extensively on the Alaskan Government Railway consist mainly of 121-ft. Howe-truss through and deck spans of standard designs, with 56-ft. pony truss spans for small openings. Bridging Alaskan rivers involves careful consideration of flood, drift and heavy ice, especially in streams fed by glaciers, and these factors have to be reckoned with in regard to erection of falsework as well as pier construction. As delivery of material is likely to be uncertain at points located far from a base of supply, arrangements have been devised for carrying a temporary deck on the falsework bents in cases where material for the trusses is delayed.

Douglas fir is used exclusively, except that Alaska spruce has been employed to a limited extent for temporary structures and a few small spans. Working stresses are taken at 1200 to 1400 lb. per sq. in. for bending and 1000 lb. for compression, in case of fir, and 800 lb. for bending in case of the native spruce. No allowance for impact is included in these stresses. Rods and bolts are of wrought iron of 50,000-lb. tensile strength, or of soft bessemer or open-hearth steel conforming to the American Society for Testing Materials structural steel specifications. All truss spans are designed for Cooper's E-50 loading.

The general design and details of the 121-ft. through truss span are shown in the accompanying drawings. The top and bottom chords are composed of four sticks 8 x 14 in. and 8 x 16 in., respectively, with cast-iron angle blocks for the truss members and transverse steel channels as bearing for the washers of the vertical tension rods. Splices in the chord timbers are made with clamp bars having their ends hooked over lugs on clamp blocks bolted to the timbers. Floor-beams are pairs of 12 x 24-in. sticks, on which are track stringers composed of pairs of 8 x 12-in. sticks and single jack stringers of the same size.




Sheathed pile pier for bridges.

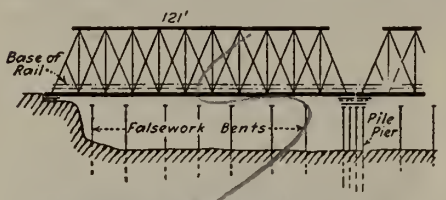



Standard design of 121-ft. timber truss through span, Alaska Railway.

A camber of 0.126 ft. is framed into the truss by means of blocking under the panel points of the bottom chords on the falsework during the erection of the bridge, the final adjustment being made by the tension rods.

The piers have four rows of piles with diagonal bracing and have an outside sheathing of horizontal planks to prevent the lodging of ice and drift. In tidal

waters, where the current may flow in either direction with changes of the tide, a pile cluster is placed 10 ft. above and below each pier to act as a fender and ice breaker. Falsework bents are arranged as shown in one of the drawings. Each bent has a 24-ft. cap, 12 x 12-in., driftbolted to four vertical piles




Typical 121-ft. timber truss span, with pile pier and falsework, Knik River bridge.

which are spaced 14 ft. on centers for the inner and 22 ft. for the outer piles.

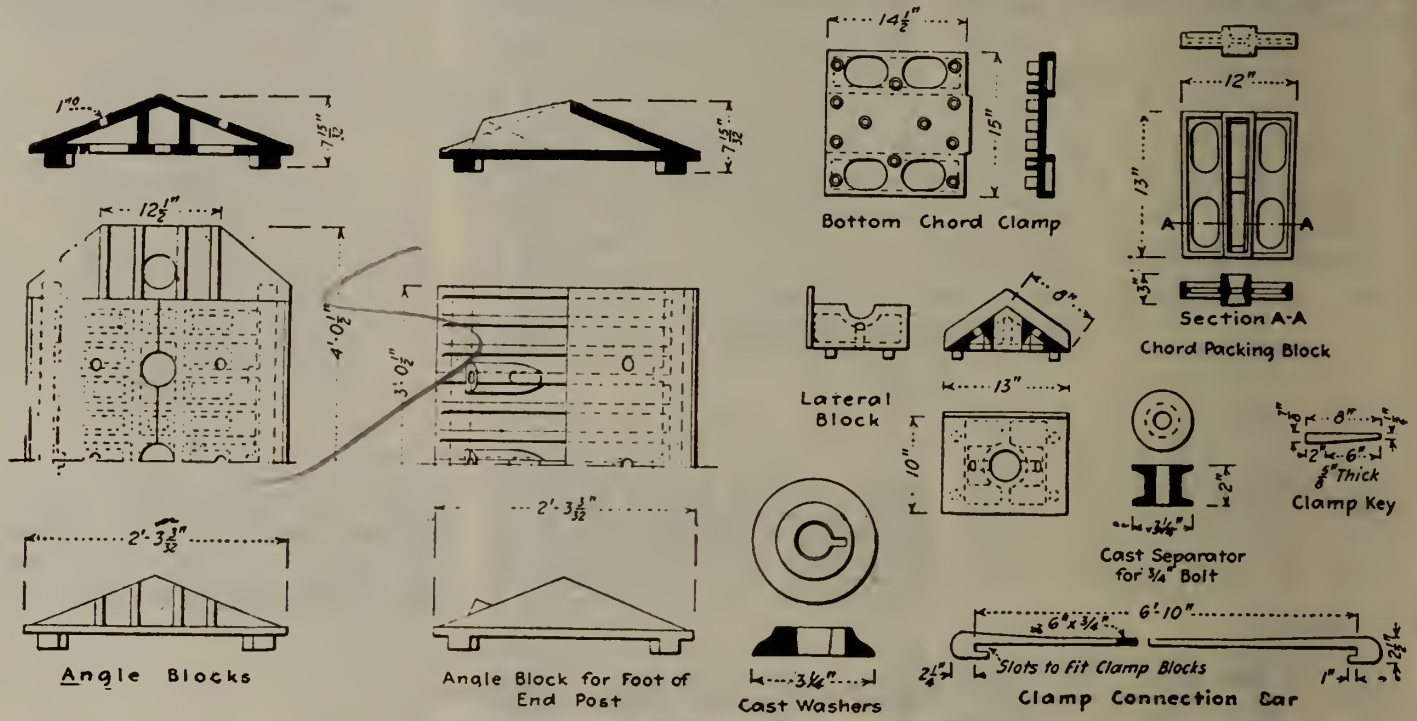
Carrying the floor or deck temporarily on the false-work bents is a special arrangement made in order to provide for handling traffic when material for the trusses is not at once available. Two lines of stringers, composed of two and three sticks with ends overlapping are laid on the falsework caps, with a transverse timber across them at each bent. Upon these timbers is a second and similar course of stringers carrying the track ties. The ties, stringers and cross timbers are secured by loose bolts termed 'drop bolts," which resemble drift bolts, but are fitted to holes bored to ⅛-in. larger diameter. This construction enables the temporary deck to be dismantled readily and without injury to the timbers.

Two of the larger bridges of this type, across the Knik and Matanuska Rivers, have six and five 210-ft. through truss spans, respectively. In these cases special provision had to be made for ice and floods, as both rivers originate from larger glaciers and carry immense quantities of floating ice and drift at certain seasons.

The Matanuska River (or Chatonka, meaning 'swift river") carries a large volume of water and quantities of driftwood. The Knik River (or Skidina, meaning "tent-house or summer-house river") comes from a glacier which has an extensive lake behind it. This lake overflows occasionally and breaks through the glacier, causing a destructive flood which covers the entire delta at the mouths of the two rivers. These floods occur generally during September and last from three to four weeks. The two bridges are located close to the mouths of the rivers and frequently the current is upstream, owing to the high tides in Knik Arm, which is a branch from Cook Inlet. The extreme difference in level between high and low tides is about 42 ft. at Anchorage, and more than this at the bridges, which are about 30 miles further up Knik Arm.

The largest bridge on the railway system will be that over the Tanana River at Nenana, where the width is over 800 ft. and soundings have shown fine sand down to a depth of 90 ft. This is to be a steel bridge, on concrete piers with ice breakers, and probably a liftspan will be provided on account of the river navigation. As this structure cannot be built for some time, it is proposed to establish a ferry to carry cars during the summer, while in winter a track can be laid on the ice.

All of this railway work has been under the direction of William C. Edes, until recently chairman and chief engineer of the Alaska Engineering Commission. W. J. H. Fogelstrom is Bridge Engineer, and the construction is done by railway forces under his supervision.—Engineering News Record.




Details of ironwork of timber truss used on Alaska Railway.

## Sir William Mackenzie's Private Car.

The following questions were asked in the House of Commons recently, by P. F. Casgrain, M.P. for Charlevoix-Montmorency, the answers being given by the Minister of Railways:—

1. Was Sir William Mackenzie's private car included in the rolling stock of the Canadian Northern Railway taken over by the Government? Answer. No.

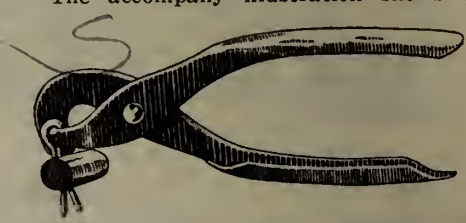
2. What office does Sir William Mackenzie hold in connection with the National Railways administration? Answer. Sir William Mackenzie holds no office of any kind, and has no connection in any way with the operation or administration of the Canadian National Rys. As ex President of the Canadian Northern Ry. he is allowed the transportation that all railways extend to ex presidents of railways and which is in accordance with the Railway Act.

3. Does he retain from the Government running rights with said car for himself, his lobbyists and solicitors at the present time? Answer. First part of question answer by no. 2. No special privileges are granted to any one.

## Tool for Extracting Cotter Pins

The removing of cotter pins is often a difficult job to the shopman, particularly when these are so located as not to be readily accessible. The tools most used for removing cotter pins are hammer and cold chisel, but there are many locations where a hammer cannot be used and the use of the cold chisel frequently damages the cotter pin to such an extent that it is worthless.

The accompany illustration shows a



tool for removing cotter pins which is of the same size as an ordinary pair of pliers. One tong of the pliers engages the pin, while the other uses all of the leverage exerted against the member through which the pin is inserted. As this leverage is four times as great as the actual force used the pin comes out quickly and easily.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alaska.—The United States Congress is being asked to grant $8,000,000 on account of construction work on the Alaskan railway for this current year. It is estimated that this will complete the railway through from Seward to Nenana on the Tanana River. Supplies are reported to have been assembled during the winter so as to permit the earliest possible start on the work. On the completion of this work there will remain to be complete the bridge across the Tanana River at Nenana, the standardization of the Tanana-Fairbanks line and some minor cleaning up work. It is estimated that this will absorb the $3,000,000 which will remain of the original vote of $52,000,000 after the $8,000,000 asked for this year has been granted. (Mar., pg. 135.)

Alberta-Hudson Bay Ry.—The Alberta Legislature has passed an act extending for five years the time within which this projected railway may be built. The lines proposed to be built would run from Calgary through the Southern Alberta coal fields to the International Boundary, and from Calgary easterly to the Alberta-Saskatchewan boundary. When the bill was before the Legislature it was stated that the company had acquired the High River & Hudson Bay Ry.'s rights, that the company had entered into an agreement with the Grain Belt Construction & Development Co., of which F. Crandall was Manager; that arrangements for financing the construction of the line had been completed; and that an understanding had been arrived at with P. Burns, who controls the Calgary & South Western Ry., and that in the event of the A.H.B. Ry. building its line into the coal areas at once that company would forego its rights and use the A.H.B. Ry. (Mar., pg. 135.)

Edmonton, Dunvegan & British Columbia Ry.—The Albert Legislature has passed an act providing that in the event of the Dominion Government not acquiring the company's lines, the Alberta Government may enter into an agreement with the company to take over, operate and improve the line, including the Central Canada Ry. The lines may be taken over by means of a receivership or a managership. The act provides that $1,000,000 may be borrowed and paid out to the receiver or manager to carry out the terms of the agreement, which are under discussion, and will not be completed until the Dominion Government's intentions are fully known. A further sum of $100,000 was also voted to assist in a similar way any other railway in the province the bonds of which have been guaranteed by the province. It is said that the railway to be benefitted by this second vote is the Alberta & Great Waterways Ry., which, like the Central Canada Ry., is a branch of the E., D. & B.C. Ry.

A press report states that rails are to be laid for 12 miles west of Spirit River, on the E., D. & B.C. Ry. completed grade, in order to reach a block of timber land, where ties and other railway timber may be obtained. (April, pg. 175.)

Esquimalt & Nanaimo Ry.—The British Columbia Legislature has passed an act validating agreements made between the Victoria City Council and the Esquimalt & Nanaimo Ry., and between the Victoria City Council and the British Columbia Government, and the city's by-law, passed in connection therewith, respecting the construction of the Johnston St. Bridge, Victoria, and to enable the city council to build the bridge. We are officially advised that the only change made in the bill as finally passed and the one passed originally and returned to the legislature by the Lieutenant-Governor for amendment, was in punctuation, that of the agreement forming the schedule to the bill, not being in agreement with that in the bylaw as published. (April, pg. 175.)

Great Northern Ry.—The Cawston, B.C., Board of Trade is reported to have been asked if 150 ft. of additional spur track, a cinder platform and a portable station would meet the demand for present improvements at that point. The board asked for further information respecting what was meant by a portable station. (Dec., 1919, pg. 604.)

Hudson Bay Ry.—The Minister of Railway, in reply to questions in the House of Commons recently, gave the following information:—The contract for the substructure of the bridge over the Saskatchewan River at Pas, Man., was executed, Nov. 5, 1910, and the general contract for the construction of section No. 1 of the railway was executed Sept. 25, 1911; construction was stopped on the railway in 1918, and on the terminals in 1917. The grade is nominally completed to Hudson Bay; some trestling and small structures remaining to be built, and the settlement of embankments and train filling at various points to be made up. This work was completed ni 1917. Rails had been laid on 332 miles, up to the end of 1918; there are still 92 miles of rails to be laid. The cost of the bridge across the Nelson River at Manitou Rapids was $215,596.34, and of that across the Nelson River at Kettle Rapids $406.572.65, these works being completed in 1917 and 1918, respectively. The total expenditures on the railway and terminals at Mar. 31 in each of the followings years was:—

| | Railway. | Terminals. |
|---|---|---|
| 1914 | $4,569,908.01 | $1,517,124.66 |
| 1915 | 7,825,982.40 | 3,588,668.03 |
| 1916 | 10,809,407.87 | 4,940,500.56 |
| 1917 | 12,601,598.26 | 5,752,590.11 |
| 1918 | 13,890,387.87 | 6,343,499.50 |

The estimated cost of completing the track laying into Port Nelson is $1,750,000, but to complete the railway would require $4,000,000.

A press report states that as a result of a conference between the Minister of Railways and the western members of Parliament recently an opportunity will be given during this session of the House of Commons for a full discussion of the situation as to the H.B. Ry. The Yorkton Board of Trade has suggested that the Government issue $5,000,000 of 20-year bonds for the completion of the line, the bonds to be sold in the west.

The Manitoba Legislature has passed a resolution asking for the completion of the line.

A press report from Ottawa states that a group of western members proposes to oppose the granting of supplies for the Welland Canal and other construction work, unless a vote is also approved for the completion of the Hudson Bay Ry. (April, pg. 175.)

The committee appointed by the Senate early in 1919 to investigate the navigability of Hudson Bay and Strait, and of Hudson Bay ports, with regard to their fitness as railway terminals, as well as on the fishery resources of the Bay, was reappointed by the Senate April 22. The committee has power to continue its work between sessions. Senator Fowler, chairman of the committee, explained that it was nearly ready to make its report, and the reappointment was desired so that the report might be presented.

Kettle Valley Ry.—The British Columbia Legislature has confirmed an agreement between the B.C. Government and the Kettle Valley Ry. Co., with respect to the construction of a railway from Penticton towards the International Boundary.

The British Columbia Legislature has authorized the Government to enter into a contract with the Kettle Valley Ry. Co. to build a line from Coalmount, near Princeton to the Granite Creek coal mines.

We are officially advised that on account of labor conditions in British Columbia it is not possible to state definitely what construction will be carried on during this year. (April, pg. 175.)

Morrisey, Fernie & Michel Ry.—The annual report of the Crows Nest Pass Coal Co., which owns the railway, states that during 1919 the company expended $29,647 on improvements.

The Northern Light Rys. Co. is the title of a company proposed to be incorporated by a bill which was approved by the Ontario Legislature's railway committee April 17. The promoters ask power to build a number of light railways in the mining districts of Northern Ontario, the routes of which were described in Canadian Railway and Marine World for April, pg. 194. The persons named as incorporators of the company are: E. T. Williams, manufacturer; Miss Isabel Gee, clerk, and H. R. Webster, student-at-law, Toronto. (April, pg. 194.)

Pabos, Amqui & Edmundston Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Pabos, Gaspe County, Que., along the Grand Pabos River valley across Pabos Seignory, an unorganized territory in Bonaventure and Matane Counties, Blais and Lepage Tps., crossing the Canadian National Rys. at Amqui station, thence on to Edmundston, N.B., with a branch from Grand Valle, a seaport on the St. Lawrence River, to the main line. The company's authorized capital asked is $4,000,000, and power is asked to issue securities for $75,000 a mile of line. The office is to be at Amqui, Que. The provisional directors are:—D. N. Dube, J. A. Brilliant, J. A. Desbiens, G. L. Dioune, M. Caron, L. A. Peduault, G. Langlois, of Amqui; J. Sirois, Val-Brillant, Que.; J. T. Bertrand, L'Isle Verte, Que.; J. A. Guy, Edmundston, N.B. (Mar., pg. 136.)

Pacific Great Eastern Ry.—A contract for a bridge over Deep Creek, B.C., is reported to have been given the Canadian Bridge Co. for $330,220.

Quebec & Saguenay Ry.—Replying to questions in the House of Commons recently, the Minister of Railways said the work of bringing up the condition of the Quebec & Saguenay Ry. to standard was being carried on by the contractors, and that until they had ceased work the railway could hardly be said to be completed. During the time the contractors are at work it is deemed advisable that the operation of the railway be carried on under their superintendence. It is expected that the railway will be finally completed during this year.

The funds accruing from itis operation are paid or credited to the Railways Department. (Oct., 1919, pg. 536.)

Quebec Central Ry.—A press report states that a contract has been let to J. T. and J. F. Davis, Montreal, for grading, concrete and masonry work on the eight mile extension from Scotts Station to St. Isidore, Que., which will give the company direct connection into Quebec City by using a short section of the National Transcontinental Ry. and the Quebec bridge.

The report also states that it is expected that construction will be gone on with at an early date on the 25 mile extension of the Chaudiere Valley line from the present terminus at Lake Frontier to St. Pamphile, for which the Quebec Legislature granted a land subsidy last session. This line will, it is stated, open up a valuable section of the country for colonization and traffic. (Mar., pg. 137.)

Quebec Rapid Transit Ry. Co. — The Dominion Parliament is being asked to extend the time within which the company may extend its projected railway. A. Taschereau, Quebec, is solicitor for the applicants. The company was incorporated by the Dominion Parliament in 1913 to build a railway from Quebec through Charlesbourg, Jeune Lorette, Aucrenne Lorette, St. Foye, Cap Rouge, Sillery and Montcalm; also from Charlesbourg, through Riviere Jaune, Notre Dame des Laurentides, and Lake St. Charles to Jeune Lorette; also a line round Orleans Island and across the island, and a bridge from the north shore of the St. Lawrence River to Orleans Island. The company is authorized to enter into agreements with other railways, including the Quebec Ry., Light & Power Co., as regards its railways. The original incorporators were farmers and others along the route of the projected railway.

The Q. Ry., L. & P. Co. has recently been in negotiation with certain interests regarding a proposition for the construction of a line from Quebec to Loretteville.

Reid Newfoundland Co.—H. D. Reid, President, Reid Newfoundland Co., prior to leaving Montreal for Newfoundland recently is reported to have stated that it is proposed to build an hotel at St. John's at an estimated cost of $500,000, in conjunction with local interests, and that progress will be made with the work of developing the company's lands, etc.

Timiskaming & Northern Ontario Ry. The Ontario Legislature has passed a resolution to the effect that a great impetus would be given to the development of New Ontario by the extension of the T. & N. O. Ry. from Cochrane to Moose Factory, on Hudson Bay. The resources of the area between these two points now being practically unattainable on account of transportation difficulties, which condition should be remedied at the earliest possible date. Premier Drury, in the course of the discussion, stated that the government had placed in the estimates $125,000 for surveys and explorations in connection with this matter. The extension of the railway to James Bay would be the logical outcome and rounding out of the T. & N. O. R. system, but he believed that the government would be unwise to commit itself to the immediate building of the railway for financial reasons.

On the same day a resolution was proposed by R. R. Hall, M.L.A., favoring the building of a branch of the T. & N. O. Ry. from North Bay to Parry Sound. The debate was adjourned and on a subsequent date the motion was withdrawn, the government having promised to look into the matter. (April, pg. 176.)

Toronto, Hamilton & Buffalo Ry.—The Board of Railway Commissioners has ordered that the company proceed with the construction of the highway bridge at King St., Hamilton. The existing bridge has been shown to be unsafe and inadequate to present traffic requirements.

The Board of Railway Commissioners has made an order, amending a previous order, directing Barton Tp. Council to bear all cost of maintenance of a crossing over the railway at Barton Ave., Hamilton. (April, pg. 176.)

## Canadian National Railways Construction, Betterments, Etc.

Prince Edward Island Ry.—The Minister of Railways, during a discussion of the Canadian National Railways, was asked in the House of Commons recently as to whether it is the government's intention to proceed with the widening of the gauge over the whole of the P.E.I. Ry. The Minister replied:—"We shall not proceed with that work during the present year. By standardizing the gauge between Charlottetown and Summerside we can take care of about 75% of Prince Edward Island's trade. As soon as financial considerations permit standardizing the gauge of the whole railway will be proceeded with, but not this year. The other parts of the island have the narrow gauge system and the only inconvenience involved is where there is trans-shipment. This, however, is not serious, because it is done by the railway forces at Charlottetown. The widening that has been so far done is of great importance and I quite appreciate the necessity for completing the work over the whole line as soon as possible. But financial conditions, we felt, would not justify our doing it during this year.

Sydney Dry Dock.—A press report states that work is about to be started on the construction of a spur line to connect the C.N.R. with the site of a dry dock to be built at Sydney, N.S., by the Sydney Foundry & Machine Co.

Stewiacke District.—At a conference at Truro, N.S., April 5, it was decided to ask the Dominion Government to build a loop line from Brookfield, serving Middle and Upper Stewiacke districts, and connecting with the Musquodoboit Ry. at its terminus at Deans, N.S. It was stated that a line had been surveyed and partly graded some years ago through the district, and that the area contains large timber, coal, iron, silver and gold resources.

Gosford Branch.—A press report states that Edward Conway has leased the Gosford Branch of the Quebec & Lake St. John Ry., that he has bought a gasoline engine and several cars, and that he will put the line in condition for operation.

Fort William to Winnipeg Pits. — A press report states that work has been started on the repair, replacing and filling of trestles on the National Transcontinental Ry. between Fort William and Winnipeg Pits, preparatory to reballasting the line. Work depots are stated to have been opened at Sioux Lookout, Vivian and Watcombe, Ont.

Lampman Coalfields.—At a meeting of the House of Commons railway committee April 15, O. R. Gould, M.P., urged the completion of an extension of the Canadian Northern Ry. to the Lampman coalfields, Sask., and the building of a half mile transfer switch to connect the C.N.R. with the C.P.R. at Carlisle, Sask. The Minister of Railways stated that the suggested extension of 9 miles was one among many other suggestions under consideration by the C.N.R. directors and would be built as soon as the board could see its way clear to authorize the expenditure. With regard to the switch at Carlisle he suggested that application should be made to the Board of Railway Commissioners to order it to be put in.

North Battleford-Turtleford Branch Extension.—A press report states that it is proposed to build a 25 mile extension of the branch line from North Battleford, which at present is operated to Turtleford, 55.9 miles.

White Court to Grande Prairie. — A delegation of soldier settlers of the Grande Prairie district, Alberta, waited on the Dominion Government, April 16, and urged the building of a branch line from White Court, on the Peace River branch, to the Grande Prairie country. Grande Prairie is now reached by an Edmonton, Dunvegan & British Columbia Ry. branch from Spirit River.

British Columbia Terminals.—The B.C. Legislature has passed an act extending for a year the time within which the proceeds of the guaranteed securities held by the Finance Minister in respect of the works to be carried out under the Canadian Northern Pacific Ry. Extension Act, and the Canadian Northern Pacific Ry. Terminals Act, both passed in 1913, may be paid out. A statement as to the total amounts of guaranteed securities, the amounts expended and the amounts available for further expenditures were given in Canadian Railway and Marine World for April, pg. 195.

Vancouver Island.—A recent British Columbia press report stated that a freight service was about to be inaugurated on the Victoria-Alberni line between Victoria and the Koksilah River, to which point track had been laid. The bridge over the river was expected to be completed towards the middle of April, when tracklaying was expected to be resumed on the 16 miles intervening to the Canyon crossing of the Cowichan River. It is expected that the bridge across the river will be complete in about three months, and that track will be laid to the Nitinat River this year. (April, pg. 186.)

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The Gowganda Engineering & Construction Co., Ltd., has been incorporated under the Ontario Companies Act, with $40,000 authorized capital and office at Toronto, to carry on a general mining and construction company, with power to build tramways, railways, bridges, water courses, wharves, warehouses, etc. The provisional directors are: T. R. Ferguson, G. R. Sproat, and W. T. Jones, Toronto.

Canadian Transfer Co., Ltd. has been incorporated under the Dominion Companies Act, with $500,000 authorized capital, and office at Montreal, to take over as a going concern, and carry on, the business of the Canadian Transfer Co., Ltd., with head office in Montreal, and offices at Toronto, Ottawa and Hamilton, and to carry on a general cartage contracting and forwarding business.

# Mainly About Railway People Throughout Canada.

**Harry Raymond Arthur**, whose appointment as Trainmaster, Canadian National Rys., Lucerne, B.C., was announced in our last issue, was born at Lewisburg, Pa., May 25, 1875, and entered railway service June 15, 1890, since when he has been, to 1896, agent and operator at various points Chicago and North Western Ry.; 1896 to 1899, assistant to chief clerk, Local Freight Office, Sioux City and Northern Ry., Sioux City, Ia.; 1891 to 1904, chief clerk to Commercial Agent (Traffic), Illinois Central Rd., Sioux City, Iowa; 1904 to 1912, Division Freight Agent, travelling auditor and chief clerk to Auditor of Station Accounts, same road, Fort Dodge, Iowa, and Chicago, Ill.; Oct., 1912, to Feb. 1, 1913, Travelling Car Agent, Canadian Northern Ry., Winnipeg; Feb. 1, to Nov. 18, 1913, chief clerk, General Manager's office, same road, Winnipeg; Nov. 18, 1913, to Nov. 20, 1915, Inspector of Transportation, same road, Winnipeg; Nov. 20, 1915, to Dec. 18, 1918, Inspector of Transportation, same road, Vancouver, B.C.; Dec. 18, 1918, to Jan. 1, 1919, acting Superintendent, same road, Kamloops Jct., B.C.; Jan. 1, 1919, to Feb. 17, 1920, Trainmaster, Canadian National Rys., Saskatoon, Sask.

**John Alton Audrain**, who has been appointed station master, C.P.R., Winnipeg, was born at St. John's, Jersey, Channel Islands, Jan. 23, 1883, and entered C.P.R. service in April, 1897, since when he has been, to 1904, apprentice, car shops, Winnipeg; 1904, to July 1, 1905, mechanic, car shops, Winnipeg; July 3 to Aug. 31, 1905, express messenger, Dominion Express Co., Winnipeg to Gretna and Emerson; Aug. 31, 1905, to May 1, 1906, mechanic, car shops, C.P.R., Winnipeg; May 10, 1906, to July 28, 1910, brakeman and baggageman, main line and branches out of Winnipeg; July 28, 1910, to Sept. 7, 1915, station master, Winnipeg; Sept. 7, 1915 to Jan., 1916, Trainmaster, C.P.R., Minnedosa, Man.; Jan., 1916, to April, 1920, Trainmaster, Saskatoon, Sask.

**H. H. Ayer**, Special Auditor, Canadian National Rys., Montreal, died there, April 5, after a short illness.

**J. H. Barber**, who has been appointed Division Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto, was born near Cobourg, Ont., Dec. 20, 1856, and educated in Toronto. He was an articled pupil of James Ross, C.E., from 1875 to 1878, and was engaged as Assistant Engineer, and Division Engineer, on various sections of location and construction on the C.P.R. up to 1891. In 1891 he was appointed Resident Engineer, Maintenance of Way Department, C.P.R., Toronto, and was later appointed Division Engineer, Atlantic Division, C.P.R., St. John, N.B., holding that position until April, 1906, to 1916, Division Engineer, Eastern Division (now Quebec District); C.P.R., Montreal; 1916 to April, 1920, on special work at various points, including double tracking and grade separation, etc., Toronto.

**Thomas J. Burns**, Superintendent, Rolling Stock, Michigan Central Rd., died at Detroit, Apr. 18. He was born at Hillsdale, Mich., July 24, 1868, and was educated at Assumption College, Sandwich, Ont., and the Grand Seminary, Montreal. He entered M.C.R. service Apr. 4, 1890, as clerk in the Maintenance of Way Department, Bay City, Mich., and was promoted to locomotive dispatcher Nov. 1, 1896; appointed chief clerk to Master Mechanic, Jackson, Mich., Dec. 15, 1902; and was, from Aug., 1905, to July 1, 1909, chief clerk to Superintendent Motive Power; July 1, 1909, to June 1, 1912, Assistant to Superintendent , Motive Power; May 1, 1915, on the separation of the Locomotive and Car Departments, he was appointed Superintendent Rolling Stock, and held that position at the time of his death.

**His Honor L. H. Clarke**, Lieutenant-Governor of Ontario, and R. Home Smith, are spoken of as probable members of the commission to prepare for taking over the Toronto Ry., and to operate it after it becomes municipally owned. Sir John Woods and Mayor Church are also mentioned for the third membership of the commission.

S. W. Crabbe,
Superintendent, Smiths Falls Division, Quebec District, Canadian Pacific Railway.

**Stanley W. Crabbe**, who has been appointed Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., was born at Teeswater, Ont., Aug. 9, 1885, and entered C. P. R. service in 1903, since when he has been, to Mar. 11, 1918, section laborer, telegraph operator and agent, consecutively, at different points; Mar. 11, 1918, to Apr. 1, 1920, Superintendent, Schreiber Division, Ontario District, C. P. R., Schreiber, Ont.

**Victor Albert George Dey**, who has been appointed Division Engineer, Bruce Division, Ontario District, C. P. R., Toronto, was born at Aberdeen, Scotland, Feb. 4, 1883, and entered railway service in Sept, 1903, since when he has been, to June, 1907, draftsman, C.P.R., Montreal; June, 1907, to June, 1911, office engineer, Quebec, Montreal & Southern Ry., Montreal; June, 1911, to Aug., Department, C.P.R., Montreal; Aug., 1918, to Apr. 1, 1920, Division Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto.

**J. E. Duval**, General Superintendent of Car Service, G.T.R., Montreal, died there Apr. 28, after a very short illness, aged 60. He entered transportation service in Nov., 1884, as agent and operator, Canada Atlantic Ry., now part of the G.T.R., at Coteau Landing, Que., and from May, 1885, to 1902, was train dispatcher; 1902 to 1904, Chief Inspector, Board of Railway Commissioners; and in 1906 he organized the Canadian Car Service Bureau, of which he was appointed Manager, holding that position until Aug. 1, 1913, when he was appointed General Superintendent of Car Service, G.T.R., and in Feb., 1917, General Superintendent of Transportation, G.T.R., Montreal., and from Feb., 1917, was General Superintendent of Car Service, G.T.R., Montreal.

**James Ferguson**, whose appointment as Trainmaster, Canadian National Rys., Prince Albert, Sask., was announced in our last issue, was born at Woodbridge, Ont., June 17, 1878, and entered railway service Oct. 10, 1892, since when he has been, to Nov. 1, 1893, assistant agent, G. T. R., New Lowell, Mass.; Nov. 1, 1894, to June 5, 1895, o erator at various points, G. T. R.; June 5, 1895, to Jan. 1, 1899, agent and operator at various points, C. P. R.; June 1, 1899, to Sept. 1, 1902, agent, Canadian Northern Ry., Belmont and Winnipeg, Man.; Sept. 1, 1902, to Jan. 13, 1907, dispatcher, same road, Port Arthur, Ont.; Aug., 1907, to Feb. 11, 1920, in train service, same road, Port Arthur, Ont.

**W. R. Fitzmaurice**, who has been appointed Superintendent, New Glasgow Division, Maritime District, Canadian National Rys., New Glasgow, N.S., was born at Bedford, N.S., March 19, 1870, and entered I.R.C. service May 21, 1886, since when he has been, to 1889, operator at various stations in Nova Scotia; 1889 to 1897, assistant agent, Springhill Jct., N.S.; 1897 to 1898, agent, Oxford Jct., N.S.; 1898 to Aug. 12, 1913, agent, Amherst, N.S.; Aug. 12, 1913, to Sept. 28, 1915, assistant Superintendent, Moncton-Ste. Flavie District, Newcastle, N.B.; Sept. 28, to Nov., 1915, acting Superintendent, District 2, Campbellton, N.B.; Nov., 1915, to Aug. 31, 1916, Assistant Superintendent, Moncton-Ste. Flavie District, Newcastle, N.B.; Aug. 31, 1916, to Apr. 24, 1920, Superintendent, District 2, Intercolonial Ry., now Campbellton Division, Maritime District, Canadian National Rys., Campbellton, N.B.

**Charles Harry Fox**, whose appointment as Assistant District Engineer, Manitoba District, C. P. R., Winnipeg, was announced in our last issue, was born there, Apr. 2, 1885, and entered C. P. R. service in May 1902, since when he has been, to July, 1903, clerk, Construction Department, Winnipeg; Aug., 1903, to Sept., 1904, rodman, maintenance of way, Fort William, Ont., and Brandon, Man.; 1904 to 1910, at McGill University, and during vacations, transit man, maintenance of way and construction, Winnipeg; Apr. to Dec., 1910, Resident Engineer on construction, Winnipeg; Dec., 1910, to Apr., 1912, Resident Engineer, Maintenance of Way, Fort William, Ont.; Apr., 1912, to Oct., 1916, Assistant Division Engineer, Winnipeg; Oct., 1916, to May, 1918, Division Engineer, Winnipeg; May, 1918, to Jan., 1919, on military service; Jan., 1919, to Mar., 1920, Division Engineer, Maintenance of Way, Regina, Sask.

**J. Graff**, civil engineer, was asphyxiated, owing to a leakage of gas in his bed-

room, at Seattle, Wash., Apr. 12. He was some years ago engaged in considerable railway construction work, having had charge of location at different times for Northern Pacific Ry., Great Northern Ry., Chicago, Milwaukee and Puget Sound Rd., in the United States, and C.P.R. and Esquimalt and Nanaimo Ry. in Canada.

G. G. Graham, exchange agent, Passenger Department, C.P.R., St. John, N.B., and Quebec, Que., during the respective seasons, has resigned and removed to Perth, Ont., where he has taken up farming. Before leaving St. John, he was presented with a set of pipes and a purse of money by a number of his associates.

Gordon Grant, Consulting Engineer, Railways and Canals Department, Ottawa, and heretofore Chief Engineer, Quebec & Saguenay Ry., has been appointed Chief Engineer of the Dominion Highways Commission. He continues as Consulting Engineer, Railways and Canals Department, but his duties as Chief Engineer, Quebec & Saguenay Ry., have ceased, the line having been transferred to Canadian National Rys., for operating purposes.

H. C. Grout, who has been appointed General Superintendent, Ontario District, C.P.R., Toronto, was born at Wausau, Wiss., Mar. 14, 1881, and has been, to Feb., 1899, rodman; Feb., 1899 to Apr., 1901, leveller; Apr., 1901 to Apr., 1903, transit man; Apr., 1903 to Apr. 1, 1907, Resident Engineer, Toronto; Apr. 1, 1907 to Apr. 1, 1908, Assistant Division Engineer; Apr. 1, 1908, to Apr. 20, 1909, Resident Engineer, Toronto; Apr. 20, 1909 to Jan., 1910, Assistant Superintendent, District 3, Ontario Division, Toronto; Jan., 1910 to Feb., 1912, Assistant Superintendent, District 1, Ontario Division, Havelock; Feb. to July, 1912, Superintendent, District 1, Ontario Division, Toronto; July to Nov., 1912, Superntendent, District 1, Atlantic Division, St. John, N.B.; Nov., 1912 to May, 1913, Assistant General Superintendent, Atlantic Division, St. John, N.B.; May, 1913, to Sept., 1914, acting General Superintendent, Atlantic Division, St. John, N.B., and from Sept., 1914, General Superintendent, Atlantic Division, now New Brunswick District, St. John, N.B. Prior to leaving St. John, he was entertained at luncheon at the Union Club, Apr. 21, by a number of public officials and other citizens.

William C. Guthrie, who has been appointed Superintendent, Schreiber Division, Ontario District, C.P.R., Schreiber, Ont., was born at Arnprior, Ont., June 15, 1876, and entered C.P.R. service in 1892, since when he has been, to 1893, section laborer; 1893 to 1895, relieving section foreman; 1895 to 1898, section foreman; 1898 to Dec. 1, 1903, extra gang foreman, North Bay, Ont.; Dec. 1, 1903, to Feb. 1, 1911, Roadmaster, Chapleau, Ont.; Feb. 1, 1911, to Feb. 1, 1912, Roadmaster, North Bay, Ont.; Feb. 1 to Dec. 1, 1912, Roadmaster, Mattawa, Ont.; Dec. 1, 1912, to Apr. 1, 1920, Superintendent, Chapleau Division, Ontario District, Chapleau, Ont.

D. B. Hanna, President, Canadian National Rys., unveiled on April 16, an oil painting of Noel Marshall, President, Canadian Red Cross Society, which was presented to the National Club, Toronto, by a number of Mr. Marshall's fellow members. Mr. Hanna addressed the Lindsay, Ont., Board of Trade on Apl. 13, and spoke at a dinner given by the Quebec Board of Trade, on Apl. 21.

Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co., Hamilton, Ont., who, as stated in Canadian Railway and Marine world for April, left there Mar. 15, to spend some time in the south, but became worse on reaching Washington, D.C., and had to return to Philadelphia for treatment, went back to Washington, where he is seriously ill.

Jacob Samuel Lillie, whose appointment as Land and Tax Agent, Western Lines, G. T. R., Detroit, Mich., was announced in our last issue, was born at Sullivan, Ind., Jan. 9, 1888, and entered railway service in June, 1911, since when he has been, to Sept., 1911, rodman and levelman, Illinois Central Rd., Natchez, Mo.; June, 1913, to May, 1915, rodman and transit man, same road, Mattoon, Ill.; May to June, 1915, in valuation department, same road, Chicago, Ill.; June to Sept., 1915, leven man, same road, in Missouri, Arkansas and Kentucky; Sept., 1915. to Aug. 1916, in Land and Tax

J. E. Duval,
General Superintendent of Car Service, Grand Trunk Railway, who died at Montreal, Apr. 28.

Commissioner's office, same road, Chicago, Ill.; Aug., 1916, to May, 1918, land accountant in charge of land work, Valuation Department, Western Lines, G. T. R., Detroit, Mich.; May to Oct., 1918, Assistant Land and Tax Commissioner, same road, Detroit, Mich.; Oct., 1918, to Mar. 1, 1920, Land and Tax Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich.

J. W. Lyon, of Guelph, Ont., who has been an active worker for hydro electric railways in Ontario, fell on a slippery bridge recently, and broke his right shoulder.

William Edward Massie, whose appointment as Master Mechanic, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., was announced in our last issue, was born at Elora, Ont., June 5, 1880, and entered electric railway service in 1895, serving in various capacities to 1907 on Toronto Ry., Toronto; from 1907 to 1915 he was General Foreman, Toronto and York Radial Ry., Toronto, and from 1915 to 1920, General Superintendent, Sudbury-Copper Cliff Suburban Electric Ry., Sudbury, Ont., and in this capacity started and operated the first electric car in Sudbury.

M. T. McCraney, General Agent, Freight Department, Chicago, Rock Island and Pacific Ry., Pittsburg, Pa., died suddenly there, Apr. 7, and was buried at Toronto, Apr. 10. He was born at Oakville, Ont., and was educated for the law and called to the Ontario bar. He had been in C.R.I. & P.R. service for over 30 years.

M. H. MacLeod, Vice President, Operation and Maintenance, Canadian National Railway, Toronto, is spending some time at Victoria, B.C., for the benefit of his health.

R. P. Ormsby, Secretary, Canadian National Rys., returned to Toronto early in April after a trip to Great Britain.

W. J. Ptolemy, who has retired from the position of Deputy Provincial Treasurer for Manitoba, after 37 years service, was, a number of years ago, in the service of the Great Western Ry., now part of the G.T.R., and was later engaged in the construction of the telegraph line for the Dominion Government between Fort Pelly and Edmonton.

Allan Purvis, who has resigned as General Superintendent, Ontario District, C.P.R., Toronto, was born at Batavia, Java, June 29, 1878, and was educated at the Merchant Taylors' School, London, Eng. He entered C.P.R. service in Vancouver, B.C., at an early age, and was from Aug., 1890, to Feb., 1891, messenger, Stores Department; Feb. to Nov., 1891, storesman; Nov., 1891, to Sept., 1892, junior clerk, Vancouver, B.C.; Sept., 1892, to Aug., 1893, timekeeper, Donald, B.C., Aug., 1893, to Oct., 1894, clerk, Vancouver, B.C.; Oct., 1894, to Mar., 1895, assistant storekeeper, North Bend and Kamloops, B.C.; Mar., 1895, to Sept., 1896, clerk and operator, Car Service and Fuel Department, Vancouver, B.C.; Sept., 1896 to Jan., 1899, Chief Clerk, Fuel Department, Vancouver, B.C.; Jan., 1899, to Feb., 1908, chief clerk to General Superintendent, Pacific Division, Vancouver, B.C.; Feb. to Nov., 1908, Superintendent, District 4, Central Division, Souris, Man.; Nov., 1908, to Oct., 1909, Superintendent, District 3, Pacific Division, Nelson, B.C.; Oct., 1909, to Oct., 1911, Local Manager, Fraser Valley Branch, British Columbia Electric Ry., Vancouver, B.C.; May, 1912, to Feb., 1915, Manager of Interurban Lines, same company, New Westminster, B.C.; May, 1915, to May 1, 1916, Superintendent, District 2, Ontario Division, C.P.R., London, Ont.; May 1 to Nov. 1, 1916, General Superintendent, Eastern Division, C.P.R., Montreal; Nov. 1, 1916, to Feb. 1, 1917, acting General Superintendent, Ontario District, Toronto; Feb. 1, 1917, to Oct. 15, 1918, General Superintendent, Quebec District, Montreal; Oct. 15, 1918 to Apr., 1920, General Superintendent, Ontario District, Toronto.

Gerard G. Ruel, who has been appointed General Counsel, Canadian National Rys., Toronto, was born at St. John, N.B., July 5, 1866, and studied law there, subsequently graduating in law at Harvard University, Cambridge, Mass., in 1889. He practised in St. John for a number of years, and was for some time a partner in the law firm of Blair, Ruel & Blair. From July, 1899, to Oct. 1, 1905, he was Law Clerk, Railways and Canals Department, Ottawa; from Oct. 1, 1903, to 1909, Assistant Solicitor, Canadian Northern Ry., Toronto; 1909, to Dec. 31, 1918, Chief Solicitor, Canadian Northern Ry., Toronto; Jan. 1, 1919, to Apr., 1920,

Counsel, Canadian National Rys., Toronto.

**Lady Shaughnessy** and Hon. Marguerite Shaughnessy sailed from St. John, N.B., Apr. 3, on the Canadian Pacific Ocean Services' s.s. Melita, for England.

**Harold George Studd**, whose appointment as Auditor for Europe, C.P.R., London, Eng., was announced in a recent issue, was born at Tottenham, Eng., July 10, 1883, and entered transportation service in 1898, since when he has been to 1903, clerk, Great Eastern Ry., Stratford and London, Eng.; Mar. 4, 1903 to Aug. 31, 1905, clerk, C.P.R., London, Eng.; Sept. 1, 1905 to Nov. 30, 1913, cashier, Passenger and Management Departments, C.P.R., London, Eng.; Dec. 1, 1913 to Dec. 31, 1919, assistant chief clerk, European Manager's office, C.P.R., London, Eng., and acting accountant, Dominion Express Co., Liverpool, Eng.

**E. R. Thorpe**, formerly City Freight Agent, G.T.R., Toronto, was entertained at dinner by a number of his associates and presented with a gold and platinum watch chain and locket, on leaving to become General Agent, Freight and Passenger Traffic, Lehigh Valley Ry., Toronto.

**Guy Toombs**, Manager Transportation Department of the Canadian Export Co., Montreal, and formerly in the Canadian Northern Railway Freight Department, gave an address on transportation recently at the Laurentide School, Grande Mere, Que., tracing the development of transportation from the earliest date to the present day and illustrating it by moving and other pictures.

**William J. Uren**, who has been appointed Assistant General Superintendent, Quebec District, C.P.R., Montreal, was born at St. Marys, Ont., Jan. 23, 1872, and entered railway service Sept. 6, 1888, since when he has been, to June, 1890, telegraph operator, C.P.R., Hawk Lake, Rat Portage, Ont., and various other points; June, 189, to Nov., 1892, agent and operator, C.P.R., Marclay and Dexter, Ont.; Nov., 1892, to Nov., 1898, Terminal Agent and Yardmaster, C.P.R., Ignace, Ont.; Nov., 1898, to June, 1903, dispatcher, C.P.R., Fort William, and Rot Portage, Ont.; June, 1903, to Apr., 1904, Chief Dispatcher, C.P.R., Rat Portage, now Kenora, Ont.; Apr. to June, 1904, Night Chief Dispatcher, C.P.R., Winnipeg; June, 1904, to May, 1905, Chief Dispatcher, C.P.R., Moose Jaw, Sask.; May, 1905, to Nov., 1908, Chief Dispatcher, and Relieving Trainmaster, C.P.R., Winnipeg; Nov. 1908, to Nov., 1909, Superintendent, C.P.R., Brandon, Man.; Nov., 1909, to June, 1910, Superintendent C.P.R., Moose Jaw, Sask.; June 1910, to Sept., 1912, Superintendent, C. P.R., Cranbrook, B.C.; Sept., 1912, to Nov., 1913, Superintendent, C.P.R., Calgary, Alta.; Nov., 1913, to Nov., 1918, Superintendent, and relieving General Superintendent, C.P.R., Toronto; Nov., 1918, to Apr., 1920, Superintendent, Farnham Division, Quebec District, Farnham, Que.

**Barton Wheelwright**, whose appointment as Engineer, Maintenance of Way, Portland Division, G. T. R., Portland. Me., was announced in our last issue, and whose resignation is announced in this issue, was born at Minneapolis, Minn., March 12, 1888, and entered G.T.R. service July 1, 1911, since when he has been, to May, 1912, draftsman, Toronto; May, 1912, to Nov., 1918, signal inspector, Assistant Signal Engineer, and acting Signal Engineer, successively, Montreal; Nov., 1918, to March 1, 1920, Engineer, Maintenance of Way, Grand Trunk Lines in New England (U.S.R.A.), Portland, Me.

**T. A. Wilson**, who has been appointed Superintendent, Sudbury Division, Algoma District, C. P. R., Sudbury, Ont., entered railway service in Jan., 1885, since when he has been, to July, 1892, successively, call boy, Stratford, Ont.; operator and brakeman, G.T.R.; July, 1892, to Oct., 1900, agent and operator at various points, Lake Superior Division, C.P.R.; Oct., 1900, to Oct., 1912, General Yardmaster, C.P.R., Ottawa, Ont.; Oct., 1912, to June, 1916, Assistant Superintendent, District 3, Lake Superior Division, C.P.R., Schreiber, Ont.; June, 1916, to Oct. 16, 1918, Assistant Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont.; Oct. 16, 1918, to April 1, 1920, Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont.

**Andrew Williams**, who has been appointed Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, Que., was born at Mono Road, Ont., Feb. 22, 1872, and entered C.P.R. service, Jan. 1889, since when he has been, to 1892, telegrapher; 1892 to 1893, relieving agent; 1893 to 1894, assistant to car distributor and fuel agent, all Atlantic Division; 1895 to 1896, relieving dispatcher, St. John, N.B.; 1896 to 1898, trick dispatcher, St. John, N.B.; 1898 to 1904, Chief Dispatcher, Woodstock, N.B.; 1904 to 1905, rule instructor, Atlantic Division; 1905 to 1909, Trainmaster, Atlantic Division; 1909 to 1911, Assistant Superintendent, Atlantic Division; 1911 to Jan. 5, 1914, Assistant Superintendent, District 1, Lake Superior Division, North Bay and Sudbury, Ont.; Jan. 5, 1914, to Jan., 1916, Superintendent, District 2, Atlantic Division, Woodstock, N.B.; Jan., 1916, to Apr., 1917, Superintendent, District 1, Atlantic Division, Brownville Jct., Me.; Apr., 1917, to Apr., 1920, Superintendent, London Division, Ontario District, London, Ont.

**James Miller Woodman**, who has been appointed General Superintendent, New Brunswick District, C.P.R., St. John, N.B., was born at St. Marys, Ont., May 15, 1866, and served as brakeman, yardmaster, conductor and trainmaster, until 1910, when he went into the insurance business in Indiana. In 1911 he entered C.P.R. service and was appointed Superintendent of Terminals, Winnipeg., and in 1916 was appointed Superintendent of Terminals at Montreal, retaining that position until Oct., 1918, when he was appointed General Superintendent, Quebec District, Montreal, which position he held at the time of his present appointment.

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**Return of Empty Freight Cars from the United States.**—The Railway Association of Canada has issued the following circular: The new codes of Car Service and Per Diem Rules of the American Railroad Association, effective Mar. 1, 1920, having been adopted by Canadian railways, regulations governing the handling of freight cars between railways operating in Canada, and between Canadian and United States railways, embodied in circular 98, issued by Canadian Railway War Board, Jan. 31, 1919, are cancelled. In present circumstances it is considered most desirable that no obstacle should be placed in the way of prompt return of empty Canadian cars to home rails and, therefore, until further notice, Canadian railways will continue to accept empty Canadian equipment from U. S. railways at any junction point, regardless of ownership.

## Grand Trunk Railway Construction, Betterments, Etc.

**Ottawa Cross Town Tracks.**—N. Cauchon addressed the Engineering Institute of Canada's Ottawa branch recently, urging the removal of the G.T.R. cross town tracks, and the members passed a resolution endorsing the proposal. The Ottawa City Council also had the matter brought before it recently by a deputation from city business organizations. It was arranged to promote the signing of petitions to the government, asking that the cross town tracks be removed. Two plans for the removal of the tracks are suggested, one for G.T.R. trains going west to leave the city over Canadian National Rys. lines, and the other that all trains cross the city through a tunnel.

**Palmerston Car Shops and Yards.** — The Palmerston, Ont., Town Council has been asked to close up certain streets in order to permit of the enlargement of the company's yards and the building of car shops. The council on April 4 decided to ask for full particulars of the proposed works before deciding.

**Stoney Creek Road Bridge.**—The Ontario Railway and Municipal Board's engineer is reported to have found that the bridge carrying the G.T.R. over the Stoney Creek road, near Hamilton, Ont., does not comply with the provisions of the act as to width and clearing height, and to have recommended that steps be taken to have it conform to the regulations.

**London, Ont., Grade Crossings.**—The Board of Railway Commissioners is reported to have been asked to send a representative to confer with the London City Council and representatives of the company regarding the construction of two subways and the question of track elevation. (April, pg. 182.)

## Record Run on a Michigan Central Rd.

We are officially advised that on Mar. 29 a special train, consisting of 2 cars and a locomotive, ran from Windsor, Ont., to Buffalo, N.Y., over the Michigan Central Rd.'s Canadian Division, 233.46 miles, in 3 hours and 29 minutes. The train, on board which were A. H. Smith, President, New York Central Lines, and H. Shearer, General Manager, Michigan Central Rd., left Windsor at 9.10 a.m., arriving at St. Thomas, where the locomotive was changed, at 10.40 a.m., leaving there at 10.46 a.m., arriving at Bridgeburg 12.20 p.m., and reaching Buffalo at 12.30 p.m. The mileages between these points, with the speed of the train, are as follows:—

| | Mileage | Min. | Average miles an hour |
|---|---|---|---|
| Windsor to St. Thomas..... | 109.50 | 90 | 73.06 |
| St. Thomas to Bridgeburg | 118.20 | 96 | 73.875 |
| Bridgeburg to Buffalo ..... | 5.67 | 17 | 66.06 |
| | 233.46 | 203 | 69.00 |

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**G.T.R. Station Employes.**—A board of conciliation consisting of Justice Maclennan, Chairman, U. E. Gillen, representing the company, and F. Bancroft, representing the men, began an investigation April 12 into the demand of G.T. R. clerks and station employes for an increase of wages. The investigation affects some 1,400 employes who are connected with the Canadian Brotherhood of Railway Employes, which made the application for the board of conciliation.

# Freight and Passenger Traffic Notes.

The Interstate Commerce Commission has, a press report states, authorized the Pullman Co. to file tariffs increasing berth rates approximately 20%.

The Minister of Railways stated in the House of Commons April 7 that of the 59,716 cars belonging to Canadian railways in the United States on a recent date, 10,840 belonged to the Canadian National Rys., 21,028 to the G.T.R., and 12,366 to other Canadian railways.

The G.T.R., a press report states, has, as a result of a conference held at Sarnia, Ont., April 4, decided to retain Port Huron, Mich., as a terminal for freight purposes, and to rescind the order to transfer the terminal yards to Battle Creek, Mich.

A press report states that a new 20-hour train service will be put in operation by the New York Central Lines and connections between New York and Chicago, running over the Michigan Central Rd.'s Canadian Division between Bridgeburg and Windsor, Ont.

A press report states that an arrangement has been made between the Dominion and Alberta Governments under which each will pay one-third of the cost of freight from the point of entry into Canada of United States hay shipped into Alberta to relieve the shortage for stockfeeding.

The Canadian National Rys. summer time table will go into operation May 3. It is reported that there will be a number of important alterations in the services given on the lines in New Brunswick and Nova Scotia, with improved services between these provinces and Quebec and Montreal. The transcontinental services, it is reported, will also be improved.

J. D. McArthur, President, Edmonton, Dunvegan & British Columbia Ry. and allied lines, was in Ottawa April 19, and was reported as seeing the Minister of Railways to endeavor to secure a loan of rolling stock to accommodate the increasing traffic on the line. It is reported that large numbers of settlers are proceeding to the Grande Prairie and Peace River Districts.

The adoption of the daylight saving bylaw by a number of municipalities in Canada will be met by the C.P.R. by the insertion of daylight saving time in red, in addition to standard time in black, in respect to trains affected. There will be a few suburban trains in and out of Montreal which will be affected, in addition to some of the through trains from United States points.

The C.P.R. is, a press report states, arranging to run an excursion to Fort Yukon, in the Arctic Circle, to see the midnight sun on June 20. The party is expected to leave Vancouver on the s.s. Princess Alice, June 12, connecting with the White Pass & Yukon Ry. at Skagway, and taking that company's river steamboats at White Horse to reach Fort Yukon June 20. It is expected to spend 48 hours at Fort Yukon and to make some side trips on the return journey to Skagway, where the Princess Alice will pick up the travellers July 1.

The Minister of Railways informed the House of Commons recently that the suspension of daily trains on the Quebec & Saguenay Ry. in Nov. 1919, was agreed upon after consultation with the Quebec, Montreal & Charlevoix Ry. Co., which suspended its daily trains also. This suspension was recommended by Gordon Grant, Chief Engineer Q. & S. Ry., on the ground that the business offering did not warrant a daily train service. Complaints had been received, and as soon as business warrants it is intended to resume operating a daily train.

A press report dated April 21 states that train service on the Reid Newfoundland Ry. was completely demoralized throughout the past winter, owing to a succession of blizzards and rainstorms. It was impossible to get a train through from St. John's to Port aux Basques, and the only services that could be maintained were for some miles inland from either end of the line. The report also states that in the interior about 40 miles of track are covered with ice varying in thickness up to 9 ft. Gangs are clearing the line and it is hoped to resume through traffic in a few weeks.

The Quebec Superior Court on April 1 dismissed an action of M. L. Kandar against the Pullman Co. to recover damages for loss of a suitcase while travelling in a Pullman car on the New York Central Ry. Kandar left his suitcase in the aisle, and contended that it was under the company's charge. Justice Surveyor held that this had not been proved and dismissed the action, but, on the ground that the company had not done everything in its power to give the plaintiff information about the suit case, when it and part of its contents were recovered, costs were not allowed against Kandar.

The Mayor of Toronto headed a delegation from Toronto, which waited on the Dominion Government at Ottawa, April 19, to ask among other things for reuced railway rate to Toronto during the National Exhibition, suggesting that an amendment to the Railway Act should be passed giving single fares on Labor Day and restoring the fare and a third rate on other Exhibition days to cities with an exhabition of two weeks' duration. The Minister of Railways is reported to have stated that a special act of the kind would not be brought before parliament, but the matter could be submitted to the Board of Railway Commissioners on an application for reduced fares.

With the coming into operation of the C.P.R. summer train schedule on May 2, the passenger service on the line will, a press report states, approximate to that given prior to the war. The daily all-sleeping car Trans-Canada train, which was put on in 1919, and made the run between Montreal and Vancouver in 94 hours, will again be operated and on a 92 hour schedule. The first westbound train will start from Windsor St. station, Montreal, May 2, at 5 p.m., and the first eastbound train will leave Vancouver May 2 at 3 p.m. Among the other new trains will be a daily fast train leaving Montreal for Ottawa at 8.30 a.m., returning from Ottawa at 4 p.m. The double daily service between Montreal and St. John, N.B., inaugurated in the autumn of 1919, will be continued. The full summer service of trains on eastern lines will go into force June 6.

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**Hotel for Sydney, N.S.**—Plans are reported to have been completed for the erection of a large hotel at Sydney, N.S., at an estimated cost of over $500,000. T. Cozzolino, of the Nova Scotia Construction Co., is reported to be the principal promoter.

## Aerial Transportation Notes.

J. A. Wilson, heretofore Assistant Deputy Minister, Naval Service Department, Ottawa, has been appointed Secretary of the Air Board.

Hon. Hugh Guthrie, Minister of Militia, is reported to have been appointed Chairman of the Canadian Air Board, succeeding Right Hon. A. L. Sifton.

The Eastern Canada Air Lines, Truro, N.S., is reported by a London, Eng., cable of April 9 to have bought 6 aeroplanes, which are on the way to Canada.

F. C. Higgins, Ottawa, a returned soldier, is the successful candidate for the position of Aeronautical Intelligence Officer, Canadian Air Board, at an initial salary of $2,400 a year.

Negotiations are stated to be in progress for the purchase of sites for landing places for aeroplanes in Port Arthur and Fort William, Ont., and it is expected by July to have aeroplane services to Duluth and Minneapolis, Minn., established.

The Northern B.C. Aero Co. has been incorporated under the British Columbia Companies Acts with authorized capital of $300,000 and office at Prince Rupert, B.C., to carry on an aeroplane and hydroplane freight and passenger carrier and transfer business.

Sir Fortescue Flannery, in his presidential address to the Society of Consulting Marine Engineers and Shop Surveyors, in London, Eng., recently, is reported to have said: "The airship which could fly and in fact float and submerge is no impossible dream of the future."

Canadian Aerial Services, Ltd., has been incorporated under the Dominion Companies Act with authorized capital of $50,000 and office at Montreal, to deal in, manufacture and operate aeroplanes, balloons, airships and flying machines of all kinds, and for other allied purposes.

Col. O. W. Biggar, Vice Chairman Canadian Air Board, and Col. Scott, of the certificates branch of the board's work, are reported to have left Ottawa for Winnipeg and other western points April 14, to look into the various projects for commercial flying throughout the West.

The Pacific Aviation Co. has been incorporated under the British Columbia Companies Act, with authorized capital of $100,000, and office at Vancouver. A press report states that the officers are: President, B. D. Rogers; Vice President, R. Marpole; Managing Director, G. K. Trim.

The United States Aerial Express Corporation of Detroit, Mich., is reported to have bought 12 naval airships from the U.S. Navy Department and it is said that it will establish a number of air routes, to carry mail and express, one of which it is said will be from Detroit to Toronto.

The Canadian Air Board proposes, a press report states, the organization of an air force for Canada of not to exceed 5,000 men, on a militia basis. Commissions will be given to officers, and airmen will be enlisted in the usual way, and it is reported that the first training camp will be opened at Camp Borden, Ont.

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**Prepayment of freight from United States**—A press dispatch says that U.S. railways have given notice that on and after May 1, the charges on all freight shipped from United States points to Canada, must be prepaid in U.S. currency.

# Railway Rolling Stock Orders and Deliveries.

Electro Metal Co. has ordered 2 flat cars from Canadian Car & Foundry Co.

The Pacific Great Eastern Ry. is stated to be in the market for three Mikado type locomotives.

The Grand Trunk Pacific Ry. has received 157 repaired box cars from Canadian Car & Foundry Co.

Canadian National Rys. has received 4 repaired baggage cars from Canadian Car & Foundry Co.

Canadian National Rys. has ordered 350 stock cars, 30 tons capacity, from Canadian Car & Foundry Co.

The G.T.R. has received 7 dining cars, 7 steel mail cars, and 47 repaired box cars, from Canadian Car & Foundry Co.

Canadian National Rys. has received 6 dining cars of an order placed June 26, 1919, from Canadian Car & Foundry Co.

F. H. Hopkins & Co., Montreal, have ordered 6 sets of car trucks, 50 tons capacity, from Canadian Car & Foundry Co.

The G.T.R. has ordered 1,000 automobile cars, 50 baggage cars, and 15 express refrigerator cars, from Canadian Car & Foundry Co.

The G.T.R. has ordered 1,000 flat cars, 50 tons capacity, from National Steel Car Corporation. They will be approximately 40 ft. overend sills, 8 ft. 10 in. over side sills, with plate girder center and side sills, of 10 in. channel, pressed steel bolsters and crossties, arch bar type of truck, journal bearings 5½ x 10 in., standard M.C.B. class D couplers, Westinghouse air brakes, and 33 in. cast iron wheels.

C.P.R. orders.—Canadian Railway and Marine World was able to give in the April issue, some preliminary details of orders for rolling stock placed by the C.P.R. for delivery during this year. Since then, we have been officially advised of orders placed as follows: 3 dining cars, the bodies to be built complete by Canadian Car & Foundry Co., and the interior finishing to be done in the C.P.R. Angus shops; 43 sleeping cars, the steel frames for 18 to be built by National Steel Corporation, Ltd., and for 25 by Canadian Car & Foundry Co., the interior finishing to be done at C.P.R. Angus shops; 67 second hand air dump cars bought from Cook Construction Co., Montreal; 2,500 box cars, 60 tons capacity, 1,500 of these to be built by Canadian Car & Foundry Co. and 1,000 by National Steel Car Corporation; 500 refrigerator cars to be built at C.P.R. Angus shops, and 5 Santa Fe (2-10-2) locomotives to be built at Angus shops.

The C.P.R. 35 steel frames for sleeping cars which are being built by Canadian Car & Foundry Co., as mentioned in our last issue, will have underframes composed of 4 bottom flange angles 3 x 3 x ⅜ in., 2 top flange angles 6 x 4 x ⅝ in. with 5/16 in. webs and 9/16 x 30 in. top cover plates; depth over flange angles at center of cars 30 ft., and at each end there will be a steel buffer casting and a 2 ft. 9 in. platform. The end framing will consist of two 6 in. x 23.9 I beams at buffer beam and body end, with four 4 in. x 8.2 Z bars at each body end. The side construction will consist of ⅛ in. channel shaped pressed posts with belt rail 3¾ x 15/16 x ½ in. rolled steel side plates 4⅝ x 2 x 2½ x 3/16 Zees with 3/16 side guide plates ⅛ in. pier plates and ⅛ letter plate. The roof will be composed of ⅛ in. pressed Z shaped upper deck and channel shaped lower deck carlines, 0.078 steel upper deck and 0.063 lower deck roof sheets, vestibule roof slats 0.109 thick. The chief details of the cars will be:—

| | |
|---|---|
| Length inside coupler knuckles | 83 ft. 10½ in. |
| Length over end sills | 75 ft. 6 in. |
| Truck centers | 59 ft. 6 in. |
| Width over side sills | 9 ft. 9⅝ in. |
| Width over eaves | 10 ft. 0¾ in. |
| Height, rail to eaves | 11 ft. 1⅝ in. |
| Height, rail to top of roof | 14 ft. 0⅝ in. |
| Height, rail to side sill | 3 ft. 7⅝ in. |
| Truck, wheel base | 11 ft. |
| Truck, type | Commonwealth with clasp brakes |
| Journals | 5 x 9 in. |

The Timiskaming & Northern Ontario Ry. has invited tenders for supplying 4 Mikado (2-8-2) locomotives and two 8-wheel switching locomotives of the following general specifications:—

| | Mikado. | Switching. |
|---|---|---|
| Cylinders | 25 x 30 in. | 23 x 28 in. |
| Driving wheel diar. | 63 in. | 53 in. |
| Boiler pressure | 180 lbs. | 180 lbs. |
| Weight on drivers | 197,000 lb. | 202,000 lb. |
| Weight on front truck | 29,500 lb. | |
| Weight on rear truck | 31,600 lb. | |
| Weight on engine, total | 268,000 lb. | |
| Driving wheel, base | 16 ft. 6 in. | 16 ft. 6 in. |
| Engine wheel, base | 34 ft. 8 in. | |
| Fire box, length and width | 96x75¼ in. | 89½x75¼ in. |
| Grate area | 50 sq. ft. | 46.26 sq. ft. |
| Boiler, diar., front end | 71 in. | 71 in. |
| Boiler, diar, back end | 78 in. | 78 in. |
| Tubes, no. and diar. | 202 2 in. 32 5⅜ in. | 202 8 in. 32 5⅜ in. |
| Tubes, length | 20 ft. | 14 ft. 6 in. |
| Arch tubes, no. and diar. | 4 3 in. | 4 3 in. |
| Heating surface, tubes | 3,016 sq. ft. | 2,186 sq. ft. |
| Heating surface, fire box | 208 sq. ft. | 153 sq. ft. |
| Superheating surface | 757 sq. ft. | 570 sq. ft. |
| Weight of tender loaded | 143,000 lb. | 143,000 lb. |
| Coal capacity | 12 tons | 9 tons |
| Water capacity | 6,500 imp. gal. | 6,500 imp. gal. |

Canadian National Rys. 12 dining cars ordered from Canadian Car & Foundry Co. will be C.N.R. standard, except when non vestibule ends are to be applied, making a more simplified arrangement. The interior finish will be quarter cut oak, except in the kitchen and pantry, which will be painted; the air pressure water system will consist of longitudinal tank 96 x 26 in. diar., connecting with 2 overhead copper tanks in the kitchen. Following are the chief details:—

| | |
|---|---|
| Length over end sills | 79 ft. 1 in. |
| Length between truck centers | 57 ft. 6 in. |
| Width over all at eaves | 10 ft. 7⅞ in. |
| Width over side posts | 9 ft. 9⅝ in. |
| Width over upper deck at eaves | 5 ft. 11¼ in. |
| Height, track to roof at center | 14 ft. 2 in. |
| Height, rail to side at eaves | 11 ft. 2½ in. |
| Height, track to sell at track centers | 3 ft. 7⅞ in. |
| Heating | Vapor Car Heating Co. |
| Lighting | Electric |
| Couplers | Sharon bottom end operating |
| Draft gear and buffing device | Friction |
| Airbrake | Wesinghouse |
| Hand brake | Miner ideal staff at both ends |
| Trucks | Commonwealth 6 wheel type with clasp brake |

Canadian National Rys. 20 baggage cars ordered from Canadian Car & Foundry Co. are to be built to the C.N.R. standard. Following are the chief details:—

| | |
|---|---|
| Length over end sills | 73 ft. 6 in. |
| Length between truck centers | 55 ft. 7 in. |
| Length over buffers, approximate | 77 ft. 6 in. |
| Width over side sills | 9 ft. 9⅝ in. |
| Width overall at eaves | 10 ft. 1⅞ in. |
| Width at clerestory | 5 ft. 11¼ in. |
| Height, track to center of roof | 14 ft. 2 in. |
| Height, over smoke jacks, approximate | 14 ft. 5 in. |
| Height rail to eaves | 11 ft. 2½ in. |
| Height, track to sill at end | 3 ft. 7⅝ in. |
| Height, track to sill at center | 3 ft. 9 in. |
| Couplers | Sharon bottom operating |
| Draft gear | Miner friction |
| Buffing device | Miner B-10 |
| Side bearings | Miner roller |
| Heating system | Vapor Car Heating Ct. |
| Lighting | Safety Car Heating & Lighting Co. |
| Air brakes | Westinghouse K1 |
| Hand brake | Miner double acting for non vestibule cars |
| Trucks | Commonwealth 6 wheel type with clasp brake |
| Wheel, diar. | Steel tire 36½ in. |
| Journal boxes | McCord |

Canadian National Rys. 18 drawing room sleeping cars, ordered from Canadian Car & Foundry Co. will be built to C.N.R. standard, with the latest standard air pressure water system, having a 26 x 96 in. water tank, with a temperature control device for heating water for wash stand; standard system of hot water heating and piping in addition to the Vapor heating system. The electric light system will consist of a body hung, belt driven, generator of 4 k.w. capacity and one 350 ampere hour battery. Following are the chief details:—

| | |
|---|---|
| Length over end sills | 73 ft. 6 in. |
| Length between truck centers | 57 ft. 6 in. |
| Length over buffing, approximate | 82 ft. 4½ in. |
| Width over side sills | 9 ft. 9⅝ in. |
| Width overall at eaves | 10 ft. 1⅞ in. |
| Width at clerestory | 5 ft. 11¼ in. |
| Height, track to roof at centers | 14 ft. 2 in. |
| Height over smoke jacks, approximate | 14 ft. 5 in. |
| Height, rail to eave moulding | 11 ft. 2½ in. |
| Height, track to sill at end | 3 ft. 7⅝ in. |
| Height, track to sill at center | 3 ft. 9 in. |
| Heating | Vapor Car Heating Co. |
| Couplers | Sharon bottom operating |
| Draft gear and buffing device | Miner friction |
| Trap doors | National steel |
| Air brakes | Westinghouse |
| Hand brakes | Miner ideal staff type at both ends |
| Trucks | Commonwealth 6 wheel type with clasp brake |

Canadian National Rys. 600 refrigerator cars ordered from Canadian Car & Foundry Co. will have La Flare insulation and Miner door fixtures. The floor will have removable floor racks, built of 3 x 1¾ in. stringers, and to each will be fastened 3¾ x 1½ in. thick wood slats. They will be equipped with 4 brine tanks at each end, supported by Union Railway Equipment Co.'s Ureco brine tank supports, handhole and brine valve. The height of one brine tank at each end will be reduced to leave room for a heater, to be used when transporting perishable products during winter. Brine tanks will be iced from hatches in the roof, and ventilators will be operated from outside of the roof. The underframes will be of wood, with 5 x 8 side sill, and center of intermediate sills, reinforced by a center sill construction of two 7 in. 21.8 lb. ship channels, with 5/16 in. thick covered plates top and bottom. The sides and underframing will be of wood, and the body bolster and cross bar of built up steel construction. Following are the chief details:—

| | |
|---|---|
| Capacity | 60,000 lb. |
| Length over end sills | 36 ft. |
| Width over side sills | 8 ft. 11 in. |
| Top of sill to underside of plate | 7 ft. 8 in. |
| Length inside between brine tanks | 28 ft. 9½ in. |
| Width inside | 8 ft. 2¼ in. |
| Height, top of floor to underside of ceiling | 7 ft. 6⅜ in. |
| End sill, outside to center of body bolster | 5 ft. |
| Width of side door opening | 5 ft. |
| Height of side door opening | 6 ft. 3 in. |
| Height, top of rail to center of coupler | 2 ft. 1½ in. |
| Trucks, center to center | 26 ft. |
| Draft gear | Miner tandem spring |
| Couplers | M.C.B. type D |
| Air brakes | Westinghouse K.C.-1012 |
| Trucks | Diamond arch bar |
| Bolsters and brake beams | Simplex |
| Side bearings | Miner balance |
| Journal boxes | McCord |

Canadian National Rys. 1,000 box cars, 40 tons capacity, ordered from Canadian Car & Foundry Co., will have underframes of two 15 in. 33 lb. journals with one 19½ x ¼ x 33 in. top cover plate, side sills 8 in. 11¼ lb. channels, end sills 10 in. 15 lb. channels, floor stringers 3 in. 6.7 lb. Z bars running longitudinally and spaced equidistant between centers of side sills. The corner posts of the superstructure will have 5 x 5 x ⅜ in. angles, door post, front 86 x 3½ x 5/16 in. angles, door post, rear, 4 x 3½ x 5/16 in. angles and the door will be Camel improved type top hung. The roofs on 500 of these cars will be Chi-

cago Winslow improved type B, inside metal roof, with 24 gauge galvanized steel, and the other 500 will have Hutchins outside metal roofs. One end of the cars will be equipped with an upper sliding end door for grain service, and at the same end below, a small sliding door for loading grain, etc. Inside the car, at the end, ¼ x 24 in. reinforcing plates will be fitted, extending clear across the car and bolted to the end lining near the floor. Following are the chief details:—

| | |
|---|---|
| Length inside | 36 ft. |
| Width inside | 8 ft. 6½ in. |
| Height, floor to car line | 8 ft. 0½ in. |
| Width on side door opening | 5 ft. |
| Height on side door opening | 7 ft. 8 7/16 in. |
| Length between end sills | 37 ft. 1½ in. |
| Width over side sills | 8 ft. 9½ in. |
| Height, rail to center of coupler | 2 ft. 10½ in. |
| Height, sill to bottom of side plate | 7 ft. 10 3/16 in. |
| Width over eaves | 9 ft. 3½ in. |
| Trucks, center to center | 26 ft 10 in. |
| Draft gear | Miner twin spring |
| Couplers | M.C.B. type D |
| Brakes | Westinghouse K.C. 812 |
| Hand brakes | Standard type |
| Trucks | Diamond arch bar |
| Bolster and breakbeam | Simplex |
| Side bearing | Miner balance |
| Journal boxes | McCord |

## Railway Finance, Meetings, Etc.

**Algoma Central & Hudson Bay Ry.**—The full terms of the proposed settlement discharge and release of all defaults upon the Algoma Central & Hudson Bay Ry., and Algoma Central Terminal bonds have been announced in a circular from the Lake Superior Corporation to its stockholders. Among other things the Lake Superior Corporation undertakes that the Algoma Steel Corporation will complete a new rail and structural mill unit, so as to bring its capacity of standard steel products up to 500,000 tons annually. Meetings of the railway and terminal bondholders will be held in London, Eng., to ratify the agreement, and meetings of the Lake Superior Corporation shareholders and of the subsidiaries concerned will be held in Toronto or Sault Ste. Marie, to take similar action.

**Central Vermont Ry.**—Application has been made by the Central Vermont Ry. Co. to the Massachusetts Public Utilities Department for permission to issue $15,000,000 of bonds to retire and refund $12,000,000 of outstanding bonds due May 1; to pay off other outstanding debts and to provide funds for certain improvements.

**Lacombe & North Western Ry.**—The Alberta Railways Department's report for 1919, laid before the legislature recently, is stated in a press report to give the following information relative to the Lacombe & North Western Ry.:—The line has been extended from Bentley to Rimbey, 13 miles, bringing its total length up to 33 miles. The total revenue for the year was $28,268.04, an increase om 50.3% over 1918, and the operating expenditure was $36,541.65, an increase of 94.7%. The year's deficit was $8,273.61, which added to the deficit of $219,97 for 1918, makes a total deficit under government ownership of $8,493.18.

**Morrisey, Fernie & Michel Ry.** — The Crows Nest Pass Coal Co., which owns this railway, states in its annual report for 1919, that the profits of the railway for the year were $1,572.61, which was carried to reserve for depreciation.

**Nakusp & Slocan Ry.**—A special general meeting of sshareholders of the Nakusp & Slocan Ry. Co. has been called to be held in Montreal, May 4., to consider and, if deemed advisable, to approve a proposed agreement to lease the company's railway, etc., to the C.P.R., and to consider the advisability of empowering the directors to issue bonds, and to fix the amounts and terms thereof and to approve the form of mortgage to be given to secure the same. This railway was built by a company, the bonds of which were guaranteed by British Columbia, and was subsequently operated by the C.P.R. under an agreement. The term for which the guarantee of bonds lasted expired in 1918, and an arrangement was then made and confirmed by the B.C. Legislature in 1919, under which the bonds were to be acquired by the government and sold to the C.P.R. at face value. The present lease to the C.P.R. expires June 30.

In the course of his budget speech in the British Columbia Legislature the Finance Minister is reported to have said: "Included in the deferred assets is $993,332.08 paid on account of principal and interest of N. & S. Ry. bonds under the authority of the N. & S. Ry. Aid Act, 1894. Of this sum there has since been paid to the province by the C.P.R. in accordance with the agreement ratified by the legislature last session, $647,070, leaving the province with a net loss, as a result of the guarantee given, to the extent of $346,262.08." A resolution was passed authorizing the writing off of this loss against the consolidated surplus account.

**Timiskaming & Northern Ontario Ry.**

| | Jan. 1920. | Jan. 1919. |
|---|---|---|
| Passenger earnings | $59,372.42 | $54,666.99 |
| Freight earnings | 197,216.72 | 160,907.64 |
| | $256,589.14 | $215,574.63 |

In the course of his budget speech in the Ontario Legislature April 13, the Finance Minister is reported to have pointed out that on an investment of $23,000,000 in this railway no revenue was derived last year, and it was a question whether it could be regarded as an asset.

## Electrification of Government Railways Urged.

A motion expressing the opinion that it is expedient and in the interest of Canada for the government to substitute electricity for steam as a motive power upon the railways owned by the government, as soon as, and wherever practicable, was submitted to the Senate, April 15, by Senator E. D. Smith, who pointed out that 10,000,000 tons of coal a year are used on Canadian steam railways, costing about $4 a ton at the International Boundary, a large proportion of which could be saved if the lines carrying the heavier traffic were electrified. There are many arguments in favor of electric traffic in contrast with steam railway traffic, which are summed up in an article describing the results of the electric operation of 440 miles of railway in the Rocky Mountain district by the Chicago, Milwaukee & Puget Sound Ry. After having referred to the fact that so far as the electric operation of railways in Canada is concerned there is not very much guidance to be obtained from experience, Mr. Smith pointed out that some 57 municipalities in Ontario have voted in favor of building electric railways under the Hydro Electric Power Commission of Ontario. These plans represent about 1,600 miles of new lines, and it appeared to him to be impossible to build new lines in Ontario without duplicating or paralleling existing steam railways. It is said that these new electric lines will be built as soon as the Chippewa power development plans are completed, and the 400,000 h. p. available. The government has taken over the Canadian Northern Ry., and is taking over the Grand Trunk Ry., and it does appear that the proposed electric railway construction will materially decrease the earnings of these steam railways. It would cost about $2,000 a mile, a year to electrify existing steam railways, and he argued that it would be in the public interest to undertake the electrification of many sections of the government owned steam railways.

Several other Senators having spoken, the debate was adjourned, and was resumed April 21, when Sir James Lougheed suggested that it might be inexpedient to pass a general resolution of the kind, without having more definite information as to the probable cost of electrification, and Canada's financial position to enter upon so great a responsibility. The intention of the mover, to draw the government attention to the matter, had been accomplished, and no great purpose could be served by committing the Senate in this very general way to so important a proposition. The motion was then withdrawn.

## Cost of Quebec Bridge Construction.

Replying to questions in the House of Commons, April 15, Right Hon. A. L. Sifton said the total amount expended and charged to capital account for the construction of the Quebec bridge is $21,707,889.34. There is no railway constructed in connection with the bridge. There has been charged to capital account, as having been paid under par. 18 of the agreement forming the schedule to chap. 54 of the statutes of 1903, $6,424,781, the details of which are: principal, $5,016,453.66; special account, $162,360.46; accrued interest on principal, $800,454.16; accrued interest on special account, $13,560.48; interest on accrued interest, $75,673.18; remuneration to Royal Trust Co. re bond issues, two amounts of $500 each, $1,000; cash indemnity to shareholders, including interest, $355,279.07. Interest has been included in the amount charged to capital account only in respect to the amounts mentioned above, the total being $954,896.88 at 5%.

Paragraph 18 of the agreement attached as a schedule to the act of 1903, reserves to the Dominion Government the right to take over the company's undertaking at any time on paying par value to the shareholders for their stock, not exceeding $265,585.70, with simple interest at 5% from the time of taking over the stock until payment. The purchase is declared to be subject to the payment of such obligations of the company as may have been sanctioned by the government, and of the company's bonded indebtedness.

**Changing Station Names.**—The Board of Railway Commissioners has issued the following circular: Applications are from time to time made to the board by the residents of different localities for orders requiring railway companies to change the names of stations along their respective lines of railway, to which replies have invariably been made that the board has no power to make the orders applied for; that the railway companies themselves are the proper, in fact, the only parties to afford relief in such cases, unless, as has happened in some instances, a change in the name of a post office is desired, when, of course, the application would be to the post office authorities at Ottawa.

# Pacific Great Eastern Railway Construction.

The Pacific Great Eastern Ry., which is owned by British Columbia, and is under that province's Railways Department's charge, consists of the completed portion of 180.7 miles, and the section under construction from Clinton to Prince George. The completed portions are from North Vancouver to Whytecliffe, 13 miles, and from Squamish Dock to Clinton, 167.7 miles. The B. C. Railways Department's report of the calendar year 1919, laid before the Legislature recently, states that in addition to the regular maintenance-of-way work done by the section and bridge and building crews, to maintain the roadbed in good operating condition, and the bridges and buildings in good state of repair, an extra gang of an average strength of about 20 men built 1,100 ft. of cribbing, of an average height of 15 ft. at miles 53.5 and 65.0 Squamish Division; cleaned slopes at mile 15.5 Squamish Division, and cuts north and south of Mackinnon, Lillooet Division, and resurfaced 34.2 miles of track on Squamish Division from mileage 24.4 and mileage 54 to 76.7. This gang also lined out 409 ft. of track for 8 ft. from bank at mile 54 Squamish Division, and put in 13,000 new ties, in addition to the 8,000 ties put in by the regular section crews. On the North Shore Division, viz., between North Vancouver and Whytecliffe, four wing dams were built on Capilano Creek to divert the force of flood flow from weak spots along the west bank. A crib was built on the east bank, to help remove a gravel bank which was blocking the channel of the east Howe truee span, and the east abutment of the bridge was protected by laying a double brush mattress up stream along the toe of the river bank to connect with the center. Considerable repairs were carried out at five bridges on the division, where floods had weakened piers, etc. On the line from Squamish to Clinton, considerable work of a similar character was done for the protection of the line and the bridges, during sudden floods. The bridge across the Cheakamus River Canyon, mile 19.1 north of Squamish, was destroyed Sept. 27 by a forest fire. This bridge consisted of a 130-ft. deck Howe truss span, on framed towers, with trestle approach at each end. Temporary provision was made by Oct. 4, for carrying on traffic and the new bridge was completed and ready for traffic Nov. 8. Considerable work had to be done on tunnel 3, at mile 18, north of Squamish, where there was a cave in of the roof at an unlined part of the tunnel, Nov. 30. The debris was cleared and traffic resumed Dec. 5. Orders have been given to remove the material now being supported by the timbered section at the south end, thus making an open cutting; the south portal will then be removed further north, and the remaining portion of the rock section widened and timbered. This will give a completely lined funnel, safe while the timbering lasts. Fencing was erected on 10 miles of line, principally north of East Lillooet, and between East Lillooet and Kelly Lake, and the 166 bridges between Squamish and Chasm Station were given a thorough examination with a view to repair during 1920.

Construction on the lines from Clinton to Prince George was prosecuted throughout the year, and is still going on. During the winter of 1918-19 there were got out for the summer's work 300,000 ties, 2,000 telegraph poles and fence posts for 75 miles of fencing, and a large material yard was laid out at Lone Butte, 6 miles north of Horse Lake summit. About 24,000 tons of construction material were unloaded there. Lone Bute was the farthest point to which track could be laid, as only the clearing of the right of way had been done on the next six miles, and there was a further 12½ miles of right of way, six miles beyond that. Grading and bridge work was pushed actively, and track laying was commenced July 15, Williams Lake, the objective being reached Sept. 15. This necessitated the laying of 66 miles of main line track and 7 miles of secondary track. Ballasting and surfacing was then proceeded with, but owing to the difficulty in securing good ballast, and the inability to get sufficient labor the work is very much behind. The year's work included the grading of 23 miles of new line, laying 113 miles of track (main line, secondary and spur lines), hauling 250,000 cu. yd. of ballast, and train fill, building 102 miles of telegraph line, putting up 49 miles of fencing, building 15 bridges containing 1,750,000 ft timber; erecting three 40,000-gal. water stations, and the erection of station buildings, section houses, etc. A 4-stall locomotive house, a first-class station building, with operating officials' quarters is being built at Williams Lake.

The 1920 construction programme contemplates the completion of the line to Prince George. Tracks had been laid to about 10 miles north of Williams Lake at the end of 1919, and the roadbed was ready for the laying of a further distance of 7 miles to Deep Creek, at which point a steel viaduct is being built. A description of this viaduct was given in Canadian Railway and Marine World for Dec., 1919, pg. 654. The construction headquarters for 1920 will be at Williams Lake, where materials are being assembled. The year's construction programme covers first the completion of the line through to deep creek, and ballasting operations will be started in April, at the point where work was stopped in 1919. It is expected that the Deep Creek Bridge, which the report states may be classed among the important bridges on the continent, presenting peculiarly difficult problems in foundations and in erection details, due to its great height, and the wide spread of the lower legs—will be completed by the middle of July, and the line ballasted thereto. A bridge has to be built at Quesnel to consist of 3 deck plate girder spans, on concrete piers and abutments, whence track laying and ballasting will be pushed to Cottonwood Canyon, which is expected to be reached Dec. 1. There is about 20 miles of new construction to be done between Deep Creek and Cottonwood Canyon.

As early as the weather will permit tracklaying will be started at Prince George, on the grading done towards Cottonwood Canyon, and gangs will be employed regrading the right of way, and in building bridges. The engineers reported that practically the whole of the right of way, between these two points has been covered by brush and small trees, and a great many large trees have blown into the original clearing from the sides, and many new culverts are required. The estimated quantity of material required to be shifted to restore the grade to a condition ready for tracklaying is 710,000 cu. yd., and the estimated cost of the work was $588,000. The Railway Department's Chief Engineer states that the experience of the work to Deep Creek has shown that these estimates are too low. The cantilever bridge across Cottonwood Canyon will be of considerable magnitude, and will be built out from both ends. The other bridge construction includes 41 timber structures for the erection of which it is estimated that 8,000,000 ft. of timber will be required. It is expected that all this work will be completed by Dec. 31. It is not intended to do any ballasting between Cottonwood Crossing and Prince George this year. This portion of the line will simply be lined up and side surfaced and put in a condition to be operated at a low rate of speed.

The 20 miles of new construction referred to, which will be done this year, consists of relocation north and south of Quesnel. The estimated cost of completing the line as originally planned was $1,821,825, while the cost of the line on the new location is estimated at $1,210,340. The new location is said to be in a better country than the original one.

A project was laid before the B.C. Government in 1918 to build a branch from Clinton to connect with the Canadian National Rys., at Ashcroft, and a reconnaissance survey was made in that year by H. E. C. Carry. A survey was made during 1919, the field work being completed Nov. 10. The starting point of the projected line is 0.85 mile west of Clinton station, and connection will be made with the C. N. Rys. near Ashcroft yard limits, the distance between these two points being 41.5 miles. With the exception of a portion of the line between miles 5 and 6 a gradient of 1% compensated is maintained for 33.8 miles to the siding at the top of a pusher grade from Ashcroft, and 4,400 ft. on the level is allowed for passing tracks at this point. The 2.2% compensated pusher gradient from Ashcroft up to this point is 6.8 miles long. The top of the 1% compensated gradient at Clinton is at an elevation of 3,278 ft. (Pacific Great Eastern datum), and at the junction with the C.N. Rys. at Ashcroft the elevation is 1,100 ft. (P.G.E. datum), this equals an elevation of 1,000 ft. (C.N.R. datum), giving a fall from Clinton to Ashcroft of 2,178 ft. The curvature is not excessive and 10° curves have been adopted as a maximum. The main engineering difficulty to overcome was the development of distance to maintain a 1% compensated gradient from Clinton to join up with a pusher gradient of reasonable length out of Ashcroft. Trestle work is comparatively light, the greatest being over Allan Creek, 140 ft. high and 800 ft. long. Other large trestles are that over Madden Creek, 500 ft. long by 100 ft. high, and over Hat Creek, 600 ft. long by 85 ft. high. Six steel bridges will be required in the Bonaparte Canyon. Three of them will consist of single 100 ft. deck plate girders, one of a single 80 ft. deck plate girder; one of an 80 ft. and two 40 ft. deck plate girders, and the sixth of three 80 ft. and three 44 spans deck plate girders. There will be six tunnels, the longest being 1,000 ft. The material to be moved is estimated at 56% solid rock, 15% loose rock, 27% hard pan, and 2% earth. An alternative route via Boston Flats has

been surveyed, starting at mile 33 from Clinton, which gives a route 4 miles longer than that through Bonaparte Canyon. On this route there would be little trestle work, no steel bridges, and the pusher grade would be 4.6 miles long. There would, however, be a heavy cutting at Ashcroft of 140,000 cu. yd., and 3,000 ft. of tunnelling at the top of the pusher gradient.

The Lieut.-Governor in his speech at the opening of the British Columbia Legislature recently, said: "Construction of the P.G.E. Ry. northward from Clinton has been prosecuted vigorously, and an agreement has been entered into for the completion of it to Fort George during this year." In the Legislature on Feb. 13, the Premier agreed to a motion for a return of all correspondence relating to the agreement for the construction of the extension to Fort George. On the following day a delegation from British Columbia board of trade waited on the government to press speedy construction of the extension, and is reported to have been informed that it would be impossible to continue construction to Fort George this year, as necessary construction and other equipment could not be obtained.

As to the Ashcroft-Clinton cutoff, the Premier pointed out that it was a strategic point for railway building and any corporation that secured the route would control the whole traffic of the P.G.E. to Fort George and Peace River. Therefore the government last year had made surveys and secured this key, which it could use whenever it became necessary.

A bill was introduced in Mar. 5 providing for the issue of $4,800 of securities to retire the note of the P.G.E.R. Co., guaranteed by the province in 1919. This note is held by the Bank of Commerce, which has as security $6,000,000 of the company's capital stock. A second bill before the Legislature asks for authority to raise $4,000,000, to be advanced by way of a loan to the P.G. E.R. for the construction, equipment and operation during the building of the compnay's railway. The loan is to be secured upon a mortgage of the undertaking, ranking next after the security given to the government under the acts of 1912, 1914 and 1916; the loan to bear interest at the rate at which it is placed with the public, and any instalments of unpaid interest are to be charged with compound interest at the same rate; the loan to be repaid in 1926.

## Brakeman's Seats on Locomotives.

General order 293, April 26, as follows:—Re application of Brotherhood of Railroad Tranmen for an order requiring railway companies to provide suitable seating accommodation in locomotive cabs for front end brakemen on freight trains, who are required to ride the engine: Upon reading what is filed in support of the application, and on behalf of the Railway Association of Canada; and upon the report and recommendation of the board's Mechanical Expert, concurred in by iits Chief Operating Officer, it is ordered that all locomotives of railway companies subject to the board's jurisdiction be equipped with a seat for the brakemen. That the seat provided by of a comfortable design, and, where practicable, equipped with back and window arm rest. That such seating accommodation be provided by May 1, 1921.

## Recollections of Early Surveys for the C.P.R.

By F. Houghton, Montreal.

During the summer of 1881, we were locating and running trial lines for the main line of the Canadian Pacific Railway along Nosbonsing Lake and down the Vase Creek towards Lake Nipissing. A Mr. Hegan was in charge of the party, that glutton for work, E. J. Duchesnay was transitman, and Emile Tetu leveller. At that time there was but one settler on Nosbonsing Lake, and what fishing there was in it!

While we were camped along the lake we used a lumberman's red boat to take us to and from our work, when we invariably trawled with a hand line and common spoon. I recollect while rowing to work one morning, Duchesnay trawled. I sat looking on. Suddenly there was a tremendous tug at the line. Uttering an exclamation Duchesnay began hauling it in, but it was no easy matter. 'Twas evident he had hooked a big one. Fortunately, however, the line was a stout one and the fish securely caught. After a brief and desperate struggle on the part of the fish, he was brought alongside of the boat. The question then was, how to get him on board, for we had neither gaff nor landing net. At his belt, Duchesnay carried a neat little 32 caliber Smith and Wesson revolver. A brilliant idea occurred to me. "Shoot it, Mr. Duchesnay," I called out. Promptly acting on my suggestion, at a range of a couple of feet or so, he broke his back with a bullet, killing him immediately and a maskalunge of 32 lb. weight—weighed on our return to camp in the evening—was lifted into the boat without any trouble.

The following Sunday morning Duchesnay and I took a bark canoe and went trawling. We had but one line and took it turn about to fish and paddle. I do not recollect how many we caught, but I do remember that after fishing for only a portion of the morning, we brought back to camp more black bass and dore than the whole party of about 22 healthy men could eat, before a good part of the catch went bad and had to be thrown away.

I do not know how many settlers may now be living about the lake, or how much fishing has been done since those days, but unless it has been much fished it should still well repay a visit of any enthusiastic disciples of the gentle art. Recollect we had but one common, large red, and silver spoon. How the fish must have swarmed in the lake, then. What sport might not expert fishermen have today, with rods and proper tackle? Where could they find finer camping grounds, either, or lovelier wild scenery of lake and woods?

When we had left the lake a few miles with our survey we got into the undulating brule country along the Vase Creek. What a paradise that country was for sportsmen, then, before its world old silence had been disturbed by the locomotive's whistle. Moose, bear, lynx abounded. Never a day passed that we did not see fresh tracks of them. The bear and lynx we never saw. What animals are more shy or wary? A moose occasionally we did. One day, while running the line along a side hill, in the open brule country, we saw six magnificent moose. But, of course, no rifle was ever carried on the line and we could only watch them trot away. What strides they took, with what ease they negotiated fallen timber!

It was about midsummer, if I remember rightly, of 1881, somewhere along the Vase. We had gone out to work as usual, I was a rodman on that survey; that morning, however, one of the chainmen was laid off, for sickness or something, and I was told to fill his place. As usual, that morning, Duchesnay set up his transit, and as usual the axemen lolled about, lighted their pipes, or gave a final touch with whetstones to their axes, while they waited for line. In a few moments the transit was in readiness and Duchesnay turned to me.

"Get a good stout 4 x 4 in. 4 ft. dry stake, like a hubstake, blaze it like a hub stake, and mark on it with red keel, in big letters, 'C.P.R. Station O.' From now on this line will be known as The Canadian Pacific Railway, not The Canada Central." He turned to the men. "All right, boys, stick up a picket and get line now."

Thus I had the distinction of making and driving in the first station stake marker, C.P.R. I think there is a station now somewhere about there, called Calendar.

## Canadian National Railways Earnings.

| | 1920 | 1919 |
|---|---|---|
| January | $ 7,726,562 | $ 6,787,517 |
| February | 6,516,059 | 6,265,562 |
| March | 7,761,326 | 7,160,036 |
| | $21,544,947 | $20,213,115 |

Approximate earnings for three weeks ended April 21, $5,458,837, against $4,615,570 for same period in 1919.

## Canadian Northern Railway System.

| | 1920 | 1919 |
|---|---|---|
| January | $4,200,700 | $4,026,000 |
| February | 3,862,300 | 3,363,800 |
| | $8,063,000 | $7,389,800 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan... | $13,914,569 | $13,328,628 | $585,941 | *$967,571 |
| Feb... | 13,557,104 | 12,843,231 | 713,873 | *267,242 |
| | $27,471,673 | $26,171,859 | $1,299,814 | *$1,234,813 |
| Incr. | 3,379,178 | 4,613,992 | ..... | ..... |
| Decr. | ..... | ..... | $1,234,813 | ..... |

Approximate earnings for March $16,489,000, and for three weeks ended April 21, $10,876,000, against $15,127,000 and $8,826,000 for same periods respectively 1919.

*Decrease.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Deficit | Increase |
|---|---|---|---|---|
| Jan. | $ 5,054,034 | $ 5,867,445 | $ 813,411 | $ 97,406 |
| Feb. | 4,660,807 | 5,159,640 | 498,833 | 188,756 |
| | $9,714,841 | $11,027,085 | $1,312,244 | $ 286,160 |
| Incr. | 1,224,453 | 1,510,613 | 286,160 | ..... |

Approximate earnings for March, $5,756,372, and for three weeks ended April 21, $3,795,770, against $5,513,593 and $3,786,346 for same period respectively 1919.

The Gulf of St. Lawrence Shipping & Trading Co's s.s. Guide, commenced a regular service between Pictou, N.S., and Magdalen Island, Apl. 19, leaving Pictou on Mondays and Thursdays after the arrival of the Canadian National Rys. trains from Halifax.

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## Dolly Varden Mines Railway Dispute.

A memorandum from the Dominion Minister of Justice at Ottawa is reported to have been laid before the British Columbia Government, April 12, respecting the Dolly Varden Mines Co.'s application for the disallowance by the Dominion Government of the act passed in 1919 by the B.C. Legislature, providing for a settlement of difference between the company and the Taylor Engineering Co., which carried out the contract for the construction of the railway, under which act the Taylor Engineering Co. acquired possession of the mines and the railway. The memorandum reviews the history of the case from its inception to date. The Dolly Varden Mines Co.'s application for disallowance of the act is refused on various grounds, among them being the fact that about a year was allowed to lapse before any application for disallowance was made; and that the company has a right to resort to the courts which could give a mandatory remedy against compulsory proceedings which have not legal sanction.

The Dolly Varden Mines Co. is reported to have issued two writs against the Taylor Engineering Co. and the Taylor Mining Co., one asking for a series of declarations setting aside the act of 1919 and all proceedings taken under it, and the second asks for damages for trespass and for payment to the Dolly Varden Mines Co. of all money realized from ores produced at the mines. In the first set of actions C. M. Rolston is named as a personal defendant, in addition to the two Taylor companies.

The British Columbia Legislature on April 17 passed an act confirming and validating the act of 1919 and all that had been done under it.

The history of the case may be shortly stated as follows:—The Dolly Varden Mines Co., a United States corporation, some years ago obtained a charter from the B.C. Legislature to buil da light railway from its mines to tide water at Alice Arm, running for the main part of the distance along a public highway. The contract for building the railway was let to the Taylor Engineering Co., which financed the construction, about which there was some dispute, and finally had a claim of about $500,000 against the Dolly Varden Mines Co. The time for the construction of the railway expired in 1918, and as the line was not completed, the company in 1919 made application to the B.C. Legislature for an extension of time. Prior to this application there had been some attempts to sell the property on terms which it is alleged did not protect the Taylor Engineering Co. for its outlay. This company. when the application came before the Legislature, asked to be protected, and following an investigation by a special committee an act was passed extending the time for the construction of the railway, providing that the Taylor Engineering Co. was to be paid for the work theretofore done, and making provision for other payments. The Dolly Varden Mining Co. was given time to make payment, and on its default, the Taylor Engineering Co. was given permission to take over the property and make sundry payments, including $613,000, to the Dolly Varden Mines Co. for its investment in the mines. The property was taken over by the Taylor Engineering Co., and the Taylor Mining Co. was formed to finance the undertaking. The wages claims were at once paid off; the railway was finished by Sept., 1919, and the property developed. By Dec. 1, the company had shipped $600,000 worth of ore to the smelter, and had made provision for further development this year. The development plans for the year include the raising of $1,000,000 of debentures for the purpose, among other things, of paying the $613,000 to the Dolly Varden Co. under the provisions of the act of 1919.

The officers and directors are:—President, A. J. T. Taylor; Vice President, H. C. Cheine; Treasurer, C. M. Rolston; other directors:—R. P. Butcher, C. Spencer and W. Lees.

## D. B. Hanna and the Canada Steamship Lines.

In the House of Commons on Apr. 26, during a discussion on the Minister of Railways refusal to answer a number of questions in connection with Canadian Government Merchant Marine Ltd., on the ground that the Railways Department had no returns in its records showing the information asked for, and that the transactions about which information were asked were carried on by Canadian Government Merchant Marine Ltd., as an incorporated company, Wm. Duff, M.P. for Lunenburg, said: "Is the Minister of Railways or the Government aware of the fact that Mr. Hanna, who is President of Canadian Government Merchant Marine Ltd., and practically General Manager, is also a director of Canada Steamships, Ltd.? We have been told tonight about not letting our competitors know what we are doing, but here is a man who is President of our Canadian Government Merchant Marine, who, if I am correctly informed, is also a director of the Canada Steamships, Ltd."

On Apr. 28, Mr. Duff said that, after making his statement in the House on Apr. 26, as quoted above, he had received many enquiries as to whether Mr. Hanna actually was connected with the company competing with Canadian Government Merchant Marine, Ltd. The Minister of Railways replied that Mr. Hanna was not in Toronto, but the question was of such great importance that he would make enquiries and answer the question the following day.

The matter came up again on Apr. 29, when the acting Premier, Sir Geo. Foster, said:—"Mr. Hanna was appointed a director of Canada Steamships, Ltd., some years ago to represent the Canadian Northern Ry. on the Canada Steamships Board, for the purpose of protecting the interests of the railway in connection with the interchange of traffic on the Great Lakes, and he has continued to be a director of the steamship company. He has no financial interest in the Canada Steamships and is there simply to protect the interests of the railway. Mr. Dalrymple, Vice President of the Grand Trunk Ry., is also a director of Canada Steamships for the same purpose. He has no financial interest in the company."

Lotbiniere & Megantic Ry.—We are officially advised that the Lotbiniere & Megantic Ry., extending from Lyster to Deschaillons, Que., 30 miles, was taken over by the Canadian National Rys. April 1. For operating purposes the line has been attached to the Levis Division, under the supervision of E. L. Desjardins, Levis, Superintendent.

# Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—A Fredericton press report, April 14, states that under instructions from Montreal, all betterment work in the district has been held up for the present, with the exception of such pieces of work as are urgently needed and which must be undertaken at once.

St. John River Bridge.—J. M. R. Fairbairn, Chief Engineer, and P. B. Motley, Engineer of Bridges, C.P.R., are reported to have visited St. John, N.B., April 11, in connection with the borings at the reversible falls of the St. John River, which are being made to determine the site for the main piers of the proposed new bridge.

Angus Shops, Montreal.—A Montreal press report of April 20 states that plans have been filed at the City Hall there by the C.P.R. for an extension of the Angus shops, at an estimated cost of $1,000,000. The plans are said to provide for additions to the passenger and freight car building shops, as well as to the machine shops. The new buildings will, it is said, be one story high, to conform to the present buildings. Construction will, it is stated, be started at once.

London Division.—Work is reported to be in progress on the London Division relaying the track west of Guelph Jct., Ont., with new 85 lb. rails.

A press report states that a second track will shortly be built between Woodstock and Zorra, Ont., 13 miles.

Owen Sound to Utopia.—Representatives of municipalities along the southern shore of Georgian Bay met at Meaford, Ont., recently to discuss the advisability of asking the C.P.R. to build a line from Utopia, on the Toronto-Sudbury line via Thornbury, Collingwood and Meaford to Owen Sound. A committee representative of all the municipalities was appointed to negotiate with the company. Meaford is now served by the G.T.R., and both the C.P.R. and the G. T.R. reach Owen Sound. Several plans have been suggested within recent years for the building of a line between Owen Sound and Meaford, but none of them materialized. Some years ago the C.P. R. was reported to have surveyed a line from Baxter, or Utopia, to Collingwood on the one hand and to Barrie on the other.

London to Sarnia, Ont.—Considerable discussion is taking place in the municipalities between London and Sarnia as to the company's reported plans to build a line from London to Sarnia. This matter has been considered for several years past, and some years ago surveys were made for such a line, starting from various points between St. Marys and London, but nothing was done. Meetings have been held in the various municipalities, and considerable correspondence is said to have taken place between representatives of local business interests and C.P.R. headquarters. It is reported that E. W. Beatty, K.C., President, C.P.R., will make a trip at an early date through the territory proposed to be opened up.

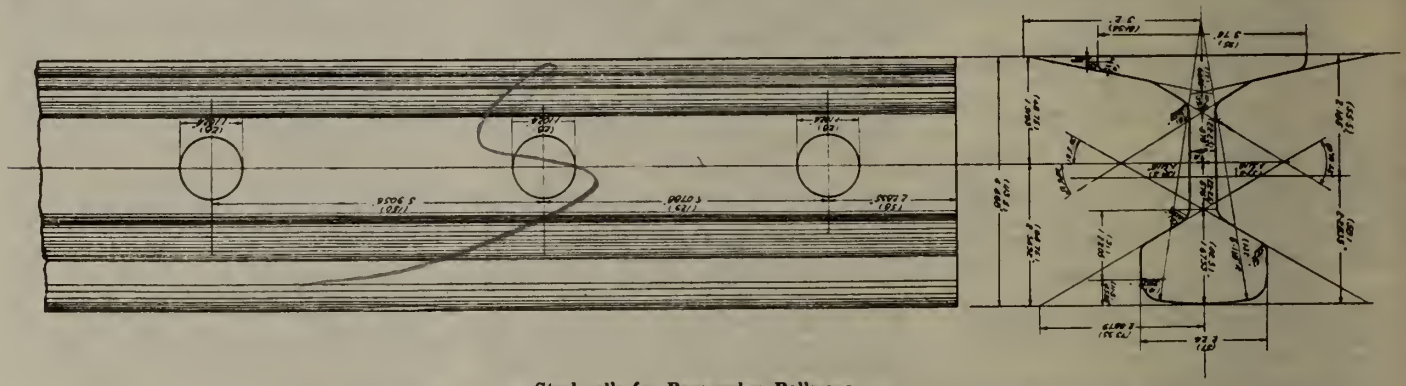
Fort William Coal Dock.—We were officially advised April 12 that the company's plans for the proposed new coal dock at Fort William, Ont., were not definitely settled.

Western Branch Line.—The directors' annual report, which is published in full on pgs. 228 and 229 of this issue, gives complete information as to the provision made for branch line construction in Saskatchewan and Alberta, and of the appropriations for betterments and other work to be carried out during this year on the various western lines.

We were officially advised April 4 that a decision had not then been reached as to what construction, if any, can be undertaken this year on the Wilkie-Cutknife line or the Coronation-Empress line, which depends to a large extent on the labor situation.

In connection with the construction of this section of the Acme-Empress line, which it is expected to complete this year, a press report states that in the building of the line many engineering difficulties have been encountered between Acme and Caribou, Alta., and that owing to the cost of construction it is termed the "million dollar road." A site is reported to have been laid out at Carbon for a station and yards.

Moose Jaw Station, Etc.—The company's new station and office building at Moose Jaw, Sask., is to be built on the axis of Main St., between Manitoba St. and the present station. When the new building is completed, the existing station and express house will be demolished, and the space occupied by them used for extension of station trackage. The entrance to the station will be on the axis of Main St. and through the base of a clock tower approximately 90 ft. high, which will have an 8 ft. dial on each face. The dials will be flood lighted at night. At the right, after entering the station, will be the public telephones, city ticket office, C.P.O.S. office, baggage and parcel rooms and transfer office, arranged in the order mentioned, and all facing the west end of the waiting room. Directly opposite the entrance will be the entrance and stair to a 20 ft. subway, passing under the tracks and having stairs at each side leading to the platforms. At each side of the waiting room will be the men's smoking room, women's room and the luncheon room. The 4 story office building will be built parallel with the west side of Main St. At the right of the entrance, on the ground floor, will be the city telegraph office, at the left will be the elevator and stairs to the upper stories, and the balance of the office building ground floor will be given to the baggage room. On the upper floors will be offices of the Superintendent, and District Superintendent, Paymaster, Sleeping and Dining Cars Department, investigation and claims, and telegraph operating rooms. The exterior of the building is designed in a rather free type of Italian rennaissance and will be built of Tyndall or Indiana limestone and red brick, laid in a grey joint. The roofs will be of copper. The public portions of the interior of the building will be finished principally in ceramic materials. The entrance vestibule, waiting room and ticket alcove will have heather brown floors, grey tile wainscoting, and grey brick walls, with moulded and ornamental members in polychrome terra cotta, and ceilings in Guastavino tile. The luncheon room will be finished with heather brown floors and grey tile walls, the upper portion of the room in tinted enamel. The women's room will have heather brown tile floor and wood panelling to the ceiling. The woodwork generally will be in the birch stained walnut. The plans have been prepared by Hugh G. Jones, architect, Montreal. Tenders for the erection of the building were received to May 1.



**Steel rails for Roumanian Railways.**
**The illustration above shows the section and drilling, of 7,500 tons of 60 lb. steel rails, which the Dominion Iron & Steel Co., Sydney, N.S., is supplying to the Roumanian Government.**

Moose Jaw to International Boundary. A press report states that about 36 miles of 85 lb. rails will be laid on the line from Moose Jaw to the International Boundary at Portal, Sask., replacing 72 lb. rails, and that a considerable amount of ballasting will be done on the line, particularly, between Lang and Wilcox.

Vancouver Pier Construction.—Work was reported to have been started on the dredging and filling in connection with the foundations of the new pier at Burrard Inlet, Vancouver, between the present A and D piers. F. F. Busteed is reported to have been appointed engineer in charge of construction. (April, pg.

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R. P. Ormsby, Secretary, Canadian National Rys., Toronto, writes: "Please, in future, send me two copies of Canadian Railway and Marine World instead of one, as I want to keep one copy on file and to cut out certain matter from the other copy. You give such a lot of useful information in the paper, in very convenient form."

# Traffic Orders by Board of Railway Commissioners.

**Free Transportation Regulations.**

General order 290. April 12.—Re Sec. 345 of the Railway Act, 1919, and regulations to be prescribed for the issue and recording of free transportation by railway companies: Upon reading the submissions filed and the report of the board's Chief Traffic Officer, it is ordered as follows:

1. That the Regulations to Govern the Issue and Recording of Free Transportation by railway companies, attached hereto, marked A, be approved and prescribed for the use of such companies; and that each and every company be required to issue all free transportation, and keep all free transportation records, in conformity therewith.

2. That the said regulations are, and by virtue of this order do become, the lawful rules according to which all free transportation is to be issued, and all free transportation records are to be kept.

3. That each and every person directly in charge of the free transportation of any such company be required to see to, and he is hereby made responsible for, the correct application of the said regulations in the issue and recording of free transportation; and that it shall be unlawful for any such company, or for any person directly in charge of the free transportation of any such company, to issue any free transportation, or to keep any free transportation records, except in the manner and form in the said regulations set forth and hereby prescribed, and except as hereinafter authorized.

4. That the foregoing regulations shall, so far as the same are applicable, apply as well to all free transportation issued by express, telegraph, or telephone companies.

**Increased Sleeping and Parlor Car Tolls.**

General order 292. April 22.—Re application of various railway companies, under Secs. 330, 333 and 334 of the Railway Act, 1919, for approval of increased standard tariffs of maximum sleeping and parlor car tolls: Whereas, for the approval of the board, the applicant companies have filed from April 1 to April 20, standard tariffs of increased maximum sleeping and parlor car tolls, and have given publicity thereto through the medium of the press, and no objections thereto having been received by the board; and an increase in the existing tolls appearing to the board to be justified by existing transportation conditions, it is ordered that the following tariffs of the applicant companies be approved, and may be put into force after publication thereof, together with a reference to this general order, in two consecutive weekly issues of The Canada Gazette, viz.:

Canadian National, C.R.C. W-S1 and E-S1.
Canadian Pacific, C.R.C. S9.
Dominion Atlantic, C.R.C. S5.
Esquimalt & Nanaimo, C.R.C. S6.
Grand Trunk, C.R.C. S7.
Grand Trunk Pacific, C.R.C. S6.
Kettle Valley, C.R.C. S4.
Maine Central, C.R.C. S4.
Michigan Central, C.R.C. S4.
Napierville Junction, C.R.C. S2.
New York Central, C.R.C. S4.
Toronto, Hamilton & Buffalo, C.R.C. S5.

**Joint Freight Tariffs for Interline Traffic.**

29,495. Mar. 23.—Re application of Canadian Freight Association, on behalf of Grand Trunk, Canadian Pacific and Canadian National Rys., for a postponement and reconsideration of order 28,618, Aug. 1, 1919, re joint freight tariffs to apply to interline traffic between points on the said railways, respectively: Upon hearing the application at Ottawa, Jan. 20, 1920, the Grand Trunk, Canadian Pacific and the Canadian National Railways, the Montreal and Toronto Boards of Trade, the Canadian Manufacturers' Association, and the Dominion Canners' Association being represented, and what was alleged, it is ordered that the order 28,618 be rescinded.

**Lumber Rates from British Columbia.**

29,539. April 15.—Re complaints of Lake Lumber Co., J. C. Wilson Lumber Co., and merchants of Qualicum Beach, British Columbia, against alleged unjust discrimination in the matter of the differential of 3c per 100 lb. over rates from Vancouver on lumber shipments from Qualicum Beach and Dashwood to destinations between the British Columbia-Alberta boundary and Port Arthur, compared with the differential of 1½c per 100 lb. from Victoria on shipments to the same destinations: Upon hearing the complaints at Victoria, Nov. 24, 1919, in the presence of representatives of the complainants and counsel and representatives for the Esquimalt & Nanaimo Ry., and what was alleged, and upon the report of the Board's Chief Traffic Officer, it is ordered that the complaints be dismissed.

**Iudustrial Siding at Fahler, Alta.**

29,501. Mar. 25.—Re application of United Grain Growers, Ltd., Calgary, Alta., for an order permitting them to use the industrial siding at Fahler, on the Edmonton, Dunvegan & British Columbia Ry. Upon hearing the application at Edmonton, Nov. 28, 1919, the appellants, residents of Fahler district, the Great War Veterans Association, and other parties interested being represented, and upon reading the written submissions filed after the hearing, both in support of, and in opposition to, the application, and the report and recommendation of an inspector of the board, it is ordered that the application be refused.

**Additional Passenger Tolls Suspended.**

29,502. Mar. 27.—Re tariffs filed by railway companies to take effect Mar. 29, imposing additional tolls on passenger traffic from Canada to destinations in the United States, Cuba and other foreign countries, where tickets are routed directly through U.S. ports or gateways, the adverse rate of exchange and the requirements of the U.S. railways for settlement in U.S. funds being stated in the tariffs as the reason for the additional tolls. In pursuance of the powers conferred upon the board under the Railway Act, 1919, sec. 325, and of all other powers possessed by it in that behalf, it is ordered that the following tariffs of the designated railways be suspended until further order:

| | |
|---|---|
| Canadian Pacific | C.R.C. no. 156 |
| Grand Trunk | C.R.C. no. E-2834 |
| Canadian National | C.R.C. no. E-123 |
| Toronto, Hamilton & Buffalo | C.R.C. no. 1288 |
| Dominion Atlantic | C.R.C. no. 476 |
| Quebec, Montreal & Southern | C.R.C. no. 276 |
| Napierville Junction | C.R.C. no. 125 |
| Pere Marquette | C.R.C. no. 597 |
| Rutland . . | C.R.C. no. 670 |

**Commutation Passenger Fares.**

29,512. April 1.—Re complaints of the City of Toronto; residents of Oakville and stations between Oakville and Toronto; residents of Laval des Rapides, Que.; Gatineau Residents Association; E. N. Brown of Montreal; the Town of Weston, Ont.; and residents of Lasalle, Que., against the proposed increase in commutation fares published by railway companies, to become effective Mar. 1, 1920; and order 29,407, dated Feb. 27, suspending the said fares pending a hearing by the board. Upon hearing the matter at Montreal, Feb. 25; Toronto, Mar. 5; Montreal, Mar. 9, and Ottawa, Mar. 16, citizens of Lachine and of the Town of Lasalle, the City of Montreal, the Citizens' Committee and the Town Council of Oakville, the Town of Weston, the City of Toronto, the Town of Bridgeburg, the Village of Port Colborne, the Township of Bertie, the Brampton Board of Trade, the Town of Brampton, the Canadian Manufacturers' Association, the Canadian National, Grand Trunk and Canadian Pacific Railways being represented at the hearing, and what was alleged, it is ordered as follows:

1. That the following tariffs, viz.:

| | |
|---|---|
| Canadian Pacific | C.R.C. 139, 140, and 145 |
| Grand Trunk | C.R.C. no. E-2822 |
| Canadian National | C.R.C. nos. W-90 and E-114 |
| Toronto, Hamilton & Buffalo, | C.R.C. 1279, 1281 and 1284 |
| New York Central | Supplement 4 to C.R.C. 9 |
| Central Vermont | Supplement 1 to C.R.C. 525 |

be disallowed.

2. That the said railways be permitted to file new tariffs of fares, for commutation passenger traffic, applicable between the points included in the now existing tariffs of commutation fares, as follows,

(a) 50-trip tickets, good for 30 days, on the basis of 8½ mills a mile of travel, subject to a minimum charge per ride of 7½c.

(b) 40-trip tickets (scholars' tickets), good for 30 days, on the basis of 4¼ mills a mile of travel, subject to a minimum charge per ride of 7½c.

(c) 10-trip tickets, good for three months, on the basis of 2.5c. per mile of travel, subject to a minimum charge per ride of 7½c.

subject to the provisions of the Railway Act, 1919, sec. 327.

3. That the application of the City of Toronto, the Town of Brampton, the Harris Wood Products Co., Toronto, the Town of Weston, Woodbridge Municipal Council, W. H. Cross and A. Newman of Bolton, Ont., for an order requiring commutation passenger fares to be extended to other territory than covered by the existing tariffs, be dismissed.

**Additional Passenger Fares Suspended.**

29,514. Mar. 30.—Re tariffs filed by railway companies to take effect Mar. 29, imposing additional tolls on passenger traffic from Canada to destinations in the United States, Cuba and other foreign countries, where tickets are routed directly through United States ports or gateways, the adverse rate of exchange and the requirements of the U.S. railways for settlement in U.S. funds being stated in the said tariffs as the reason for the said additional tolls. In pursuance of the powers conferred upon the board under the Railway Act, 1919, sec. 325, and of all other powers possessed by it in that behalf, it is ordered that the following tariffs of the designated railway companies be suspended until further order:

| | |
|---|---|
| Quebec Central | C.R.C. 177 |
| Wabash Railway | C.R.C. 1048 |

**Free Transportation for Certain Cars and Attendants.**

29,565. April 23.—Re application of Railway Association of Canada, on behalf of railway companies for free transportation under sec. 345 of the Railway Act, 1919: Upon reading the application and considering what has been urged in support thereof, it is ordered that rail-

way companies be permitted until further order to issue free transportation in the following instances, viz.: Dominion and provincial agricultural demonstration cars and necessary attendants; provincial governments' fish cars and necessary attendants; Canadian Forestry Association's demonstration car and necessary attendants.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian National Rys.—T. KEARNEY, heretofore Division Engineer, Montreal, has been appointed Assistant Division Engineer, Toronto.

W. R. FITZMAURICE, heretofore Superintendent Campbellton Division, Maritime District, Campbellton, N.B., has been appointed Superintendent, New Glasgow Division, Maritime District, vice R. H. Martin, transferred. Office, New Glasgow, N.S.

J. M. GRIEVE, heretofore Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, Winnipeg, has been appointed General Superintendent, Sleeping, Dining, and Parlor Cars and News Service, with jurisdiction over all lines. Office, Toronto.

W. A. KIRKPATRICK, who has been acting Assistant Superintendent, Division 2, Central District, Sioux Lookout, Ont., during the absence of D. W. Steeper, has resumed his position as Trainmaster, Neepawa, Man.

H. J. LAMBKIN has been appointed District Commissary Agent, Winnipeg, vice C. H. Worby, promoted.

R. H. MARTIN, heretofore Superintendent, New Glasgow Division, Maritime District, New Glasgow, N.S., has been appointed Superintendent, Campbellton Division, Maritime District, vice W. R. Fitzmaurice, transferred. Office, Campbellton, N.B.

S. H. MILLER has been appointed Roadmaster, Sioux Lookout Subdivision, Division 2, Central District, vice J. F. Flynn, assigned to other duties. Office, Sioux Lookout, Ont.

W. M. NEAL, heretofore Assistant Superintendent, Quebec District, Montreal, has been appointed Assistant General Superintendent, Ontario District, vice J. K. Savage, promoted. Office, Toronto.

GERARD RUEL, heretofore Counsel, has been appointed General Counsel. Office, Toronto.

J. K. SAVAGE, heretofore Assistant General Superintendent, Ontario Disrict, Toronto, has been appointed General Superintendent, Quebec District, vice J. Woodman, transferred. Office, Montreal.

D. W. STEEPER has resumed his former position as Assistant Superintendent, Division 2, Central District, Sioux Lookout, Ont.

W. J. UREN, heretofore Superintendent, Farnham Division, Quebec District, Farnham, Que., has been appointed Assistant General Superintendent, Quebec District, vice W. M. Neal, transferred. Office, Montreal.

A. WILLIAMS, heretofore Superintendent, London Division, Ontario District, London, Ont., has been appointed Superintendent, Farnham Division, Quebec District, vice W. J. Uren, promoted. Office, Farnham, Que.

H. B. WOLLEN, heretofore Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines. vice J. M. Grieve, promoted. Office, Winnipeg.

C. H. WORBY, heretofore District Commissary Agent, has been appointed Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, vice H. B. Wollen, promoted. Office, Winnipeg.

Canadian Pacific Ocean Services Ltd.—Major M. L. DUFFY, heretofore Agent, Glasgow, Scotland, has been appointed Agent for Scotland. Office, 120 St. Vincent St., Glasgow.

Engineer Rear Admiral GEORGE W. ROOME, O.B.E., Royal Navy, retired, has been appointed Chief Superintendent Engineer of all the company's fleet, vice Kenneth McKenzie, deceased. Office, Liverpool, Eng.

Canadian Pacific Ry.—A. C. ADES has been appointed Roadmaster, Crowsnest Subdivision, Lethbridge Division, Alberta District, vice G. Peck, resgned. Office, Lethbridge, Alta.

V. A. G. Dey,
Division Engineer, Bruce Division, C.P.R.

J. A. AUDRAIN, heretofore Trainmaster, Saskatoon, Sask., has been appointed station master, Winnipeg.

J. H. BARBER, heretofore engaged on grade separation and other special work at various points, has been appointed Division Engineer, Toronto Terminals Division, Ontario District, vice V. A. G. Dey, transferred. Office, Toronto.

W. R. BOUCHER, heretofore Superintendent, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Superintendent, Chapleau Division, Algoma District, vice W. C. Guthrie, transferred. Office, Chapleau, Ont.

J. R. CASWELL, heretofore Division Engineer, London Division, Ontario District, Toronto, has been appointed Division Engineer, Sudbury Division, Algoma District, vice N. E. Gutelius, transferred. Office, Sudbury, Ont.

S. W. CRABBE, heretofore Superintendent, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., vice T. A. Wilson, transferred. Office, Smiths Falls, Ont.

V. A. G. DEY, heretofore Division Engineer, Toronto Terminals Division, Ontario District, Toronto, has been appointed Division Engineer, Bruce Division, vice J. A. Irvine, transferred. Office, Toronto.

J. E. FONTAINE, heretofore on the exchange staff, has been appointed exchange agent, St. John, N.B., vice G. G. Graham, who has left the service.

J. M. FRYERS has been appointed Trainmaster, Sutherland, Wynward-Lanigan Subdivision, Saskatoon Division, Saskatchewan District, vice J. A. Audrain, transferred. Office, Saskatoon.

H. C. GROUT, heretofore General Superintendent, New Brunswick District, St. John, N.B., has been appointed General Superintendent, Ontario District, vice Allan Purvis, resigned.

N. E. GUTELIUS, heretofore Division Engineer, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Assistant District Engineer, Quebec District. Office, Montreal.

W. C. GUTHRIE, heretofore Superintendent, Chapleau Division, Algoma District, Chapleau, Ont., has been appointed Superintendent, Schreiber Division, Algoma District, vice S. W. Crabbe, transferred. Office, Schreiber, Ont.

J. A. IRVINE, heretofore Division Engineer, Bruce Division, Ontario District, Toronto, has been appointed Division Engineer, London Division, Ontario District, vice J. R. Caswell, transferred. Office, Toronto.

F. H. JENKINS has been appointed Locomotive Foreman, Brownville Jct., Me.

I. MOORE has been appointed Roadmaster, Orangeville, Elora, Wingham and Teeswater Subdivision, Bruce Division, Ontario District, vice S. Lackey, superannuated. Office, Orangeville, Ont.

T. A. WILSON, heretofore Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Superintendent, Sudbury Division, Algoma District, vice W. R. Boucher, transferred. Office, Sudbury, Ont.

J. M. WOODMAN, heretofore General Superintendent, Quebec District, Montreal, has been appointed General Superintendent, New Brunswick District, vice H. C. Grout, transferred. Office, St. John, N.B.

Grand Trunk Ry.—W. J. BURR, heretofore at Toronto, has been appointed General Agent, Passenger Department, Pittsburg, Pa., with territory covering Ohio, except that portion north of the New York Central Rd., Butler, Ind., to Toledo; Pennsylvania, on and west of Baltimore and Ohio Rd., Pennsylvania System, Hyndman to Buffalo via Berlin, Johnstown, Blairville, Freeport and Oil City; Virginia, on and west of Norfolk and Western Ry., Bristol, N.C., to Bluefield, W.Va., via Radford; West Virginia.

W. M. DOHERTY, heretofore night chief dispatcher, London, Ont., has been appointed chief dispatcher there, vice A. F. Sharpe, promoted.

J. H. EDWARD, Local Treasurer, Portland, Me., is acting as agent there, pend-

ing the appointment of a successor to the late J. A. Riddell.

F. GOULD, heretofore Travelling Freight Agent, Toronto, has been appointed City Freight Agent, there, vice E. R. Thorpe, resigned to enter Lehigh Valley Rd. service.

S. HAZZARD, heretofore conductor on Ontario Lines, has been appointed General Yardmaster, Brockville, Ont., vice C. F. McEwan, assigned to other duties.

W. H. HOWARD has been appointed Special Agent, Montreal Division, Eastern Lines, vice J. McVeigh, resigned. Office, Montreal.

W. J. LITTLE, heretofore Trainmaster, Districts 13 and 14, Barrie Division, Ontario Lines, Allandale, Ont., has been appointed Trainmaster, Districts 11 and 12, Barrie Division, Ontario Lines, vice W. J. Piggott, whose appontment as Superintendent, Stratford Division, Ontario Lines, Stratford, Ont., was announced in our last issue. Office, Allandale, Ont.

G. McBRIDE, heretofore night foreman, York, Ont., has been appointed Locomotive Foreman, Allandale, Ont.

A. B. McNAUGHTON, Superintendent, Portland Division, Portland, Me., has been given jurisdiction over all matters pertaining to maintenance of way on the division, B. Wheelwright, heretofore Engineer, maintenance of way, having resigned. The latter position has been abolished.

W. J. MATHISON has been appointed Trainmaster, District 16, District 17, Hamilton to Niagara Falls, District 19, Port Dalhousie to Port Robinson and Welland Jct., to Port Colborne, vice W. Hall, deceased. Office, Hamilton, Ont.

R. F. NICHOLSON has been appointed Assistant Engineer, Portland Division. Office, Portland, Me.

W. K. ROGERS, heretofore dispatcher, London, Ont., has been appointed night chief dispatcher there, vice W. M. Doherty, promoted.

A. L. SHANLEY has been appointed Industrial Agent, Western Lines. Office, Detroit, Mich.

A. E. SHARPE, heretofore Chief Dispatcher, London, Ont., has been appointed Trainmaster, Districts 13 and 14, Barrie Division, Ontario Lines, vice W. J. Little, transferred. Office, Allandale, Ont.

JNO. A. WRIGHT, formerly chief clerk to General Foreign Freight Agent, Montreal, and during the past year loaned to Canadian Wheat Board, has been appointed Assistant Foreign Freight Agent, G.T.R. Office, Montreal.

**Great Northern Ry.**—E. A. DYE, heretofore General Agent, Chicago North Western Ry., Vancouver, B.C., is reported to have been appointed District Freight and Passenger Agent, G.N.R., there, vice H. E. Watkins, transferred.

H. E. WATKINS, District Freight and Passenger Agent, Vancouver, B.C., is reported to have been transferred to Toronto.

**New York Central Rd.**—FRANK FOY, formerly Canadian Passenger Agent, and who, since the closing of United States railway offices in Canada, has been acting as Passenger Agent at different points in New York State, has again been given charge of Ontario territory, with headquarters, for the present, at Buffalo, N.Y.

**Minneapolis, St. Paul and Sault Ste. Marie Ry.**—J. C. PETERSON has been appointed General Agent, Winnipeg, Man.

**Pacific Great Eastern Ry.**—G. E. MacDONALD, General Manager, has resigned, as reported in our last issue. The appointment of a successor had not been considered when we were advised at the middle of April.

**Union Pacific Rd.**—L. J. CANFIELD has been appointed General Agent, Calgary, Alta.

J. H. CUNNINGHAM has been appointed General Agent, Vancouver, B.C.

## Increases in Sleeping and Parlor Car Rates.

A 20% increase in sleeping car fares, to meet an increase of from 100 to 200% in the cost of these services, will be effective on May 1, between points in the United States and on international traffic between Canada and the United States, and probably shortly thereafter between points in Canada.

The rates paid for sleeping car berths, and parlor car seats, except for the war tax, are to-day practically the same as 20 years ago. In 1911, sleeping and parlor car rates were adjusted to a standard basis per mile, involving certain slight advances, and certain slight decreases, but no general advance was made.

During the war, material for new cars could not be provided. Today, there is a marked shortage of sleeping and parlor car equipment, and the railways must provide many new cars. A sleeping car which could be obtained in pre-war days for $20,000 now costs from $45,000 to $50,000. The linen, of which there must be a big supply, now costs more than four times what it did in pre-war days. All the incidentals that enter into the cost of upkeep have doubled or trebled. The cost of operation is three times what it was 10 years ago.

By the new tariffs the minimum charge for a lower berth in standard, or first class, sleeping car is set at $2, for an upper, $1.60, for a drawing room $7, and for a compartment $6, and the existing fares are raised about 20%. This means that, in the new tariffs the lower berth fare between Toronto and New York will be $3, between Toronto and Detroit $2, both effective May 1, and, when the advance becomes effective between points in Canada, the lower berth fare between Toronto and Montreal will be $2.50, between Toronto and Ottawa $2, and between Toronto and Winnipeg $9. The new berth fares will be 80% of these figures, respectively. The minimum charge for a parlor car seat is fixed at 50c., which is felt to be a reasonable charge for the accommodation offered, but no other advances are proposed in parlor car fares.

See Board of Railway Commissioners' general order 292, on another page of this issue.

## Railways Department Estimates for 1920-1921.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items:—

**Chargeable to Capital, $23,346,695.**

Canadian Government Rys.—Construction and betterments (to be expended under the direction of and upon such terms and conditions as the governor in council may from time to time provide), $6,321,194, including a revote of $5,036,005 unexpended balance of the 1919-1920 appropriation of $11,121,681.

Miscellaneous railway equipment—To acquire directly or indirectly, or to assist in acquiring during the current fiscal year, railway equipment and materials for the purposes and upon the terms (save as herein varied) mentioned in the Statutes of 1918, chap. 38. The assistance herein provided may be by way of advances to the Canadian National Rolling Stock Co., or any company comprised in the Canadian Northern Ry. or by way of equipment or materials acquired by the Minister, $16,925,501, including a revote of $3,603,322 unexpended balance of the 1919-1920 appropriation of $35,000,000.

Hudson Bay Ry., Port Nelson Terminals, $100,000, including revote of $70,000 unexpended balance of 1919-1920 appropriation of $100,000.

**Chargeable to Income, $49,147,174.33.**

Arbitration and awards and costs of litigation, $2,000.

Board of Railway Commissioners—Maintenance and operation of, including $800 for Clyde Leavitt as Chief Fire Inspector, $190,000.

Board of Railway Commissioners—To pay expenses in connection with cases before board, $5,000.

Contribution to International Association of Railways Congress, $97.

Commissioner of Highways—To provide for organization and payment of staff of Commissioner of Highways, including A. W. Campbell, C.E., as Commissioner of Highways at $5,000 per annum, $25,000.

Governor General's cars; attendance, repairs and alterations, $5,000.

Loan not exceeding $48,611,077 repayable on demand with interest payable half yearly at 6% to be used to meet expenditures made or indebtedness incurred in paying deficits in operation or interest on securities in excess of amount available from net earnings, or paying maturing loans of the Canadian Northern Ry. Co., or any company included in the Canadian Northern Ry. System, and for construction and betterments; said loan to be secured by mortgage on the undertaking of the Canadian Northern Ry. System, containing such terms and conditions as tbe Governor in council may approve, $48,611,077.

Miscellaneous works not provided for, $2,000.

Printing and stationery, outside service, $7,000.

Surveys and inspections, and general expenditures, railways, including salaries and expenses of experts employed temporarily, $100,000.

To provide for payment of expenses in connection with the acquisition of the Grand Trunk and associated railway systems, $200,000.

Authorized by statute—Salaries of Board of Railway Commissioners, $58,500.

**Chargeable to Collection of Revenue, $5,200,000.**

Canadian Government Railways, toward deficit of working expenditure for 9 months ended Dec. 31, 1920, the management of the railways being hereby authorized to apply the receipts and revenues toward payment of the working expenditure, $5,000,000.

Compassionate allowance to widow and children of J. L. A. Frobe, who was killed while in discharge of his duty as brakeman on Canadian Government Rys. at Aston Jct., Que., Sept. 11, 1918, $2,000.

Under the head of "Civil Government," the department is voted $194,162.50 for salaries, and $28,000 for contingencies.

## United States Railway Notes.

W. D. Hines, Director General, U.S. Railroad Administration, has resigned, effective May 1.

The U.S. Federal Reserve Board has announced the appointment of a railway loans advisory committee, consisting of F. A. Delano, formerly Vice Governor of the board; Paul M. Warburg and Bradley Palmer. The committee was organized immediately, and has received railway executives who have applied for cash advances.

## C.P.R. Pension Fund.

On Dec. 31, 1919, there were 912 persons on the C.P.R. pension roll, of whom 456 were over 70 years of age; 420 between 60 and 70, and 36 under 60. The position of the fund was as follows:—

| | |
|---|---|
| Balance to Dec. 31, 1918 | $1,166,266.55 |
| Amount contributed by company | 500,000.00 |
| Amount received as interest | 45,906.65 |
| | $1,712,173.20 |
| Payment of pension allowances for year | 387,434.49 |
| Balance in cash and investments | $1,324,738.71 |

The C.P.R. is reported to have given Acadia University, Dalhousie, N.S., the original burnt clay model of "Evangeline," designed by the late Phillippi Hebert and used for the statue being erected by the company at Evangeline's Well in the Annapolis valley.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board fo Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by tbe board are given in full on anotber page of this issue.

General order 287. Mar. 22.—Amending order 260, Mar. 17, 1919, respecting regulations for transportation by freight of dangerous articles other than explosives.

General order 288. Mar. 22.—Rescinding general order 267, June 27, 1919, and amending standard conditions and specifications for wire crossings, as approved by general order 231, May 6, 1918, by striking out par. 4 of part 1, and substituting new paragraph.

General order 289. Mar. 24, 1920.—Approving, effective June 1, rules relative to inspection of locomotives and tenders by railway companies.

General order 290. Apr. 12.—Prescribing regulations for issue and recording of free transportation by railway companies.

General order 291. Apr. 7.—Amending standard conditions and specifications for wire crossings, as amended by general order 267, June 27, 1919.

29,479. Mar. 18.—Ordering C.P.R. to build standard car stock yard at Pritchard, B.C. by Sept. 1.

29,480. Mar. 22.—Approving revised general location of C.P.R. Rosetown Southeasterly Branch from mile 9.8 to 20.2, and from mile 45.7 to 59.8.

29,481. Mar. 22.—Approving stress sheet of Canadian National Rys. bridge over St. Charles River, at mile 8.7 from Quebec, and amending order 29,342, Feb. 7, by substituting mile 9 for mile 8.7.

29,482. Mar. 23.—Approving revised location of C.P.R. Lanigan Nortbeasterly Branch, mile 47.80 to 60.98, and from mile 60.98 to s.w. ¼ Sec. 32, Tp. 44, Range 18, west 2nd meridian at mile 80.

29,483. Mar. 24.—Authorizing Bloedel, Stewart & Welsh, Ltd., to carry logging railway overhead across Esquimalt & Naniamo Ry., Vancouver Island, B.C.

29,484. Mar. 18.—Dismissing application of town of Laprairie, Que., for order requiring more regular train service by G.T.R.

29,485. Mar. 23.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Bell & Reynolds in Sec. 10, Range 6, Vancouver Island, B.C., at mile 6.17 Lake Cowichan Subdivision.

29,486. Mar. 19.—Approving Canadian Northern Saskatchewan Ry. revised location from mile 0 to 1.51L and 5.07 to 10.97L, and authorizing crossing of 7 highways.

29,487. Mar. 24.—Authorizing Canadian National Rys. to cross and divert highway in s.w. ¼ Sec. 29, Tp. 27, Range 28, west 3rd meridian, Sask.

29,488. Mar. 24.—Ordering Grand Trunk Pacific Ry. forthwith to appoint caretaker at Winter, Sask., to see that station is kept clean, heated and lighted for passengers.

29,489. Mar. 22.—Extending for four months from date time within which C.P.R. may build two sidings for Fraser Co., Edmundston, N.B.

29,490. Mar. 23.—Amending order 29,024, Nov. 15, 1918, re installation of two automatic bells at Munroe's crossing, Beachville, Ont., by G.T.R., and providing that 25% of cost be paid out of railway grade crossing fund.

29,491. Mar. 25.—Authorizing Kettle Valley Ry. to build bridge 1.7 on its Copper Mountain Branch, B.C.

29,492. Mar. 25.—Authorizing Grand Trunk Pacific Ry. to build spur for Kitsumkallum Timber Co., at mile 1,659.4, B.C.

29,493. Mar. 25.—Authorizing C.P.R. to build spur and sidings for Log Supply Co., Berthier, Que.

29,494. Mar. 24.—Ordering Canadian National Rys. to appoint caretaker at Colinton Station, Alta., by May 1, to see that station is kept clean, heated and lighted for passengers.

29,495. Mar. 23.—Rescinding order 28,618, Aug. 1, re joint freight tariffs to apply to interline traffic between points on G.T.R., C.P.R. and Canadian National Rys.

29,496, to 29,499. Mar. 24.—Approving Bell Telephone Co.'s agreements with Betbesda & Stouffville Telephone Co., in York and Ontario Counties, Ont., Feb. 27; Sebright Telephone Co., in Victoria and Ountario Counties, Ont., Mar. 6; East Grey Telephone Co., in Grey County, Ont., Mar. 12; and Derby Telephone Co., in Grey Co., Ont., Feb. 24.

29,500. Mar. 23.—Amending order 28,729, Aug. 27, 1919, re G.T.R. automatic bell at Martin St. crossing, Beachville, Ont., and providing that 25% of cost be paid out of railway grade crossing fund.

29,501. Mar. 25.—Dismissing application of United Grain Growers Ltd., Calgary, Alta., for order permitting use of siding at Fahler, Alta., on Edmonton, Dunvegan & British Columbia Ry.

29,502. Mar. 27.—Suspending until furtber order tariffs of C.P.R., G.T.R., C.N.R., Toronto, Hamilton & Buffalo Ry., Dominion Atlantic Ry., Quebec, Montreal & Southern Ry., Napierville Jct. Ry., Pere Marquette Rd., and Rutland Rd., which impose additional tolls on passenger traffic from Canada to United States, Cuba and other foreign countries, where tickets are routed directly through U.S. ports or gateways, the adverse rate of exchange and the requirements of the U.S. railways for settlement in U.S. funds being stated in the said tariffs as the reasons for said additional tolls.

29,503. Mar. 27.—Authorizing Canadian National Rys. to cross and divert highways in s. w. ¼ Sec. 25, Tp. 14, Range 9, west 2nd meridian, Sask.

29,504. Mar. 25.—Authorizing C.P.R. to build extension to spur for Canadian Connecticut Cotton Mills Co. at mile 68.5, Sherbrooke Subdivision, Que.

29,505. Mar. 26.—Extending to Sept. 1, authority granted Hydro Electric Power Commission of Ontario, by orders 28,341 and 28,591, May 20 and July 23, 1919, respectively, to build temporary spur across Niagara, St. Catharines & Toronto Ry. in Stamford Tp., Ont.

29,506. Mar. 25.—Approving Canadian Northern Western Ry. revised location through Tps. 19-20, Ranges 11-12, west 4th meridian, Alta., mile 75.35 to 77.47.

29,507. Mar. 25.—Approving agreement Dec. 5, 1919, between Bell Telephone Co. and Lake Megantic Pulp Co., Milan, to Pond Siding, Que.

29,508. Mar. 29.—Authorizing G.T.R. to use bridge carrying public road immediately north of Danville station, Shipton Tp., Que.

29,509. Apr. 1.—Suspending until further order Ottawa Electric Ry. special passenger tariff C.R.C. 6, effective Apr. 5.

29,510. Mar. 29.—Authorizing C.P.R. to divert road allowance on east boundary of Sec. 27, Tp. 18, Range 14, west 2nd meridian, Saskatchewan, and to close diverted portion.

29,511. Mar. 29.—Autborizing C.P.R. to rebuild bridge 16.8 over Little Saskatchewan River, on its Lenore Subdivision, Man.

29,512. Apr. 1.—Disallowing C.P.R., G.T.R., Canadian National Rys., Toronto, Hamilton & Buffalo Ry., New York Central Rd., Central Vermont Ry. providing for increased commutation fares and ordering that new tariffs be filed for commutation passenger traffic.

29,513. Apr. 1.—Authorizing Pointe aux Trembles Terminal Ry. and Canadian National Rys. to operate trains over interlocking plant in Pointe aux Trembles Parish without first stopping.

29,514. Mar. 20.—Suspending, until further order, tariffs of Quebec Central and Wabash Rys., effective Mar. 29, imposing additional tolls on passenger traffic from Canada to U.S. destinations, also Cuba and other foreign countries where tickets are routed directly through U.S. ports or gateways, the adverse rate of exchange and the requirements of U.S. railways, for settlement in U.S. funds being stated as the reason for additional tolls.

29,515. Mar. 25.—Authorizing Montreal Tramways Co. to cross C.P.R. on Park Ave., between Atlantic Ave. and Beaumont St.

29,516. Mar. 29.—Authorizing Canadian Northern Western Ry. to build spur for W. J. Anderson in s.e. ¼ Sec. 12, Tp. 29, Range 13, west 4th meridian, Alta.

29,517. Apr. 6.—Dismissing Toronto, Hamilton & Buffalo Ry. application for recission of order 24,614, Dec. 28, 1915, for the construction of a new bridge carrying King St., Hamilton, Ont., over its tracks; also City of Hamilton's application to vary order 24,164 so as to impose the whole cost of bridge upon T.H. & B.R.

29,518. Apr. 6.—Amending order 17,774, Oct. 15, 1912, which authorized Barton Tp., Ont., and Hamilton City and Suburban Homes to carry Rosedale Ave. across Toronto, Hamilton & Buffalo Ry.

29,519. Apr. 6.—Authorizing Sherbrooke Ry. & Power Co. to build its tracks under C.P.R. at Galt St., Sherbrooke, Que.

29,520. Apr. 1.—Authorizing Alberta Government to make highway crossing over C.P.R. in north half of Sec. 3, Tp. 9, Range 26, west 4th meridian, Alta.

29,521. Apr. 3.—Authorizing G.T.R. to build spur for Tuttle & Bailey Mfg. Co. of Canada, Bertie Tp., Ont.

29,522. Apr. 3.—Relieving C.P.R. from providing further protection at crossing of Mountain Ave., 2.73 miles west of Westfort, Ont.

29,523, and 29,524. Apr. 3.—Approving Bell Telephone Co. agreements, Mar. 9, witb Cie de Telephone St. Camille, Wolfe, Richmond and Sherbrooke Counties, Que., and Mar. 24, with Ardtrea Telephone Co., Simcoe County, Ont.

29,525. Apr. 1.—Authorizing C.P.R. to build spur for Provincial Mental Asylum, Weyburn, Sask.

29,526. Apr. 7.—Authorizing G.T.R. to operate over interlocking plant where Niagara, St. Catharines & Toronto Ry. crosses Elm St., Port Colborne, Ont., without first stopping.

29,527. Apr. 12.—Approving route map showing general location of C.P.R. Leader Southeasterly Branch mile 29.0 to 50.1, and mile 88.0 to 158.6.

29,528, 29,530. Apr. 12.—Approving Bell Telephone Co. agreements, Mar. 22, with The Victory Telephone Co., Grey and Bruce Counties, Ont.; Mar. 25, with La Cie de Telephone de Warwick, Drummond and Arthabaska Counties, Que.; and Mar. 27, with Sandwich West Co-operative Telephone Co., Essex County, Ont.

29,531. Apr. 8.—Approving location of C.P.R. station at Insinger, Sask.

29,532 Apr. 12.—Approving agreement Mar. 17, between Bell Telepbone Co., and Ayr Rural Telephone Co., of Waterloo, Brant, and Oxford Counties, Ont.

29,533. Mar. 29.—Authorizing C.P.R. to build extension of spur for Revelstoke Sawmill Co., Calgary, Alta.

29,534. Apr. 13.—Authorizing Canadian National Rys. to rebuild bridge over Moira River, Hungerford Tp., Ont.

29,535. Apr. 14.—Authorizing Cbief Commissioner to approve revised location of C.P.R. Bassano Easterly Branch (Empress to Milden) from mile 222.13 to 253.44.

29,536. Apr. 13.—Approving G.T.R. bylaw 37, Mar. 12, authorizing Vice President, Freight Traffic Manager or General Freight Agent to issue tariffs of tolls for freight traffic.

29,537. Apr. 9.—Autborizing C.P.R. to build its Swift Current Northwesterly Branch at mile 311 at grade, across Grand Trunk Pacific Ry. near Torlea, Alta.

29,538. Apr. 15.—Approving C.P.R. location of semi-enclosed shelter at Robertson, Alta.

29,539. Apr. 15.—Dismissing complaint of Lake Lumber Co., J. C. Wilson Lumber Co., and merchants of Qualicum Beach, B.C., against alleged discrimination in differential of 3c a 100 lb. over rates from Vancouver on lumber from Qualicum Beach and Dashwood to destinations between British Columbia-Alberta boundary and Port Arthur, Ont., compared with differential of 1½c a 100 lb. from Victoria, B.C.

29,540. Apr. 10.—Authorizing C.P.R. to build spur for North Star Oil & Refining Co., Camrose, Alta.

29,541. Apr. 15.—Authorizing Canadian National Rys. to rebuild bridge over west channel of Moira River (Stoco Lake) at mile 32.9 from Yarker, Ont.

29,542. Apr. 15.—Authorizing Canadian Northern Western Ry. for four months from date to carry traffic over its Hanna-Medicine Hat Branch, from Bonar, mile 25.9 from Saskatoon to mile 47.

29,543. Apr. 15.—Authorizing Canadian National Rys. to carry traffic between Alpha St. and Point Ellice bridge, Victoria, B.C., speed not to exceed 8 miles an hour.

29,544. Apr. 15.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. to rebuild pile trestle and erect an 80-ft. plate girder at mouth of Campbell Creek, bridge 68, near White Rock, B.C.

29,545. Apr. 16.—Authorizing Michigan Central Rd. to build spur for Carbon Alloy Steel Co., Fraser station, Ont.

29,546. Apr. 16.—Authorizing G.T.R. to operate trains over spur serving Oakoal Co. (Canada), Toronto.

29,547. Apr. 19.—Authorizing C.P.R. to build spur for McGillivray Creek Coal & Coke Co., Coleman, Alta.

29,548. Ordering that crossing of G.T.R. Don Belt Line and C.P.R. spur on Eastern Ave., Toronto, be protected by watchman appointed by G.T.R. between 7 a.m. and 11 p.m.

29,549. Apr. 15.—Authorizing Canadian National Rys. to rebuild spur subway across Bowes St., Parry Sound, Ont.

29,550. Apr. 19.—Authorizing Ottawa Electric Ry. to file within seven days from date tariff effective Apr. 6, showing passenger fares between Holland Ave. and Britannia-on-the-Bay, and between Cloverdale Road and the Rifle Range, Ottawa, Ont.

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**D. B. Hanna Sues for Slander.**—F. S. Cahill, M.P., for Pontiac County, Que., in addressing the Montreal Reform Club, April 17, is reported to have made certain charges against D. B. Hanna, President Canadian National Rys., among others that he is favoring Mackenzie-Mann interests and that they are making large profits out of the Canadian National Rys. Mr. Hanna has instructed his solicitor to institute proceedings for slander against Mr. Cahill, for unstated damages.

**Railway Lands Patented**—Letters patent were issued during March for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

| | Acres. |
|---|---|
| Canadian Northern Alberta Ry. | 1.34 |
| Canadian Northern Ry. | 374.101 |
| Canadian Pacific Ry. roadbed and station grounds | 20.43 |
| Grand Trunk Pacific Branch Lines Co. | 56.67 |
| Nicola, Kamloops and Similkameen Ry. | 143.09 |
| Total | 595.631 |

## C.P.R. Equipment Trust Certificates.

The following prospectus has been issued of the $12,000,000 C.P.R. equipment trust 6% gold certificates, referred to in Canadian Railway and Marine World for April, which will be issued under Philadelphia plan, in denominations of $1,000, to mature $500,000 semi-annually Oct. 1, 1920 to April 1, 1932. Dividend warrants will be payable semi-annually April 1 and Oct. 1. Principal and dividends will be payable at New York, N.Y., and Pittsburg, Pa., in U.S. gold coin. The certificates will be specially secured by standard new railway equipment costing $15,000,000 delivered. The title to this equipment is to be vested in the Union Trust Co. of Pittsburg, as trustee, and it will be leased to the railway company. Pending receipt of the equipment, which is to be delivered in Canada, the trustee will hold for the benefit of the certificate owners $15,000,000 in cash at the Bank of Montreal, subject to the trustee's order.

The C.P.R. Co. controls a transcontinental railway system of about 18,500 miles extending from St. John, N.B., to Vancouver, B.C., penetrating the U.S. as far as Chicago and St. Paul, and connecting by its own steamship lines with European and Asiatic ports. Of the 8,300 miles of road directly owned, only about 180 miles, branch lines, are mortgaged. The C.P.R. has been able to maintain its earnings on a very substantial basis, in spite of increased operating costs, as evidenced by the following income accounts reported by the company:

| Years ended Dec. 31: | 1917 | 1918 | 1919 |
|---|---|---|---|
| Gross earnings | $152,389,335 | $157,537,698 | $176,929,060 |
| Operating expenses | 105,843,317 | 123,035,310 | 143,996,024 |
| Net earnings | 46,546,018 | 34,502,388 | 32,933,036 |
| Other income | 8,744,617 | 7,934,775 | 9,049,343 |
| Total income | 55,290,635 | 42,437,163 | 41,982,379 |
| Fixed charges | 10,229,143 | 10,177,513 | 10,161,510 |
| Balance after charges | $45,061,492 | $32,259,650 | $31,820,869 |
| Times charges earned | 5.40 | 4.17 | 4.13 |

The dividends on the $12,000,000 6% equipment trust certificates will be $705,000 in the first year. Had fixed charges in 1919 been increased by this amount, total charges would have been earned about 3.85 times, without allowing for any benefit from the proceeds of this issue. Dividends have been paid on the company's ordinary stock since 1883 and since 1910 the rate has been 10% a year. The equity junior to funded debt and equipment issues is represented by over $80,000,000 of 4% preference stock and by ordinary stock having at present quoted prices an indicated market value of $320,000,000.

The prices for the certificates range from 99⅝ for those due Oct. 1, 1920, to 94⅞ for those due April 1, 1932. The first 12 maturities yield approximately 6¾% and the last 12 maturities approximately 6⅝%.

## Grand Trunk Railway Acquisition Legislation.

A bill was introduced in the House of Commons, April 12, by the Minister of Railways, to confirm the agreement dated March 8, 1920, between the Crown and the Grand Trunk Railway Co., for the acquisition by the Crown of the company's capital stock, with the exception of the four per cent. guaranteed stock, and was read a first time.

The bill contained two sections and a schedule, the latter being the agreement dated March 8, 1920, executed under the powers of the Grand Trunk Railway Acquisition Act, 1919. The first section of the bill provided for the correction of the agreement in two particulars, viz.:—"By adding thereto, under the caption, "Companies directly controlled by the Grand Trunk Railway of Canada," the following:—Vermont and Province Railroad Co., controlled by stock owners' corp., 100 per cent.; Pembroke Southern Ry. Co., controlled by stock owners' corp., majority, and by striking out of the first schedule of the agreement under the caption "Companies controlled by the Grand Trunk Ry. Co., of Canada by lease," the words, "Pembroke Southern Ry. Co.,"

The second section of the bill was as follows:—"The said agreement, as corrected as aforesaid, is hereby declared to have been sufficiently ratified by the holders of stocks of the G. T. Ry. Co. as required by Sec. 7 of the said act, and to be binding and effective, and is hereby in all respects ratified and confirmed as the agreement authorized by the said act and for all the purposes thereof."

The bill was passed through its various stages up to the third reading without amendment, when on the motion to read it the third time, April 22, unanimous consent was given to the insertion of the following as section 3:—"Nothing herein contained shall be construed as authorizing any lending of money by the government to the managing committee, mentioned in the fourth section of the said agreement, without the specific authority of parliament."

Hon Mackenzie King, moved to return the bill to committee of the whole for the consideration and insertion of the following words:—"Any right or interest of any employe of the G. T. Ry. Co. existing in the pension system, prior to the strike of the company's employes which occurred in July, 1910, is hereby declared not to have been affected by the said strike or any circumstance or condition arising out of or in connection therewith."

This motion was defeated by 90 to 69, and the bill was then passed and sent to the Senate.

## Standard Conditions for Wire Crossings Over Railways.

The Board of Railway Commissioners passed general order 291, April 7, as follows:—Re sec. 372 of the Railway Act, 1919, for carrying of wires and cables along or across railway tracks; and application of Canadian National Rys. for an order amending the Standard Conditions and Specifications for Wire Crossings, approved by general order 231, May 6, 1918, as amended by general order 267, June 27, 1919. Upon reading what is filed in support of the application, the Canadian Pacific and Grand Trunk Railways concurring therein. It is ordered that the said standard conditions and specifications, as approved by general order 231, be amended.

(1) By striking out paragraph 4 of part 1, and substituting therefor the following, viz.:—"4. The applicant, before any work is begun, shall give the railway at least 72 hours prior notice thereof in writing, and the said railway company shall be entitled to appoint an inspector, under whose supervision such work shall be done, and whose wages, at a rate not to exceed $11 a day, shall be paid by the applicant, such payment to cover both wages and expenses. When the applicant is a municipality and the work is on a highway under its jurisdiction, the wages of the inspector shall be paid by the railway company."

(2) By striking out paragraph 4 of part 2 and substituting therefor the following, viz.: "4. Before any work of laying, removing, or repairing any pipe, conduit, wire, or cable is begun, the applicant shall give to the railway company at least 72 hours prior notice thereof in writing, accompanied by a plan and profile of the part of the railway to be affected, showing the proposed location of such pipe, wire or cable, conduit, and works contemplated in connection therewith; and the said railway company shall be entitled to appoint an inspector to see that the applicant, in performing said work, complies in all respects with teh terms and conditions of this order, and whose wages, at a rate not exceeding $11 a day, shall be paid by the applicant, such payment to cover both wages and expenses. When the applicant is a municipality, and the crossing is on a highway under its jurisdiction, the wages of the inspector shall be paid by the railway company."

And it is further ordered that general order 267, June 27, 1919, and general order 288, Mar. 23, 1920, made herein, be rescinded.

## Telegraph, Telephone and Cable Matters.

The Oldtime Telegraphers and Historical Association will hold its 1920 meeting at Toronto, Sept. 1 and 2. G. D. Perry, General Manager, Great North Western Telegraph Co., is President.

The Pacific Cable Board announces the following staff changes: W. E. Lawson, from Bamfield, B.C., to Sydney, Australia; T. Aikins and J. Ritz, from Suva to Halifax, N.S., and F. C. Wilkins, from Montreal to Halifax, N.S.

The Great North Western Telegraph Co. has opened offices at L'Anse a Louise, Little Metis lighthouse, Que., Bankfield, Missonga and Penhurst, Ont., Runnymede, Sask., and Redland, Alta., and has closed its office at Shippegan, N.B., Riviere Ouelle Wharf, Que., and Larson and Minataree, Ont.

The daily press made the statement recently that, "all telegraphs in Canada except the C. P. R. are shortly coming under the Government's Great North Western system," which is not quite correct. The Great North Western Telegraph Co., came under Dominion Government control, through the taking over of the Canadian Northern Ry. by the Canadian National Ry. Co. The G. N. W. T. Co., in conjunction with the C. N. R., has about completed the erection of copper wires between Toronto and Montreal in the east, and Winnipeg in the west. The erection of wires has also been about completed between Edmonton, Alta., and Vancouver, B.C., and between Kamloops and Victoria, B.C. The company already has wire facilities be-

tween Winnipeg and Edmonton, and the erection of the new wires will give a through Canadian service between Montreal and Toronto and Vancouver. The G. N. W. T. Co. is negotiating with the Western Union Telegraph Co. for the transfer by the latter of its plant and business in British Columbia, but it is not yet certain that the transfer will be made. It has been suggested that the Dominion Government telegraph system should be transferred to, or operated by the G. N. W. T. Co. but no such arrangement has yet been considered.

## Telegraph and Telephone Lines Estimates for 1920-1921.

The Public Works Department's estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the followings items, chargeable to income:—

| | |
|---|---|
| **NOVA SCOTIA.** | |
| Cape Breton Telegraph System— | |
| Renewal of poles between Port Hawkesbury and Port Hood and between Strathlorne and Inverness | $ 3,000 |
| Completion of renewal of poles between East Bay and Ball's Creek | 800 |
| Renewal of poles between Englishtown and Ingonish Ferry | 2,600 |
| Reconstruction of telephone line between Harvard Lake and N.E. Margaree | 1,000 |
| Pictou Island, telephone cable | 8,000 |
| **QUEBEC.** | |
| Improvements to repair service | 3,000 |
| Grosse Isle quarantine telephone line, renewal of poles, etc | 400 |
| **ONTARIO.** | |
| Bath—Amherst Island telephone line, to grant subsidy of $1,200 to Amherst Island Telephone Co., and to provide cable | 2,200 |
| **SASKATCHEWAN AND ALBERTA.** | |
| Peace River line, office and dwelling at Grande Prairie | 5,000 |
| Repairs and improvements to office buildings | 500 |
| **BRITISH COLUMBIA.** | |
| Mainland telegraph and telephone lines, to provide for second wire between Similkameen and Princetown | 7,300 |
| Vancouver Island, construction of branch telephone line from Vancouver Island to Port Harvey, Cracroft Island | 7,500 |
| | $ 41,300 |
| **CHARGEABLE TO COLLECTION OF REVENUE.** | |
| Prince Edward Island and mainland | $ 7,000 |
| Land and cable telegraph lines, Lower St. Lawrence and Maritime Provinces, including working expenses of ships required for cable service | 210,000 |
| Saskatchewan | 70,000 |
| Alberta | 107,000 |
| British Columbia, mainland | 79,300 |
| British Columbia, Vancouver Island District | 110,000 |
| Yukon system (Ashcroft-Dawson) | 246,000 |
| Telegraph and telephone service, generally | 10,000 |
| | $839,300 |

## Among the Express Companies.

The Canadian National Express Co. has opened offices at Smoky Lake, Radway Center, and Ashmont, Alta.

The Canadian National Ex. Co. has opened offices at Runnymede, Sask., and Redland, Alta.

W. S. Stout, President, Dominion Express Co., returned to Toronto early in April, after spending some time at Pas Christian, Mississippi.

The American Railway Ex. Co. put into effect Apr. 15, a rule which requires that prepayment be made on all parcels shipped from Canadian to U.S. points, and that payment may be made in Canadian currency from the point of origin.

The Minister of Railways stated, in answer to questions in the House of Commons recently, that the Dominion Ex. Co. pays Canadian Government Rys. 50% of its gross earnings for the service of C.G.R. agents and the use of offices and stations, and also for the privilege of operating over the C.G.R. The Canadian Ex. Co. operates over the C.G.R. on the same basis. Replying to a question as to the Canadian National Rys. taking over control of the Canadian Ex. Co. and whether it is the intention to give the latter company the exclusive privilege of the services of the agents and stations, the Minister said, that as this is a question of policy, it will be considered by the C.G.R. management.

The Dominion Ex. Co. was defendant in a suit brought by a Russian named Kosovsky, in the Court of Review at Montreal, recently, for loss sustained through a money transaction between Canada and Russia. The plaintiff arranged for the company to buy 1,165 roubles for dispatch to his wife in Russia, but owing to the unsettled state of that country, the party could not be found, and the money was returned. In the meantime the value of the rouble had dropped considerably, so that the 1,165 roubles were only worth $148.50 in Canadian currency, which the company offered to pay the plaintiff. It was held that the company could not be held responsible for any loss caused through differences in the rate of exchange, and judgment was given in favor of the company, except that the plaintiff was given the option to demand payment in Russian money.

## Board of Railway Commissioners' Jurisdiction Over Express Companies.

The Board of Railway Commissioners gave the following ruling Mar. 24: The board's powers in regard to express business are set out in the Railway Act, secs. 360-366, inclusive. The jurisdiction is concerned with tolls. The group of sections 360-363 is concerned with the formalities as to preparation, filing, etc., of tariffs. Sec. 365 requires that contracts, conditions, etc., limiting the liability of express companies are to be approved by Board. Sub-section 2 (b) of the same section provides that the board may prescribe the terms and conditions under which "goods may be collected, received, cared for or handled." This is a power in regard to the liability, not in regard to requiring the establishment of facilities. See in this connection Canadian and Dominion Express Co. vs. Commercial Acetylene Co., 9 Can. Ry. Case, 172, at p. 174. The only other section in the group referred to, 366, is concerned with returns by companies charging express tolls.

Sec. 364 gives the board power to define carriage by express. This was formerly sec. 352 of The Railway Act; and it was decided in Canadian and Dominion Express Cos., vs. Commercial Acetylene Co., May 20, 1909, 9 Can. Ry. Case, 172, that express companies were at liberty to exercise their own discretion in refusing to carry by express any particular commodity.

Sec. 364 of the present act differs from sec. 352 of the former act by the addition of the words "and may order that all such goods as the board may think proper shall be carried by express." The effect of this is to remove the discretion which the express companies formerly had. The express company may not discriminate between goods as to carriage, but this does not give power to direct the installation of facilities at stations. It may further be noted that in the group of sections already referred to, there is no section which gives the board power to direct that facilities shall be afforded.

Subject to the change in sec. 364 as above referred to, the group of sections covering express business are, with minor exceptions as to amendments, the same as in the first express judgment given. In that judgment, the following position was laid down: "No applications have ever been made to the board to require railway companies in Canada to furnish either an express service, or any facilities connected with such a service. All applications have been made against the express companies. It is apparent that as the act now stands, orders for improved facilities for handling the express traffic can only be made against the railway company. By improved facilities is meant car service, shelters, and the like; and if express companies do not provide for these matters, with the railway companies over whose lines they operate, and remove all proper causes of complaint, then it will be the board's duty to deal directly with the railway companies as to these matters, and complaints from the public must be made against them." In the matter of express companies, etc., pp. 49-50.

At a later date, the board had before it an application of the Village of Cumberland, Ont., for reinstatement of express service which had for some time been rendered by the Canadian Northern Ry. and then taken out. In reply the Board stated on July 14, 1911: "The board's jurisdiction in the matter of express service is much more limited than it is in the matter of freight and passenger rates. Under the act the board has no jurisdiction to compel the Canadian Northern Express Co. to reinstall the express service which the board has been advised is withdrawn between Hawkesbury and Ottawa. If the freight department of the railway refuses to give proper facilities for the handling of traffic, complaint as to this should be put in form and submitted to the board, when the matter will be taken up with the railway company."

In dealing with an application of the Town of Sudbury for a direction that the Dominion Express Co. should establish an up-town office, to receive and deliver express parcels, it was pointed out that a direction, if any, as to the installation of an up-town express office must be a direction to the railway, not to the express company. A similar ruling, in regard to the same point, is to be found in connection with a complaint from the Town of Pincher Creek, complaining inter alia, against the closing of the Dominion Express Co.'s up-town office.

In summary form, the board's jurisdiction is as to tolls and contracts, etc., limiting liability, with the additional power, conferred by sec. 364 amended as already noted, of saying what may be carried by express. The board is given no power to direct an express company qua express company, to install facilities or to arrange that specific service shall be given at specific stations. It follows from this that so far as jurisdiction is concerned, the board has no power to direct an express company to reinstate at a station or stations express facilities which it has removed, nor has the board power, as a matter of jurisdiction, in the first instance to direct the installation of facilities at a station or stations. Its jurisdiction over telegraph, telephone and express companies is essentially a rate jurisdiction, and much more limited than in the case of railways.

# Electric Railway Department

## Increases in Electric Railway Freight and Passenger Rates.

**British Columbia Electric Ry.**—A press report states that Vancouver City Council is considering the advisability of asking the Board of Railway Commissioners for a rehearing of the company's application for a 6c fare, which was granted in Oct., 1919.

**The Cape Breton Electric Co.** is reported to have applied to the Nova Scotia Public Utilities Commission for permission to increase its car fare from the present rate of 6c to 7½. C. C. Curtis, Manager, addressed the Sydney Board of Trade, recently, on the company's financial position, with a view of showing why an increase of fare is necessary.

**Edmonton Radial Ry.**—The Edmonton, Alta., Bulletin, in a recent article, said:—"The flat rate is illogical. It defies the principle that the charge should be in proportion to the service rendered. Having found that we cannot defy that principle without bankruptcy of the street railway, why keep on trying?" The article claims that "the high fare kills short haul traffic," and that "there is no money in long haul traffic," and suggests that the fares should be in proportion to the distance a passenger is carried.

**Hamilton St. Ry.**—At a meeting of the Hamilton, Ont., City Council's Street Railway Committee, April 26, it was reported that the Hamilton St. Ry. Co. was preparing to ask for power to increase fares.

**London Street Ry.**—In July, 1919, the London, Ont., City Council passed a by-law authorizing the London St. Ry. to increase its fares for adults to 5c or 7 tickets for 25c, with limited tickets good from 6.30 to 8 a.m. and from 5 to 6.30 p.m., at 9 for 25c. This bylaw was quashed by Chief Justice Falconbridge. The case was then appealed to the High Court's Appelate Division, which in April 9 reversed the late Chief Justice's decision. We are officially advised, however, that at the period of eight months specified in the bylaw during which the higher fare provided for in it was to prevail had expired before the Appellate Division's decision was rendered, had expired, the higher fares cannot be put into effect again.

**Montreal & Southern Counties Ry.**—The Board of Railway Commissioners passed order 29,564, Apl. 24, authorizing the company to publish and file tariffs making an increase of 20% in its passenger fares, the tariffs to be effective within seven days from the date of the order. This order was cancelled by order 29,571, passed Apl. 26, as follows:—Re application of Montreal & Southern Counties Ry. for an order permitting it to file tariffs providing for an increase of 20% in its fares now charged for the carriage of passengers: Upon hearing the application at Montreal, Mar. 9, in the presence of counsel for and representatives of the applicant company, the South Shore Welfare League, the towns of St. Lambert and Longueuil, the City of Montreal, and other parties interested, and what was alleged, it is ordered that the company be authorized to publish and file tariffs making an increase of 20% in its present passenger fares; the said tariffs to become effective when the standard tariffs are published, with a notice of their approval, in The Canada Gazette, in compliance with the provisions of the Railway Act 1919. That order 29,564, dated April 24, made herein, be rescinded.

The Nova Scotia Tramways & Power Co's directors' report, presented at the annual meeting recently, says that the average fare in Halifax is 4.3c a passenger. A bill was introduced in the Nova Scotia Legislature recently, providing for an increase of fares on the company's electric railway lines in Halifax. A press report states that the bill passed for the payment of three rates:—7c for a single fare; 4 tickets for 25c, or a strip of 16 tickets for 90c. The bill is also said to provide that the Public Utilities Commission shall have jurisdiction over the fares to be charged on the lines after July 1, 1921.

**Canadian Electric Railway Association.**

Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.

Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.

President, A. Gaboury, Superintendent, Montreal Tramways Co.

Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

Executive Committee, The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

Official Organ—Canadian Railway and Marine World, Toronto.

**Ottawa Electric Ry.**—Canadian Railway and Marine World for April contained a copy of the company's special passenger tariff C.R.C. 6, which it filed to become effective April 5, following the Supreme Court's judgment allowing the company's appeal against the Board of Railway Commissioners' judgment refusing it permission to increase fares on its suburban lines to Britannia-on-the-Bay and Rockliffe. On April 1 the Board of Railway Commissioners, on the application of the City of Ottawa and Nepean Tp., suspended the tariff until further order. The tariff provided for three zones on the suburban lines, two west of Holland Ave. on the Britannia line and one east of Cloverdale Road on the Rockcliffe line. It also eliminated workmen's limited tickets on the extension. On April 19 Chief Commissioner Carvell gave judgment, deciding that there should be but one zone between Holland Ave. and Britannia-on-the Bay, instead of two as asked by the company, that there should also be a zone east of Cloverdale road and that workmen's limited tickets should be issued on the interurban extensions, as on the city lines. The board passed order 29,550 accordingly on the same day in accordance with which the company filed Special Passenger Tariff C.R.C. 7, cancelling C.R.C. 4, effective April 26, and providing for separate fares on the two interurban extensions as follows:—

Between points within the area defined by Holland Ave. in the west, the City of Hull in the north, Cloverdale Road in the east, and Grove St. in the south; and between points therein and the Experimental Farm and intermediate points.

Also between Holland Ave. and Britannia Park, and intermediate points; and between Cloverdale Road and the Rockliffe rifle range and intermediate points.

Between 5.30 a.m. and 12 midnight 5c. Children under 10, 3c.

To workingmen and others, 33 tickets for $1, or 8 tickets for 25c, good from first trip in morning until 7.30 a.m., and between 5 and 6.30.

Seven tickets for 25c, good only on Sunday.

School children under 14 to and from school at the rate of 40 tickets for $1, good between 7 and 9.30 a.m., 11.30 a.m. and 1.30 p.m., and 3.30 and 5 p.m.

Between 12 o'clock midnight and 5.30 a.m., 10c.

The above fares are of course in addition to fares on the city lines, for passengers travelling over both city and interurban lines and are additional to the city fares as charged formerly.

**Peterborough Radial Ry.**—A Peterborough, Ont., press dispatch of April 7 says:—To meet the cost of extension of the street railway, a new schedule of fares is contemplated at 5c, 6c, 7c and 10c. The 10c fares will be for a service to Crawford's Grove and other points outside of the city.

**Regina Municipal Ry.**—A press report of April 20 stated that the Regina, Sask., City Council was to consider on April 21 the report by D. W. Houston, Superintendent, recommending the adoption of a 6c. fare unless the people are prepared to endorse the operation of one-man cars.

**St. Thomas Municipal Ry.**—The St. Thomas, Ont., City Council has decided to eliminate workmen's tickets, sold formerly 8 for 25c. The fares now are 5c cash; 6 tickets for 25c, or 24 for $1; children from 5 to 12 years, 10 tickets for 25c.

**Winnipeg Electric Ry.**—The hearing of the Winnipeg Electric Ry.'s application for power to charge increased fares was resumed before the Manitoba Public Utilities Commissioner April 15.

A recent press report stated that an understanding had been reached between the company and the city on the fare question, but we were officially advised April 12 that there was no foundation for the report.

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**Chatham, Wallaceburg & Lake Erie Ry.'s Future.** — The Chatham, Ont., Chamber of Commerce is reported to have invited Sir Adam Beck to visit the city to discuss with representative of the various municipalities served by the C. W. & L. E. R. the advisability of taking it over as part of the Hydro Electric Power Commission of Ontario's system of electric railways. Representatives from various municipalities met at Wallaceburg, Ont., Mar. 31, and appointed a committee to invite the C.P.R. to acquire the line and to extend it from Wallaceburg to Sarnia.

# Auditor's Report on Hydro Electric Power Commission of Ontario's Electric Railway Projects.

G. T. Clarkson, F.C.A., who was appointed by the Ontario Government to audit and report upon the Hydro-Electric Power Commission of Ontario's accounts, was asked by the Premier, recently, to report on 1, The state of the affairs of each of the systems and companies controlled or operated by the commission; 2, The approximate amount of money which must be obtained by the province within the next two years and be loaned to the commission in order to allow it to complete works undertaken by it and now in course of construction, and to pay debts which become due within that period; 3, To express an opinion as to the soundness, from a business standpoint, of each of the undertakings now operated by the commission, and as to whether there are any reasons why, with the government sympathetic and desirous of supporting the commission, so far as it can be done with benefit to the municipalities and the province, the government cannot safely continue and extend support to the commission.

Following is the portion of Mr. Clarkson's report dealing with the Hydro-Electric railway lines:—

Under the provisions of the Hydro-Electric Railway Act, 1914, and amendments thereto, the commission is authorized to enter upon the construction or purchase and operation of electric railway lines when and so soon as (a) The Lieutenant-Governor in council shall have authorized the municipalities interested to enter into agreements with the commission for the construction and operation of any electric railway; and (b) The municipalities interested shall, in respect of any proposed line, have signed agreements containing terms and conditions laid down by the act, including the assumption on their part of liability for the costs of construction and operation of such a line.

Under sec. 6 of the act, it is provided that the commission may raise money for the construction and equipment of such a railway line by the issue of bonds secured upon the railway and all assets belonging thereto, and further, that it may from time to time increase the amount of the bonds so to be issued by any amount which it deems necessary to cover the costs of construction and equipment or to provide for extensions or improvements to the line.

Under sec. 7 of the act it is provided that neither the province nor the commission shall be liable for the payment of the bonds to be issued by the commission, except to the extent of the moneys which shall be received in connection with the operation of the railway line or from the sale of debentures to be deposited with the commission by the municipalities. Under sec. 8 of the act, however, it is provided that the Lieutenant-Governor in council may authorize the Provincial Treasurer to guarantee the payment of the bonds issued in respect of any radial line they cannot be sold by the commission to advantage without the guarantee of the province.

The municipalities on their part are required to deposit debentures to the amount of their respective shares of the costs of construction and equipment of the railway line, with the commission, and these debentures are to be held by the commission as collateral security for the bonds issued by it, subject to the right on its part to sell or dispose of so much of them as may be necessary at any time to meet the payment of any amounts due by a municipality in default. The agreements with the municipalities are very rigid in character, in that the responsibilities assumed by each municipality are based upon the costs of construction and operation of a line, the exact location and character of which is definitely laid down in each agreement. Legal opinion is that there is doubt as to whether the obligations assumed by any municipality can be enforced in the event that a line shall be constructed and operated for a portion only of the distanct prescribed in the agreement to which such municipality is a party; this is particularly the case if the portion constructed becomes a defined part of a new system comprised of the part of one system and the part or the whole of another system, leaving any part of either of the original systems unconstructed.

The commission has in contemplation the construction or purchase and operation of the following lines:—(a) Port Credit to St. Catharines Line, to run between the Village of Port Credit and the City of St. Catharines; (b) Toronto to Port Credit to London line, to run between the City of Toronto, to the Village of Port Credit, and the City of London; (c) The Toronto and Eastern line, to run from the City of Toronto to the Town of Bowmanville.

Necessary agreements have been executed with the municipalities in respect of the Port Credit to St. Catharines line, and such agreements have been approved of by the Lieutenant-Governor in council. Agreements have been voted upon by the municipalities interested in the Toronto to Port Credit to London line, but the same have to be signed, I am informed, by the municipalities between Toronto and Port Credit only. Agreements with the municipalities in respect of the Toronto and Eastern line have been executed and the approval of the Lieutenant-Governor in Council thereto has been obtained.

Costs of construction and purchase of the Port Credit to St. Catharines line are estimated by engineers of the commission at $11,000,000, which amount it is proposed to raise when and as required by sale of bonds of the commission. Certain of these bonds have already been guaranteed by the province and are in the hands of the commission. The commission has entered upon certain obligations in connection with the acquisition of right of way and for supplies and materials, and these obligations amount to between $250,000 and $300,000.

In order to provide for connection of the Port Credit to St. Catharines line with the City of Toronto, the commission has made expenditures and incurred liabilities to the amount of upwards of $650,000, and it states that these expenditures have been made as part of the costs of construction and purchase of the proposed Toronto to Port Credit to London line, in respect of which it intends to apply for legislation authorizing it to construct and operate the same in two divisions, to be located between Toronto and Port Credit, and Port Credit and London. Agreements have been executed by the municipalities between Toronto and Port Credit, but not by those between Port Credit and London; accordingly the terms of the Hydro-Electric Railway Act have not as yet been complied with in respect of the Toronto to Port Credit to London line as voted on by the municipalities. The commission states that it received assurances from Sir William Hearst, when Premier of Ontario, that if it would obtain resolutions by the municipalities interested, requesting the government to introduce and pass amendments to existing legislation that may be necessary to validate the building of the Toronto to Port Credit section as a part of the Toronto to St. Catharines Hydro-Electric Railway (so as to make the same legal, valid and binding upon the municipalities), that the government would, with the presentation to it of such resolutions, support legislation to that effect. In such event Sir William Hearst is said to have expressed the opinion that no difficulty would be met with in carrying out the wishes of the commission to have the bonds necessary for the construction and equipment of such line guaranteed by the province. On the basis of these assurances, therefore, and with resolutions by the municipalities in its possession, the commission, although without statutory authority to do so, has felt justified in making expenditures amounting to $550,000 out of the funds held by it under the terms of The Power Commission Act, in the belief that by so doing it would make a considerable saving in the cost of the Toronto to Port Credit line. Engineers of the commission estimate that the cost of construction of the Toronto to Port Credit line will be upwards of $5,000,000 to $6,000,000.

Estimates of the engineers of the commission indicate that the cost of construction of the Toronto and Eastern line will be about $9,000,000, to be raised as and when required by sale or issue of the commission's bonds guaranteed by the province. The approval of the Lieutenant-Governor in council to the agreements with the municipalities has been obtained, and expenditures upon the line to this date amount to about $10,000.

As the costs of construction or purchase and operation of the above mentioned electric railway lines are matters which engineers alone can estimate at this time, I am unable to make any further statement to you with reference to them. Engineers of the commission are of the opinion, however, that the revenues of such lines will be sufficient to meet costs of operation.

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Niagara Falls, Wesley Park and Clifton Tramway Co.—We are officially advised that this company's franchise in Niagara Falls, Ont., expired Mar. 31, and that the city council had given notice that it would assume the ownership on the expiration of the franchise. The citiy council recently advised the Niagara, St. Catharines & Toronto Ry., which owns the N.F., W.P. & C.T. Co., that it was applying to the Ontario Railway and Municipal Board for a board of arbitration to decide upon a price for jects to the near side, some of which the line. In the meantime the line is being operated by the N.S.C. & T. Ry. as formerly, but wthout any agreement with the city.

# British Columbia Public Utilities Commission Abolished.

In the British Columbia Legislature, April 8, a government bill to repeal the act of 1919 providing for the regulation of public utilities and establishing a Public Utilities Commission for the province was read a first time.

1. This act may be cited as the Public Utilities Act Repeal Act.
2. The Public Utilities Act is hereby repealed.
3. Where, because of the enactment or operation of the Public Utilities Act, it is deemed just, necessary, or expedient that any of the powers or duties conferred or imposed on the commission by the said act should be exercised, the Lieutenant-Governor in Council may authorize the commission to so exercise its powers or duties to the extent of such authorization as if the said act had not been repealed, or may appoint any other person for this purpose, and in either case may provide for remuneration for such services, or may himself make any order for the doing of anything provided for under and within the scope of the powers conferred on the commission by the said act, the doing or making of which may so become necessary or expedient, and he may make any order or regulation which may appear necessary or expedient because of the repeal of the said act or because of conditions arising or rights affected as a consequence.
4. The jurisdiction, rights, powers, duties, and authority of every person, city, municipality, minister of the Crown, public official, or public body divested, modified, or affected by the enactment of the act hereby repealed shall revive and be restored as if such act had not been enacted.
5. In the event of the British Columbia Electric Ry. Co. at any time coming under the jurisdiction of the Provincial Legislature or being declared by a court of appellate jurisdiction, whose decision is not overruled, to be under provincial jurisdiction and not a work for the general advantage of Canada, all agreements heretofore existing, statutory or otherwise, between the company and the City of Vancouver, or any other municipality shall become operative and binding according to the tenor thereof as if the Public Utilities Act had never been passed.
6. The moneys collected by the British Columbia Electric Ry. Co. and held as a trust fund under and by virtue of the provisions of subsec. (4) of section 11 of the Public Utilities Act from, on or after April 9, 1919, when the said trust first became operative, to July 7, 1919, shall be divided as follows: One-half to the British Columbia Electric Ry. and the other half to the Vancouver General Hospital; and the railway company shall forthwith pay to the hospital its share of the said money, which payment shall constitute a discharge of the trust as to the money collected between the two aforementioned dates to which the said trust applied.
7. All acts done by the Minister of Railways since the enactment of the Public Utilities Act purporting to be done under the provisions of the Railway Act are hereby declared to be valid as of their date, notwithstanding the provisions of the Public Utilities Act.
8. The Lieutenant Governor in Council may pay to the officials and servants appointed under the Public Utilities Act such amounts, not exceeding as to any official servant three months salary or wages, as may be deemed proper in consideration of the termination of their employment, which is hereby terminated.

The legislature has voted $24,360 for the expenses of the commission in winding up its affairs. When this vote was before the house, April 8, the Attorney-General stated that there were certain matters which the Commissioner had to clear up and it was estimated that this would take at least three months.

The Public Utilities Act was assented to Mar. 29, 1919, and shortly thereafter Major Retallack was appointed Commissioner. Practically the first work he took up was the question of increased fares on the B. C. Electric Ry. in Vancouver, which had been the subject of considerable controversy for some months prior to the passing of the act, and which formed the subject of special provissions in sub sec. 4, sec. 11, which provided that the excess of 1c being collected in Vancouver by the B. C. E. Ry. was after April 9, be paid into a special trust fund and retained there until the Commissioner fixed the fare to be charged, after full investigation. After the Commissioner had started the investigation, legislation was passed at Ottawa which placed the whole of the B. C. E. Ry. lines under the Board of Railway Commissioners for Canada, and that board sanctioned the company's fare schedules on the higher rate. The trust fund at the time this took place was approximately $50,000, and the bill passed by the legislature will divide this equally between the city hospital and the company.

A Vancouver correspondent wrote us April 17 as follows:—The bill repealing the Public Utilities Act of 1919 has been passed by the Legislature, and only requires the signature of the Lieutenant Governor to become law. One of the reasons for the repealing of the act was that the railway lines of the British Columbia Electric Ry. Co. were, by an act of the Dominion Parliament, taken from the control of the province, and placed under the Dominion Board of Railway Commissioners. Then the Telephone Company of British Columbia was placed under Dominion control, which left, in the opinion of the British Columbia government, very little scope for the provincial commission.

The B.C. Legislature has provided in its repealing of the Public Utilities Act for the revival of all agreements binding the B.C. Electric Ry. Co., as if the act had never been passed. Just what effect this will have upon the 6c fare charged in Vancouver, New Westminster and other communities, is somewhat doubtful. The company's franchise provides for a 5c fare. The 6c fare was granted until Apr. 9, 1919, and consequently the British Columbia government, by the Public Utilities Act, extended this privilege until the Public Utilities Commission could investigate the necessity for such a fare. The B.C.E.R. Co. was removed from provincial jurisdiction, its fares were confirmed by the Dominion Board of Railway Commissioners, and it is under this confirmation that the present fares are being charged. If the Dominion Government should cancel its jurisdiction over the company, this would throw it back on original agreements, and it would then be without recourse to either Dominion or B.C. commissions.

Another curious feature of the B.C. repealing act, is a clause which might be said to confiscate one-half of some $48,000 held in trust by the B.C.E.R. Co. It was provided in the Public Utilities Act that the 6c fare be continued after April, 1919, and that the additional cent, over the 5c statutory fare, should be paid into a fund, until such time as the provincial commission could investigate the merits of the 6c fare. If it should have been decided that the company was not entitled to this additional cent, the fund was to go to the Vancouver General Hospital. The contributions to the fund up to July 7, 1919 were about $48,000, when they stopped, owing to the company coming under Dominion Government jurisdiction and having its fares approved. The repeal act contains a clause to the effect that this fund shall be divided equally between the B.C.E.R. Co. and the Vancouver General Hospital, without providing for any investigation. Whether this is a confiscation or not, it is hard to say, but it is quite probable that the cost of giving service from April to July 7, 1919, warranted much more than a 6c fare, in which case the company would be entitled to the whole of the fund.

## Responsibility for Fire Damage by Electric Wires.

The Imperial Privy Council gave judgment recently on the Quebec Ry., Light & Power Co.'s appeal against a decision of the Supreme Court of Canada in an action brought against the company by G. A. Vaudry et al to recover damages for fires caused by the company's wires. The five actions were consolidated for the purposes of the appeal, the principal object of which was to settle the true construction of article 1054 of the Civil Code of Lower Canada.

The company generates and distributes electricity in Quebec City. The respondents' houses are on the St. Foye Road, along which the company erected a pole line carrying a primary cable charged with electricity at 2,200 volts and a secondary cable from which electricity was supplied to the houses at 108 volts. During a winter storm a branch from a tree broke the primary cable and the high tension electricity found its way along the secondary cable into the houses, setting them on fire. For the damage caused the owners brought their actions, and obtained a favorable verdict in the first court, which was reversed by the Court of Appeal, and restored by a majority of one by the Supreme Court.

In the Privy Council judgment Lord Sumner held that two questions of law arose upon the case (1) whether the plaintiffs can succeed without proving negligence or fault against the company, and (2) whether even so the defendants would succeed if they proved that they could have prevented the fire. After discussing the law fully and its relation to the facts, their Lordships decided that the appeal should be dismissed with costs.

**New Brunswick Electrical Development.**—The N.B. Legislature is being asked to appropriate $1,000,000 to develop water powers in the province and provide for the distribution of electrical energy. It is proposed to do this work in three districts, viz., St. John and vicinity; Fredericton and the upper St. John Valley and the North Shore, through a provincial commission.

# Electric Railway Employes' Wages, Working Conditions, Etc.

The British Columbia Electric Ry. has granted its conductors and motormen an increase of wages of 4c an hour from Apl. 1, as follows:—

| | City lines. | Interurban lines. |
|---|---|---|
| First 6 months | 49c | 49c |
| Second 6 months | 54c | 55c |
| Third 6 months | 57c | 59c |
| Thereafter | 60c | 62c |

Pro rata increases have been made in all other lines represented in the Amalgamated Association of City and Electric Railway Employes. The new wage scale was the result of negotiations between the company and the men, in which the company's offer was accepted. The existing agreement was not opened up, but a supplementary agreement was entered into.

The Dominion Power & Transmission Co., Hamilton, Ont., has made a new agreement with the conductors and linemen on its interurban lines only until April 1, 1921. The following table shows the rates paid heretofore, the rates asked by the men and the rates agreed on per hour:—

| | Old. | Asked. | New. |
|---|---|---|---|
| 1st 6 months | 30c | 52c | 35c |
| 2nd 6 months | 35c | 55c | 40c |
| 2nd year | 39c | 58c | 45c |
| 3rd year | 45c | 60c | 52c |

Time and a half for overtime. Ten hours constitute a days work, to be completed in 11 consecutive hours. Nothing extra for Sundays or holidays. Uniforms supplied free to all trainman after two years service, company pays half cost of uniforms for first and second year men.

A Hamilton press report of April 27 says a board of conciliation has been appointed to investigate a wage dispute between the Hamilton St. Ry. and its employes. G. C. Kerr, K.C., represents the company, and F. Bancroft the men.

Edmonton Radial Ry.—A new wage schedule is reported to have been agreed on between the Edmonton, Alta., City Commissioners and the Street Railway Men's Union, for Edmonton Radial Ry. employes. Following are the rate reported for conductors and motormen per hour:—

| | One man cars. | Two man cars. |
|---|---|---|
| 1st 6 months | 57½c | 52½c |
| 2nd 6 months | 62½c | 57½c |
| 3rd 6 months | 67½c | 62½ |
| 4th 6 months | 72½ | ..... |

A 9 hour day is to be worked, time and a half will be paid after 9¼ hours have been worked, and time and a half will be paid for all statutory holidays.

London & Port Stanley Ry.—A board of conciliation has been authorized by the Minister of Labor to deal with the differences as to wages between the London & Port Stanley Ry. and its employes. B. W. Bennett, Sarnia, Ont., is the railway's representative, and J. W. Campbell, Kingston, Ont., is the men's representative. It was stated, April 22, that the chairman would be appointed a few days thereafter. The men ask a maximum rate of 65c an hour, and were offered 52c an hour.

London St. Ry.—Londion, Ont., press dispatch April 25.—At a mass meeting of London St. Ry. employes last night it was unanimously voted to strike on May 1 unless the company shall have by that time met their demand for an increase in wages of from 44 to 65c an hour. The company having repeated its declaration that on the present rate of fares it is unable to grant the increase, the men voted against asking for a conciliation board, as it was declared that, under the circumstances, the board could do nothing to avoid the strike. If the city council does not intervene and raise the fares, the strike appears an absolute certainty. No negotiations have taken place with the company.

Montreal Tramways Co.'s employes are negotiating for increased wages, and improved working conditions. The scale asked by conductors and motormen as compared with the present scale is as follows per hour:—

| | Present. | Asked. |
|---|---|---|
| First year | 37c | ..... |
| First 3 months | ..... | 70c |
| Next 9 months | ..... | 73c |
| Second year | 40c | 75c |
| Third year | 44c | ..... |
| After third year | 48c | ..... |

The demands of the men, it is reported, would involve, if granted, an addition of about $3,000,000 a year to the pay roll.

Nova Scotia Tramways & Power Co. A press report states that an agreement has been arrived at between the company and its outside employes, under which an advance of wages has been given, the minimum rate for conductors and motormen being 52c an hour. The report adds that the increase is contingent upon the passing of an act by the Nova Scotia Legislature allowing the company to increase fares on its electric lines.

Ottawa Electric Ry.—Negotiations are reported to have been in progress for some time respecting a new wage agreement between the Ottawa Electric Ry. Co. and its employes. The men are said to be asking for a maximum rate of 65c an hour, the existing rate being 45c.

Quebec Ry., Light & Power Co.—A new schedule of wages on an increased scale is reported to have been arranged between the company and its Montmorency Division employes.

St. Thomas, Ont., Municipal Ry. conductors and motormen have been granted an all round increase of 5c an hour, making the wages as follows per hour:—1st month 43c, after 1st month 45c. Working hours 10.

Toronto Civic Ry.—Employes of the Toronto Civic Ry. are reported to have accepted April 12 the new wage scale offered by the city council, which gives rates running from 60c to 65c an hour.

Toronto Ry.—The question of increased wages for employes is expected to be discussed, and a new schedule drawn up, at a meeting of the employes union on May 1.

Winnipeg Electric Ry.—A new schedule is reported to have been presented to the management by the men on April 1, in which increases ranging from 25c to 35c an hour are asked. A. W. McLimont, Vice President and General Manager, is reported to have replied to the local union, which is not now affiliated with the international one, that the demands were so extreme that is was impossible for the company even to consider them as a basis of negotiation.

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The Quebec Ry., Light & Power Co. is reported to have received 4 new cars for its city lines. Two have been placed on the Champlain line, two on the Palace Hill line, and one on the Crown St. line. They are reported to have cost $18,200 each, against $7,500 each for cars of the same type in 1914.

## Electric Railway Situation in Detroit.

The street railway situation in Detroit, Mich., entered upon another phase April 6, when ratepayers voted on the Couzens plan under which the city will go extensively into street railway business. Of approximately 300,000 persons in the city entitled to vote, it is reported that only about 140,000 voted, and that 89,134, or 63.564% of these voted in favor of the proposal. The affirmative vote was therefore less than one-third of the possible vote. The proposal endorsed by the ratepayers provides for the issue of $15,000,000 of bonds to finance and equip 101 miles of new tracks, and take over 55 miles of line now operated by the Detroit United Rys. The lines to be built and taken over are reported to include two into the heart of the city—one on Fort St. and one on Woodward Ave.—with north, south and cross town tracks.

We are advised that the plan, as it appeared in full on the ballot, cannot be read by itself to obtain the real intention or the operation requirements. While not so officially stated, the announcement was made repeatedly during the campaign,—and that is the intention—to take over parts of the Woodward and Fort lines on which franchises are claimed to have expired; also some of the other lines operated on a day to day basis; and the construction of additional lines. The estimate of cost made by the mayor of the price to be paid the company for the lines to be taken over is $40,000 a mile, greatly under their depreciated value.

Following the vote the city council granted authority for the immediate issue of $100,000 of public utility bonds, and work was reported to have been started April 7 on the Mack-Myrtle belt line. The franchises on the Ford and Woodward Ave. lines are reported to have expired, and it is stated that the present traffic arrangements will not be disturbed until the city is ready to provide cars and other equipment necessary to operate the lines.

Detroit's street railway situation has been under discussion since 1913, when the city was given authority to appoint a commission with power to acquire a railway. In 1915 a plan to purchase the Detroit United Ry.'s city properties at a price to be fixed by the Wayne County Circuit Judges was defeated, and in 1919 a plan to purchase the company's lines at a price agreed upon between the commission and the company was defeated on the ground that the price named was in excess of the value of the system. A service at cost plan was subsequently considered, but was not approved by Mayor Couzens. The present plan of building a city system, and the taking over of the lines operated by the D.U.R. on the day to day agreement, was then developed with the result stated above.

The Detroit United Ry. is reported to have stopped all construction work on its lines, and to have taken action to contest the constitutionality of the city ordinance. This, it is stated, will put a stop to any progress being made by the city untiy decision is given by the U.S. courts, which a press report says will probably be some three years hence.

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G. E. Waller, General Superintendent of Railways, Dominion Power & Transmission Co., is reported to have expressed the opinion that it would be imracticable for the company to operate cars in Hamilton.

# Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—In connection with the construction by the Ontario Government of the provincial highway between Hamilton and Brantford, Ont., a question has been raised as to the Brantford Municipal Ry's rights from Brantford to Cainsville. An extension of the line to Cainsville, it is stated, will have to be made very soon, and provision will have to be made for the laying of tracks when the pavement is being put down. The matter is under consideration by W. A. McLean, the Ontario Engineer of Highways. (April, pg. 202.)

**British Columbia Electric Ry.**—Work was reported to have been started Mar. 30 on removing the tracks, etc., on the center of King Edward Ave., Shaughnessy Heights, Vancouver, between Granville St. and the Inter Island Ry. tracks. The tracks were originally laid for use in connection with one of the company's lines, but other arrangements were made subsequently and a boulevard is to be laid out to replace the tracks. (April, pg. 202.)

A press report states that the company will shortly build a new station at Marpole, at an estimated cost of $10,000.

**Cape Breton Electric Co.**—A press report states that the company will not rebuild the car barn destroyed by fire recently, but will repair the old power station so as to provided accommodation for cars requiring to be stored overnight. (Dec., 1919, pg. 670.)

**The Hamilton Radial Ry.**—Is reported to have applied to the Burlington Beach Commission for permission to lay temporary switches from its line to the G. T. R. bridge over the canal for the operation of its cars between Hamilton and Oakville, Ont., during the construction of the highway bridge across the canal by the Dominion Government.

**London & Port Stanley Ry.**—The new station in St. Thomas, Ont., was opened April 23. Sir Adam Beck, Chairman London Railway Commission operating the railway, the mayor and other members of the London City Council, were present, and were subsequently entertained at luncheon by the St. Thomas Ciity Council.

**Moncton Tramways, Electricity & Gas Co.**—We are officially advised that the rebuilding of the car barn and machine shops at Moncton, N.B., destroyed by fire recently, is being held in abeyance pending certain decisions by the city council. (Mar., pg. 145.)

**Montreal Tramways Co.**—The Montreal City Council has been advised that the Tramways Commission is prepared to order the company to build a line on Kelly St. from Ahunstic, Bordeaux station, to Lamonthe St., as soon as the city opens the street, and the Montreal Administrative Commission has recommended that the money be voted to expropriate the property required.

A press report states a second track is to be laid on the line from Guy St. to Queen Mary Road, during this year, and that a second track will be laid on the Iberville line later. (April, pg. 202.)

**Oshawa Ry.**—We are officially advised that the company has ordered from Canadian Westinghouse Co. an additional 500 k.w. motor generator.

We are officially advised that the company proposes to rebuild the car barn and to replace the rolling stock destroyed by the fire, immediately. The total loss is put at $450,000, which is covered by insurance.

**Ottawa Electric Ry.**—The Hull, Que., City Council is reported to have instructed its solicitor to appear before the Board of Railway Commissioners and oppose the company's application for permission to lay a loop at the terminus of its line in Hull. (Mar., pg. 145.)

**Peterborough Radial Ry.**—We were officially advised April 13 that nothing had been definitely settled about any track extensions in the city, with the exception of lifting a piece of track and replacing it as soon as the city paves the street from the C.P.R. south to Romaine St.

**Quebec Ry., Light & Power Co.**—We are officially advised that negotiations are still pending in connection with the proposal to extend the electric railway from Quebec to Loretteville, Que., but that no decision has been reached as to whether the line will be built this year. (April, pg., 202.)

**Winnipeg Electric Ry.**—As the result of an explosion the company's Main St. car barns were destroyed by fire April 7, the loss being estimated at $400,000, distributed as follows:—Buildings, $50,000; 20 cars, $300,000; 4 sweepers, $32,000. A number of other cars were damaged, and are undergoing repairs. (Jan., pg. 34.)

## The Rule of the Road in British Columbia.

In the British Columbia Legislature on April 8 a bill to amend the Highways Act by changing the rule of the road in the province, to bring it into accord with that followed generally throughout the rest of Canada, was read a second time. The Minister of Public Works is reported to have stated that there is grave danger to the public in the retention of the "turn to the left" rule of the road, and with tens and even hundreds of thousands of motors arriving and leaving the province it is only a matter of time until the change would have to be made. The change is to become operative generally throughout the province July 15, but out of consideration for the street railways it has been decided to make the time of the change Dec. 31, 1921. This will mean that a small corner of the province would retain the present rule for a year and nine months; that is to say, that part of the Lower Mainland and Vancouver Island cut off by natural barriers from the interior and northern sections.

The B. C. Electric Ry., which operates all the electric railways in the district, had submitted a report showing that the changing of its rolling stock and tracks to comply with the new rule will cost over $1,000,000. This had not been checked by the Department, but would be as soon as possible. The Minister proceeded to show that the change would cost more the longer it was left, chiefly because the company would be obliged in the near future to purchase new rolling stock. In the course of the discussion it was suggested that the province should bear part of the cost of the changes to be forced on the B.C.E. Ry. by the bill.

## Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.

| | Feb. 1920 | Feb. 1919 | 8 months to Feb. 29, 1920 | 8 months to Feb. 28, 1919 |
|---|---|---|---|---|
| Gross | $746,030 | $645,415 | $5,796,655 | $4,740,999 |
| Expenses | 493,222 | 431,163 | 4,082,656 | 3,532,729 |
| Net | $252,808 | $214,252 | $1,713,999 | $1,208,270 |

Cape Breton Electric Co.

| | Feb. 1920 | Feb. 1919 | 2 months to Feb. 29, 1920 | 2 months to Feb. 28, 1919 |
|---|---|---|---|---|
| Gross | $45,113.83 | $42,963.90 | $94,195.81 | $95,154.14 |
| Expenses | 39,414.08 | 33,900.00 | 83,559.47 | 70,857.50 |
| Net | $5,699.75 | $9,063.90 | $10,636.34 | $24,296.64 |

Toronto Civic Ry.

| | Feb. 1920 | Feb. 1919 | 2 months to Feb. 29, 1920 | 2 months to Feb. 28, 1919 |
|---|---|---|---|---|
| Passenger revenue | $39,331.21 | $30,372.50 | $81,320.65 | $62,604.62 |
| Passengers carried | 2,334,286 | 1,818,434 | 4,827,582 | 3,768,895 |

Toronto Ry., Toronto and York Radial Ry. and allied companies.

| | Feb. 1920 | Feb. 1919 | 2 months to Feb. 29, 1920 | 2 months to Feb. 28, 1919 |
|---|---|---|---|---|
| Gross | $1,113,717 | $1,015,797 | $2,244,203 | $2,122,637 |
| Expenses | 754,994 | 620,200 | 1,505,472 | 1,255,493 |
| Net | $359,723 | $ 395,597 | $ 738,731 | $ 867,144 |

Winnipeg Electric Ry. and allied companies.

| | Feb. 1920 | Feb. 1919 | 2 months to Feb. 29, 1920 | 2 months to Feb. 28, 1919 |
|---|---|---|---|---|
| Gross | $44,873 | $371,162 | $943,710 | $761,701 |
| Expenses | 328,205 | 263,908 | 693,236 | 554,924 |
| Net | $116,668 | $107,254 | $250,474 | $206,777 |

The surplus after allowing for fixed charges for January was $63,547.84, and for February, $57,084.85.

**Stops in Ottawa.**—The Ottawa Electric Ry. is, we are officially advised, adopting a modified form of skip stops which will cut out about 25% of the present stops on its city lines. The city council has approved of the plan, which was put in operation April 5, and was reported April 15 to have resulted in a speeding up of the service. With regard to the matter of stopping cars on the near or far side of street intersections, we are advised that the Ottawa Motor Club requested the city Board of Control to adopt the near side stop. The company objected to this, and the city council decided not to make any change from the present far side stop. There are many reasons why the company obare due to the climatic peculiarities, but the chief objection is that it slows up the car service, making it necessary to extend the time schcedules. This is because when a car stops on the near side all the cross traffic has the right of way over it for the time being. When a car stops on the far side it has the right of way in crossing the street, and after its business is finished at that crossing, it gets away immediately without inconviencing anyone. The near side stop system was in operation during 1913, 1914 and 1915.


## STOREKEEPER AND PURCHASING AGENT WANTED.

An Electric Railway operating a City and Interurban service requires a man to act as Storekeeper and Purchasing Agent. Must have experience in Stores Department. Applicants will please state experience and salary expected.

Address Box 666, Canadian Railway and Marine World.

# Mainly About Electric Railway People.

Jas. Anderson, heretofore Vice President and Purchasing Agent, and S. S. Anderson, heretofore General Manager, Sandwich, Windsor and Amherstburg Ry., have retired from that company's service, on it being taken over by the Hydro Electric Power Commission of Ontario. They are at present winding up matters connected with the old management for the Detroit United Ry.

H. Brooker, formerly dispatcher, Niagara & St. Catharines Ry., has been appointed Assistant Superintendent, Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, heretofore Sandwich, Windsor and Amherstburg Ry., Windsor, Ont.

Geo. Earl has been appointed Chief Electrician, Nipissing Central Ry.

F. E. Hayes, heretofore General Superintendent, Sandwich, Windsor & Amherstburg Ry., has retired from that company's service, on it having been taken over by the Hydro Electric Power Commission of Ontario, and has removed from Windsor, Ont., to Detroit, Mich.

Edward Jennings, heretofore Superintendent Overhead Construction, Sandwich, Windsor & Amherstburg Ry., is continued in the same position by the Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, Windsor, Ont., which has taken over the S.W. & A.R.

Jno. Lynch, heretofore Track Superintendent, Sandwich, Windsor & Amherstburg Ry., is continued in the same position by the Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, Windsor, Ont., which has taken over the S.W. & A.R.

W. H. MacAloney, who resigned his position as Superintendent of Rolling Stock, Winnipeg Electric Ry., recently, to return to Denver, Col., was entertained at dinner before leaving Winnipeg, by some 30 of the company's department heads, F. L. Butler, General Superintendent, presiding. R. R. Knox, Assistant to the General Manager, presented Mr. MacAloney with a handsome wrist watch from his friends, and his health was proposed by R. D. Guy, Solicitor.

Neil Maitland, heretofore Chief Power Engineer, Sandwich, Windsor & Amherstburg Ry., has been transferred to the Hydro Power Department at Windsor, Ont., on the railway being taken over by the Hydro Electric Power Commission of Ontario.

Harry R. Mallison, whose appointment as Purchasing Agent and Secretary to President, Montreal Tramways Co., was announced in our last issue, was born at Toronto, Nov. 14, 1873, and has been from Feb., 1893, to Mar., 1903, in various positions, finally as Comptroller, Montreal Street Ry., Montreal; Mar., 1903, to Apr., 1907, Comptroller, Mexican Light & Power Co., Mexico City, and Necaxa, Puebla; May, 1907, to Apr., 1914, Secretary-Treasurer, Canadian Light & Power Co., Montreal, Public Service Corporation, Imperial Trust Co., Montreal; Apr., 1914, to Dec., 1916, Assistant Secretary, Halifax Electric Tramways Co., Halifax, N.S.; Jan., 1917, to Dec., 1919, Managing Director and SecretaryTreasurer, Nova Scotia Tramways & Power Co., Halifax, N.S.

Walter L. McFarlane has been appointed Manager, Cornwall Street Railway, Light and Power Co., Cornwall, Ont., succeeding C. U. Peeling, who resigned to enter the service of the Illinois Traction Co. at Peoria, Ill., in which the Sun Life Assurance Co. of Canada is largely interested, as it also is in the Cornwall Street Ry., Light and Power Co., and the Levis County Ry. Mr. McFarlane was born at Montreal, Dec. 1, 1871, and from 1888 to 1903 occupied various positions with Montreal Light, Heat & Power Co., ranging from wireman to Superintendent of stations, including the equipping of electric railway cars for the Montreal Street Ry. in the early days of street railway electrification; 1903 to 2916, Manager, St. Lawrence Power Co., Cornwall, Ont.; and from 1916 to 1920 in military service overseas, and in the Militia Department's Cornwall and Kingston, Ont., offices.

A. F. McGill, formerly Assistant Superintendent, Niagara, St. Catharines and Toronto Ry., has been appointed Superintendent, Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, heretofore Sandwich, Windsor and Amherstburg Ry., Windsor, Ont.

A. Montgomery has been appointed acting Superintendent of Transportation, Nipissing Central Ry., K. McDonald, Superintendent, having resigned.

Alexander Montgomery, whose appointment as acting Superintendent, Nipissing Central Ry., North Cobalt, Ont., was announced in our last issue, was born in Ontario, Mar. 12, 1867, and from Apr. 30, 1910, to Mar. 10, 1920, was conductor, N.C.R. at North Cobalt, Ont.

W. H. Moore, K.C., Chairman of the Public Utilities Commission, Peterborough, Ont., died there, April 23, aged. 77.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., left Vancouver, April 4, for a trip to England, accompanied by Mrs. Murrin.

A. N. Pay, formerly Master Mechanic, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., has been appointed Master Mechanic, Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, heretofore Sandwich, Windsor and Amherstburg Ry., Windsor, Ont.

J. S. Richards, Manager, London & Port Stanley Ry., London, Ont., who underwent an operation recently, is reported to be recovering.

C. Stokes has been appointed Accountant, Hydro Electric Power Commission of Ontario Electric Ry., Essex Division, heretofore Sandwich, Windsor and Amherstburg Ry., Windsor, Ont.

J. E. Watkins, heretofore with the British Columbia Electric Ry., has been appointed Superintendent of rolling stock, Winnipeg Electric Ry., vice W. H. MacAloney, who has resigned and returned to Denver, Col.

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The British Columbia Electric Ry. gave notice recently that, beginning April 1, the rule against smoking on Vancouver city cars would be enforced strictly, in compliance with repeated requests from passengers, and a resolution passed by the city council.

The cost of removing snow from Montreal streets on which there are electric railway tracks during the past winter is reported to have been $132,115.05 for the city's share; $132,115.06 for the Montreal Tramways Co., and $2,683.40 for the Montreal and Southern Counties Ry.

## Sandwich, Windsor and Amherstburg Railway Transfer.

The Sandwich, Windsor and Amherstburg Railway, which operated under lease the Windsor and Tecumseh Electric Railway, both being owned by the Detroit United Railway, was transferred to the Hydro-Electric Power Commission of Ontario at midnight, March 31, and is now being operated as the Hydro-Electric Railway, Essex Division. The lines aggregate 41.342 miles and connect Tecumseh, Ford, Walkerville, Windsor, Sandwich, Ojibway and Amherstburg. The transfer is the culmination of an agitation started by the people of the border districts early in 1918, for better service and improved lines. The wage and fare questions also became acute, and a seizure of the lines by the Ontario Railway and Municipal Board resulted before a settlement of wages was effected. An appeal to the Hydro-Electric Power Commission of Ontario followed, with the result that an agreement for the sale of the properties was reached, which was approved by the electors Dec. 6, 1919. The Commission being authorized to issue bonds for 40 years guaranteed by the municipalities served.

The lines are being operated under W. N. Robertson, General Superintendent of the Hydro-Electric Power Commission's railway division. The principal officials of the S. W. & A. Ry. have left the service and new officials have been appointed, particulars of the appointments being given under "Mainly About Electric Railway People," on this page.

## Increase of Winnipeg Electric Railway Co.'s Capital.

Winnipeg Electric Ry. shareholders will be asked at a meeting on May 3, to authorize the issue of $3,000,000 of 7% cumulative preference stock. A circular issued by the company says in part:—"The reason for the issue of this stock is that the company desires to clear up its floating indebtedness, amounting to approximately $3,000,000, and not materially increase its interest charges. This indebtedness would not have occurred had it not been for the war. Prior to 1914 the company had entered on a constructive programme, caused by the growth of the City of Winnipeg, and had financed up to that time by the sale of debenture stock which had been authorized to complete this programme, but the war rendered it impossible to sell any further securities in London, and the debenture stock having been created in a form to meet the requirements of the London market was not acceptable on this side. The construction programme had to be proceeded with, and was financed partly by the sale of short term securities, and partly by borrowing from the banks."

It is added that the company is rapidly improving its position as regards earnings. The new preferred stock is offered to shareholders at par, with a bonus of 20% of common stock, or one share of common for every five shares of preferred stock subscribed for. The company's outstanding common stock is $9,000,000, in additional to which there is $4,380,000 debenture stock and $5,750,000 bonds. No dividends have been paid on the common stock since Oct., 1915.

# Electric Railway Notes.

The Peterborough, Ont., Radial Ry. will, a press report states, put one-man cars on all its lines.

The Quebec Railway Light and Power Co. has received 5 cars from Ottawa Car Manufacturing Co.

The Hydro-Electric Power Commission of Ontario has ordered 3 bodies for 50-ton electric locomotives, from Canadian Car and Foundry Co.

The Windsor, Essex & Lake Shore Rapid Ry. has bought a steam shovel from F. H. Hopkins & Co., Montreal, for its gravel pit.

The Lake Erie and Northern Ry. is adding 3 steel passenger cars, 60 ft. lon; 1 trailer passenger car, and 1 electrict locomotive, 60 tons capacity, to its rolling stock.

The Grand River Ry. is adding 4 steel passenger cars, 60 ft. long; 2 trailer passenger cars, 1 baggage and express car and 1 electric locomotive, 60 tons capacity, to its rolling stock.

The Cape Breton Electric Co. has, it is reported, sufficient cars on hand to handle its traffic, notwithstanding the fact that two were destroyed in a recent fire at the car barns. The company may be in the market for additional cars later in the year.

The Nova Scotia Tramways & Power Co. has received 14 of its new one man p.a.y.e. cars, and has established a 4 minute service on the belt line in Halifax. It is stated that when additional cars are delivered the service will be approximately a 2½ minute one on this line during the rush hours.

The London, Ont., City Council, is reported to have under consideration the assessment of the London St. Ry. for city taxes. The company's statement for 1918 shows the value of road and equipment to Jan. 1, 1919, to be $1,493,-254. Allowing $134,208 for depreciation, the value is placed at $1,359,046. It was assessed for 1919 at $156,275.

The Montreal Tramways Commission's new schedule of stops worked out for use on the Montreal Tramways Co.'s lines, is expected to beput in operation May 1. The Westmount City Council was asked to approve of the schedule so far as it affected the lines within that city, but was reported, April 14, to have suggested that the present stops within the city be continued.

The Premier of New Brunswick is reported to have informed the legislature, April 15, that the government had not yet made an appointment to the position of Chairman of the Public Utilities Commission in place of G. Otty, K.C., whose term has expired. Mr. Otty was appointed a Commissioner in 1910, and succeeded D. McL. Vince, K.C., as Chairman in 1912.

The New Brunswick Public Utilities Commission has decided that the New Brunswick Power Co. must restore the street railway service as regards bridge cars from Union St. to the end of the line at the foot of Rodney wharf, St. John. The company applied for permission to discontinue this service, and the St. John City Council asked that the company be compelled to operate its cars on Rodney wharf.

The British Columbia Electric Ry. has arranged for insuring all its male employes over 18 years old, and who have been a year or more in the service, for $1,000 each. Provision is made for the payment of the total amount insured by annual instalments should the employe become wholly and permanently disabled through accident or disease. It has also been arranged that any employe leaving the company's service may continue the insurance by paying his own premiums at the existing rates.

The Imperial Privy Council confirmed recently a decision of the Quebec Court of Appeal granting P. McAllister $2,400 damages against the Montreal Tramways Co. for injuries to his son. The boy got off a west bound car opposite Westmount athletic grounds, and while crossing the tracks was struck by an eastbound car and sustained serious injuries. The jury found that both parties were at fault, the boy for rashness in attempting to cross the track, and the motorman on the eastbound car for not having it under control, and a verdict was given for reduced damages of $2,400. This was confirmed by the Court of Appeal, and is now finally approved.

The Niagara, St. Catharines and Toronto Ry. is having 12 of its cars remodelled by Ottawa Car Manufacturing Co., to make them into double end one-man or two-man operated cars, to suit the prevailing conditions on the railway. The cars, at present, have omnibus sides, which will be made straight with steel panels, and the bulkhead at each end removed. Vestibules will be rebuilt throughout, extending them 18 in. beyond the present length, making a total length of 6½ ft. over bunter. The doors will be made double, of two leaves each, worked automatically, by National Pneumatic Co.'s automatic door and step control. Keystone signs will be placed at the right hand corner window of vestibules, and a railing of 1¼ iron pipe will be placed there from center of doors, taking a curve to the stanchions dividing bulkhead into entrance and exit, and another railing will enclose the conductor who will stand at the same end as the motorman, at the first corner window to body, when car is operated by two men. Sanitary hand straps will be placed in the cars at the longitudinal seats. The bolster will have ball center bearing and side roller bearings, and a buzzer system will be installed in each car. The cars will be pointed the N., St. C. & T. R. standard gray color, and when completed will have the following dimensions:—length of body 28 ft., length of vestibule 6½ ft., length over bunter 41 ft., seating capacity 36.

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Cars for Toronto Civic Ry.—The Toronto City Board of Control has under consideration tenders for the supply and delivery of 13 double truck, double end cars, specifications and details of which were given in a previous issue. Three tenders were received, no. 1 being for $30,437 each, f.o.b., Montreal; no. 2 $24,-142 each, f.o.b., Toronto, subject to exchange, with an alternative proposition at $12,555 each, plus $10,973.10 each, f.o.b., Toronto, subject to exchange; No. 3, $27,420 each, f.o.b., Toronto. It is stated that the Board of Control, owing to questions of exchange, etc., and the apparent lack of competition amongst Canadian car builders on account of heavy booking of orders, may consider the possibility of obtaining tenders from English car building companies.

## Edmonton Radial Railway's Condition.

An Edmonton, Alta., paper says of the Edmonton Radial Ry., which is owned by the city: "In regard to the street railway a somewhat curious atttitude seems to be growing up at the city hall, it being somewhat to the effect that the street railway has reached a state of senility or to put it in other words, that the street railway is a doubtful utility to handle for the reason that in a very short time it may be out of date altogether. At one time there used to be a considerable amount of talk to the point that as soon as the population came back to the city, and it began to grow again, the street railway would eventually become one of the best paying utilities. Not much of this sort of opinion has been heard of late. It is understood and generally admitted that tracks and rolling stock are in bad condition, and a large expenditure would be necessary to restore any degree of permanence. There seems to be a great reluctance to contemplate expenditure of this kind, or any more than needed to keep the street railway on its feet, or as it might be said, to maintain the cars on the rails."

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## Grand River and Lake Erie and Northern Railway Betterments, Etc.

We are officially advised that the total amount appropriated for betterments, etc., this year on the Grand River Ry. and the Lake Erie & Northern Ry., both of which are C.P.R. subsidaries, is $1,453,700, of which $1,035,200 is for the Grand River Ry. and $418,500 for the Lake Erie & Northern Ry. The amounts include renewals of appropriations granted in 1919, as well as for the purchase of generating and equipment, construction of substation to provide uniform 1,500 volt operation, by rebuilding and reinsulating existing overhead system, additional shop equipment, tie and rail renewals, etc.

Some of the work, including buildings, sidings, etc., will be done by the companies' own forces. Contract have been given to A. E. Rigley, St. Catharines, Ont., for the following:—Kitchener-Waterloo line revision, second track work between Preston and Hageys; revision of line in Galt; terminals in Galt; and other smaller works. These contracts have been let on the cost plus basis. Details in regard to some of them have already been given in Canadian Railway and Marine World. With regard to the Kitchener-Waterloo revision, we are advised that owing to the expiration of franchise rights in the City of Kitchener, it is necessary to provide service on a private right of way, on a greatly improved location. The new second track between Preston and Hageys, 0.50 mile, will be laid with 85-lb. rails.

The station and office buildings at Galt will probably be of brick and concrete construction, 40 x 120 ft.; the station on the ground floor and general offices above. The substation at Preston will be 56 x 48 ft. A 60 ft. extension to car barn and repair shop at Preston will be done by the company's own forces.

The equipment to be bought will consist of two 1,000 k.w. motor generator sets; six transformers; short-circuiting switches, lightening arresters, etc. The

rolling stock to be bought will be as follows:—Grand River Ry., one 60-ton electric locomotive, four 60-ft. steel passenger cars, two trailer passenger cars, one baggage and express car. Lake Erie & Northern Ry., three 60-ft. steel passenger cars, two trailer passenger cars, one baggage and express car.

## The Port Arthur Civic Railway's History and Present Position.

The history of the inception and development of the Port Arthur Civic Ry. was debated before the Port Arthur, Ont., Rotarian Club recently by M. M. Inglis, Manager of the city's public utilities commission. After having dealt with matters affecting public utilities in general, he gave the following information regarding the Port Arthur Civic Ry. The railway was inaugurated in 1891, it being not only one of the oldest electric railways in Canada, but the first municipally owned line. An issue of $75,000 of 5%, 20-year bonds was made in that year to finance the project. At present the line is capitalized at $795,633.02. The original line was laid in Port Arthur, and subsequently an extension was made, under Port Arthur ownership, to Fort William, and the operation of the line in the two cities was continued under Port Arthur's management until 1908, when an agreement was made under which Fort William bought the lines within its own boundaries, and the lines were placed under the management of a joint board. This continued until 1913, when the management of the Port Arthur line was taken over by the city council, and in 1915 the management was handed over to the then newly formed Public Utilities Commission. The line was financed by debentures, of two types —sinking fund debentures, and serial debentures, the total amount issued from 1891 to date being $940,184.

Mr. Inglis continued:—"The assets comprise chiefly 20 miles of track computed as single track; car barns and shed; 22 convertible cars, of which 5 are single truck, and the remainder double truck; 2 trailers; 2 combination work cars and snow plows and sweepers; one baggage car; one open trailer; and power plant machinery of the capacity of 2,000 h.p., as well as overhead construction, feeders, tools and equipment for the operation of the system. Compared with other systems, every attention has been paid to providing the best and most comfortable equipment that could be obtained. Each double truck car similar to those used on the main line service is equipped with four 40 h.p. motors, geared to the car axles and capable of maintaining a car speed of 25 miles an hour should it be found necessary in operation."

Mr. Inglis then pointed out that the electric railway might be regarded as an industry, on consideration being given to the capital invested; the revenue derived; the number of employes and the wages paid, and to the material bought. The revenue for 1919 was $196,000; the amount paid in wages in 1919 $88,000 approximately. The amount paid for materials in 1919, including insurance and other such items was approximately $19,000. Power cost for the year was approximately $20,000.

He continued: "Pressing needs to make ends meet has also awakened us to the fact that our street railway is a commercial enterprise, and that its function is not merely to run cars, but to sell service, and that like any other manufacturing concern. While not the foremost industry in the city, from point of view of the wages paid and other items mentioned, it, in addition to these influential elements, fills a place in our social life and development that cannot be measured in a pecuniary way, and would be difficult, if not almost impossible, to supplant."

Considering the future of the system, Mr. Inglis said: "We know now, if we did not do so before, that service is being sold at less than cost. In this we cannot altogether blame the representatives whom we elected to office, because they were merely responding to the will of the ratepayers in general. With what has been happening during these past five years or more, and the trend of current events, it is not surprising that we have not re-established our equilibrium, but progress of a material kind has been made in connection with the street railway system that reflects at least some credit. Credit is due particularly to the commissioners for the policy they have inaugurated since coming into office, and in no less degree to the co-operation of all departments and employes connected with the system.

"Briefly, the commission's policy is as follows: To render service at cost, and in so doing to provide for interest charges on all capital expended. Sinking fund, to retire all debentures at maturity, and, in addition, depreciation to replace all plant and other assets at the end of their useful life. It has so far been inconvenient to carry out the entire policy as above quoted, but the goal has been set, and it is not beyond attainment, and that without great hardship if the citizens will realize their full responsibility and assist. Just as the merchant or manufacturer sells his product and bases his cost on the unit system, so it is with the street railway. Our basis is that of the car mile, or the car hour, depending upon which is the more convenient, and in order to eliminate as far as possible the many variables that enter into the matter of costs."

Mr. Inglis claimed that the operating cost of the system compares very favorably with that of any other system in Canada. This is primarily due to the fact that the Port Arthur system lends itself to fast service when compared with other city systems. Port Arthur and Fort William have one of the fastest street railways in the Dominion; the main line cars make on an average 11¼ miles an hour. This is a desirable feature to retain, if it cannot be improved upon. After touching on the question of the cost of frequent stops, the cost of labor, the proposal to combine the ownership of the two lines in connection with the Hydro Electric Power Commission of Ontario's railway plans; one-man cars, and zone system of fares, which he did not discuss in detail, Mr. Inglis concluded by saying: "To my mind three very essential things are necessary and should precede any of the aforementioned suggestions in order that the transportation system of these two cities can develop and keep pace with the future growth which we all anticipate. These essentials are: 1. Joint ownership. 2. Relief for the car rider from paying for those extensions which are inoperative as well as relief from paving charges assessed against the street railway department. 3. The co-operation of every individual citizen in promoting the interests of the department and in this connection I could not do better than quote the Rotary Club's motto: 'He profits most who serves best.' "

## Valuation of New Brunswick Power Co.'s Plant.

A judgment of the New Brunswick Court of Appeal, prepared by Sir Douglas Hazen, Chief Justice, in the New Brunswick Power Co. plant valuation case, was delivered at Fredericton, Mar. 1. The Currier Commission appointed in 1918, fixed the original cost of the plant used for street railway and other purposes, on which a return of 7% was to be earned, at $2,800,000, and this sum was inserted in the act passed by the Legislature in 1919. As the city of St. John, contended that the value should be fixed at $2,000,000, while the company contended for $5,000,000, provision was made for a review of the valuation by the Court of Appeal. The arguments were concluded in January and the court took advantage of the power given it to employ expert assistance before reaching a decision as to the value. The judgment is a very lengthy one, reviewing the whole matter, and fixes the original cost of the plant at $2,577,665.56. This amount, the judgment says, does not take into account any allowance for depreciation nor include any amount representing the proposed water power development on the Lapreaux and Magaguadavic Rivers, or any amount representing working capital, including materials and supplies. The amount of which should not be in excess of the company's financial needs in carrying on the railway, electric and gas services.

## Calgary Municipal Ry. Results for 1919.

A press summary of the Calgary, Alta., City Treasurer's report for 1919 contains the following information as to the Calgary Municipal Ry.: The surplus for 1919 was $42,232.95, against a surplus of $74,656.87 for 1918. There was a total capital expenditure to Dec. 31, 1919, of $2,462,051.14 on track and roadway, equipment, etc. Holdings acquired otherwise than by the bylaw, such as Bowness Park improvements, land, sub base and other items add another $103,915.59 to the capital assets. Taking from this $788,413.13 for sinking fund, reserve and depreciation reserve gives a total of $1,777,553.99 to which is to be added the sinking fund bank account of $370,726.08, and depreciation bank account of $87,264.81, making the net capital assets $2,492,476.97. During 1919 $583,098.88 was expended for maintenance on ways and structures, equipment, transportation and general expenses, $6,541.41 was expended for taxes, rental of land and conduits, and for debenture interest there was laid aside $110,182.85, for sinking fund, $4,507.87, for depreciation, $31,652.44, for reserve against accidents and damages, $15,447, bad debts, $750, and surplus carried to net revenue accounts $42,232.95, making the total expenditure for the year $834,413.40. Against this were $772,349.98 in passenger earnings, $42,607.90 in miscellaneous earnings, and $19,455.52 in bank interest.

# Marine Department

## Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

**Orders for Steamships.**—In answer to questions asked in the House of Commons, Mar. 31, by L. Cannon, M.P. for Dorchester, Que., the Minister of Marine gave the following information: The government has contracted to build 63 steamships, of which 19 were delivered to Canadian Government Merchant Marine Ltd., for operation, during 1919. Those delivered were built as follows: Canadian Vickers, Ltd., Montreal, 7; Collingwood Shipbuilding Co., Collingwood, Ont., 4; Port Arthur Shipbuilding Co., Port Arthur, Ont., 4; Wallace Shipyards Ltd., North Vancouver, B.C., 3; Tidewater Shipbuilders, Ltd., Three Rivers, Que., 1. The following voyages were completed, and accounts closed, during 1919: Canadian Voyageur, 4 trips; Canadian Pioneer, 1 trip; Canadian Warrior, 3 trips; Canadian Ranger, 3 trips; Canadian Recruit, 3 trips; Canadian Volunteer, 2 trips; Canadian Leader, 3 trips; Canadian Sailor, 2 trips; Canadian Trooper, 1 trip; Canadian Seigneur, 2 trips; Canadian Signaller, 2 trips; Canadian Miller, 1 trip; Canadian Adventurer, 1 trip. The other 6 ships were delivered late in the year, and did not complete trips by Dec. 31, 1919. The total gross revenue from the 13 ships was $3,448,030.25. The total operating expenses were $2,041,262.87, giving a surplus of $1,406,767.38, for only a portion of the year, as most of the ships were delivered during the latter part of the year. It is not considered in the public interest to state the cost of maintenance of each ship.

Very full information about orders will be found in the Minister of Marine's speech in the House of Commons on the government's shipbuilding programme, which is given in full further on in this issue.

**Names of Steamships.**—The Minister of Marine, in answer to questions in the House of Commons recently, by L. Cannon, M.P. for Dorchester, Que., gave the names chosen for steel cargo steamships for Canadian Government Merchant Marine Ltd., as published in Canadian Railway and Marine World from time to time, and stated that the Marine Department was responsible for the choice of them.

The Marine Department has officially advised us of the following names, which have been decided on, for steel cargo steamships being built for Canadian Government Merchant Marine Ltd., in addition to those published in Canadian Railway and Marine World for April.

Canadian Challenger; Marine Department contract 60; builder's yard no. 476; approximately 8,390 d.w. tons; Davie Shipbuilding & Repairing Co., Lauzon, Que.

Canadian Coaster; Marine Department contract 58; builder's yard no. 16; approximately 3,890 d.w. tons, Collingwood Shipbuilding Co., Kingston, Ont.

Canadian Freighter; Marine Department contract 63; builder's yard no. 21; approximately 8,390 d.w. tons; J. Coughlan & Sons, Vancouver, B.C.

Canadian Highlander; Marine Department contract 55; builder's yard no. 103; approximately 8,390 d.w. tons; Wallace Shipyards, Ltd., North Vancouver, B.C.

Canadian Racer; Marine Department contract 54; builder's yard no. 10; approximately 3,990 d.w. tons; Midland Shipbuilding Co., Midland, Ont.

Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.

Canadian Skirmisher; Marine Department contract 56; builder's yard no. 7; approximately 8,390 d.w. tons; Wallace Shipyards, Ltd., North Vancouver, B.C.

Canadian Transporter; Marine Department contract 62; builder's yard no. 8; approximately 8,390 d.w. tons; J. Coughlan & Sons, Vancouver, B.C.

Canadian Pathfinder; Marine Department contract 48; builder's yard no. 10; approximately 3,500 d.w. tons; Dominion Shipbuilding Co., Toronto; instead of Canadian Artificer, as selected originally.

Canadian Winner; Marine Department contract 29; builders' yard no. 1; approximately 8,390 d.w. tons; Harbour Marine Co., Victoria, B.C.; instead of Canadian Armourer, as selected originally.

Canadian Traveller; Marine Department contract 30; builder's yard no. 2; approximately 8,390 d.w. tons; Harbour Marine Co., Victoria, B.C.; instead of Canadian Composer, as selected originally.

**Dominion Marine Association.**

President, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

Second Vice President, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

Executive Committee, E. H. Beazley, Union Steamship Co. of British Columbia, Vancouver; W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

General Counsel, Francis King, M.A., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

**Keel Laid.**—Since our last issue we have been advise of the laying of the following keel:

Steel Cargo Steamship, Marine Department contract 61; builders, yard no. 45; approximately 3,890 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.; Mar. 30.

**Launching of Steamships.**—We have been advised of the following launchings of steel cargo steamships for Canadian Government Merchant Marine, Ltd., in addition to those mentioned in previous issues:—

S.s. Canadian Miner; Marine Department contract 41; builder's no. 6; approximately 2,800 d.w. tons; Nova Scotia Steel & Coal Co.; April 3, 1920.

S.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4; approximately 3,575 d.w. tons; British American Shipbuilding Co., Welland, Ont. This hull was built in two sections, the aft one being launched Mar. 25, and the forward one Apr. 13. They will be taken through the Welland and St. Lawrence Canals separately, to be joined together, probably at Montreal.

The s.s. Canadian Runner; Marine Department contract 32; builder's yard no. 43; and the s.s. Canadian Carrier; Marine Department contract 33; builder's yard no. 44; each approximately 4,575 d.w. tons; being built by Port Arthur Shipbuilding Co., for Canadian Government Merchant Marine, Ltd., and the keels of which were laid Aug. 29, 1919, are expected to be launched on May 1 and 15, respectively.

The s.s. Canadian Victor; Marine Department contract 50; builder's yard no. 77; approximately 8,390 d.w. tons; being built by Canadian Vickers, Ltd., Montreal; will be launched about the end of May.

The s.s. Canadian Conqueror; Marine Department contract 51; builder's yard no. 78; approximately 8,390 d.w. tons; being built by Canadian Vickers, Ltd., Montreal; will be launched about the middle of July.

The s.s. Canadian Pathfinder; Marine Department contract 48; builder's yard no. 10; approximately 3,500 d.w. tons; being built by Dominion Shipbuilding Co.; will probably be launched in June; and a sister ship, Canadian Engineer; Marine Department contract 49; builder's yard no. 11; being built by the same builders, will probably be launched in July.

**Oil Fuel Equipment.**—The Marine Department has arranged for the installation of oil fuel burning apparatus in the following steel cargo steamships which are being built for Canadian Government Merchant Marine, Ltd.

Canadian Highlander and Canadian Skirmisher, each approximately 8,390 d. w. tons, Wallace Shipyards, North Vancouver, B.C.

Canadian Freighter and Canadian Transporter, each approximately 8,390 d.w. tons, J. Coughlan & Sons, Vancouver, B.C.

Canadian Challenger, approximately 8,390 d.w. tons, Davie Shipbuilding & Repairing Co., Lauzon, Que.

**Refrigerating Space on Steamships.**—The Marine Department has arranged for the installation of refrigerating space in the following steel cargo steamships being built for Canadian Government Merchant Marine, Ltd.

Canadian Exporter, Canadian Inventor and Canadian Prospector, each approximately 8,390 d.w. tons, J. Coughlan & Sons, Vancouver, B.C.

Canadian Commander, Canadian Conqueror, Canadian Leader and Canadian Victor, each approximately 8,390 d.w. tons, Canadian Vickers, Ltd., Montreal.

Canadian Highlander and Canadian Skirmisher, each approximately 8,390 d. w. tons, Wallace Shipyards, North Vancouver, B.C.

Canadian Traveller and Canadian Winner, each approximately 8,390 d.w. tons, Harbour Marine Co., Victoria, B.C.

Canadian Constructor and Canadian Cruiser, each approximately 10,500 d.w. tons, Halifax Shipyards, Halifax, N.S.

**Costs of Steamships.**—W. Duff, M.P. for Lunenburg, asked the following questions in the House of Commons April 7: For what steel cargo steamships built under the Dominion Government's programme have settlements been made with the builders? What was the finally ascertained deadweight capacity of each of such ships? What was the contract price per deadweight ton for each of such ships? What was the total amount paid for each of said ships? The Minister of Marine gave the following information in reply:

| Canadian. | D. w. tons | Price per ton. | Total paid. |
|---|---|---|---|
| Adventurer | 3,408 | $210 | $ 715,652.49 |
| Pioneer | 8,408 | 180 | 1,519,459.99 |
| Ranger | 8,382 | 188 | 1,575,816.00 |
| Recruit | 3,964 | 205 | 812,897.62 |
| Sailor | 3,357 | 205 | 690,409.84 |
| Seigneur | 8,391 | 188 | 1,587,643.13 |
| Sower | 3,405 | 210 | 715,649.13 |
| Spinner | 8,393 | 188 | 1,589,700.00 |
| rader | 3,341 | 205 | 686,762.88 |
| Voyageur | 4,575 | 207 | 948,660.75 |
| Warrior | 3,995 | 205 | 819,385.58 |
| | 59,619 | | $11,662,037.43 |

**Operation of steamships.** The Minister of Railways, in answering a question, in the House of Commons, recently, as to ships being operated by the Canadian National Rys., said that this was provided for by order in council. Canadian Railway and Marine World has been supplied with a copy of the order referred to, no. 575, passed Mar. 16, 1920, as follows:

The committee of the Privy Council have had before them a memorandum, dated Mar. 11, 1920, from the Minister of Marine, submitting a report from the Deputy Minister of Marine, which states as follows: That contracts have been placed with ship-building firms in Canada, by the Department, for the construction of 62 ships, of a total tonnage of approximately 376,725 tons, at an average cost of $192.04 a ton, of which 23 have been completed and delivered to the department. That several plans for the dispositions and operation of these ships have been considered, viz.: By the regular steamship operators on a basis of hire or commission to be agreed upon; by an organization to be formed within the department, subject to and under instructions from the Minister; by the Canadian National Rys.; by sale to private interests, on terms to be agreed upon, and subject to the condition that they should be available for Canadian trade, so long as any such trade is offering. That it has been determined by the government to operate some, or all, of these ships, by the directors from time to time operating the Canadian National Rys., and it having been represented that in order to avoid the full effects of collision liabilities each individual ship should be owned by a separate company incorporated for that purpose.

The Minister, therefore, recommends: that he be authorized, upon the completion and delivery, whether heretofore or hereafter, of the ships so contracted for, to transfer or cause the same to be transferred to individual companies (hereinafter called the owning companies) to be incorporated for that purpose under the Dominion Companies Act, with names similar to those of the respective vessels transferred. That the permanent directors of such owning companies shall be five or more of the directors from time to time operating the Canadian National Rys. That the terms of transfer with respect to each ship shall generally be the same or similar to the terms of transfer of the Canadian Voyageur as set forth in the draft agreement hereto attached, the necessary variations in description and price being made to suit each individual case, such terms being in effect as follows:—The owning company will agree to repay to His Majesty the whole of the expenditure made by His Majesty on the vessel affected, such expenditure to be represented by 5½% notes of the owning company in favor of His Majesty, secured, if desired, by a statutory mortgage on the vessel. As a part of the consideration for such transfer, the Minister of Finance will also receive the whole of the capital stock of the owning company, fully paid, except the qualifying shares of directors (one share each) which will stand in their respective names. All net earnings of the owning companies, after due allowances for working expenditure, renewals, repairs and other costs and charges incidental to operation, will be applied either by the owning company or the holding company hereinafter mentioned in payment of the interest on the said promissory notes and in reduction or discharge of any unpaid principal thereof.

The Minister further recommends that the Minister of Finance be authorized to transfer any capital stocks in the owning companies, received by him under the terms of any of the said agreements, to Canadian Government Merchant Marine, Ltd., (hereinafter called the holding company), receiving in exchange therefor shares in the capital stock at par, fully paid, of the holding company. Upon the whole of the promissory notes and mortgages made by the respective owning companies, and held by His Majesty under the terms of the said agreements, being paid or otherwise fully discharged, the Minister of Finance is hereby authorized to transfer to the Canadian National Ry. Co., without further compensation, all shares of stock in the holding company, so received in exchange as aforesaid. It is understood that the permanent directors of the holding company shall be five or more of the directors from time to time operating Canadian National Rys.

The Minister observes, in connection with the foregoing, that the result of his recommendations will be that the title to the several ships will stand in the name of the respective owning companies, bearing the ships name, subject to notes for the ships cost, secured by satutory mortgage on each ship in favor of His Majesty. The whole of the stock of the owning companies (less qualifying shares of directors—one share each) will be held by the holding company, and the whole of the issued capital stock of the holding company (less qualifying shares of directors) will, until all expenditures made by His Majesty in respect of the said ships are fully reimbursed to His Majesty, be held by the Minister of Finance on behalf of His Majesty. The permanent directors of both the holding and owning companies will be elected from the directors operating the Canadian National Rys.

The Minister also recommends that order in council of June 2, 1919 (no. 1022), authorizing the turning over of the said ships to Canadian National Rys., be cancelled. The committee concur in the foregoing recommendations and submit the same for approval.

**Unit Companies Incorporated.**—In accordance with arrangements made at the time of the incorporation of Canadian Government Merchant Marine, Ltd., separate companies are being incorporated for each ship. Under order in council,

Steel Cargo Steamship, Canadian Exporter, approximately 8,390 d.w. tons, built for Canadian Government Merchant Marine Ltd., by J. Coughlan & Sons, Vancouver, B.C.

575. passed March 16, the stock of the separate ship companies is owned by C. G. M. M., Ltd., the latter company's stock being owned by the Dominion Government. The following companies have been incorporated with a nominal capital of $40,000 each:—Canadian Warrior, Ltd.; Canadian Ranger, Ltd.; Canadian Recruit, Ltd.; Canadian Volunteer, Ltd.; Canadian Trader, Ltd.; Canadian Sailor, Ltd.; Canadian Trooper, Ltd.; Canadian Seigneur, Ltd.; Canadian Signaller, Ltd.; Canadian Miller, Ltd.; Canadian Adventurer, Ltd.; Canadian Gunner, Ltd.; Canadian Aviator, Ltd.; Canadian Settler, Ltd.; Canadian Spinner, Ltd.; Canadian Trapper, Ltd.; Canadian Sower, Ltd.; Canadian Navigator, Ltd.; J. A. McKee, Ltd.; Thomas J. Drummond, Ltd., and Sheba Ltd. The incorporators are:—D. B. Hanna, A. J. Mitchell, G. Ruel, R. C. Vaughan, all Canadian National Rys., and C. G. M. M. officials; and G. A. Bell, C.M.G., Deputy Minister of Railways and Canals.

**Officers of Steamships.**—The following officers have been appointed by Canadian Government Merchant Marine, Ltd. The first column contains the name of the ship, the second that of the captain, and the third that of the chief engineer:

| | | |
|---|---|---|
| Canadian Inventor | A. B. Watson | W. Britton |

**Canadian Vickers, Ltd.,** Montreal, has orders for 4 steel cargo steamships of 8,390 d.w. tons each, for Canadian Government Merchant Marine, Ltd., as follows:—

C.s. Canadian Victor; Marine Department contract 50; builder's yard no. 77; keel laid Dec. 10, 1919; to be launched about the end of May.

S.s. Canadian Conqueror; Marine Department contral 51; builder's yard no. 78; keel laid Jan. 17; to be launched about the middle of July.

The keels for the s.s. Canadian Commander; Marine Department contract 52; builder's yard no. 79; and the s.s. Canadian Leader; Marine Department contract 53; builder's yard no. 80; will be laid as berths become vacnt, and delivery will be made about Nov., 1920.

**The Collingwood Shipbuilding Co.,** advised us, April 19, that the s.s. Canadian Farmer, Marine Department contract 46, builder's yard no. 65, approximately 3,990 d.w. tons, would run her trial trips on Apl. 23, and then be delivered to the Marine Department.

The Collingwood Shipbuilding Co. advised us Apl. 19, that the s.s. Canadian Observer, Marine Department contract 47, builder's yard no. 66, approximately 3,990 d.w. tons, would be launched during the first week in May, and be delivered to the Marine Department about the end of May.

The Collingwood Shipbuilding Co's last order from the Marine Department is for a steel cargo steamship, Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons. The keel had not been laid up to Apl. 19, delay having been caused by U.S. railway strikes.

**Collingwood Shipbuilding Co.,** Kingston, Ont., advised us, April 5, that it expected to deliver the s.s. Canadian Beaver; Marine Department contract 31; builder's yard no. 15; approximately 3,990 d.w. tons; about the end of April, or early in May. The company has another contract for the s.s. Canadian Coaster; Marine Department contract 58; builder's yard no. 11; approximately 3,890 d.w. tons; the laying of the keel of which has been delayed waiting for material, but we are advised, April 10, that it was expected to be laid before the end of April.

**Davie Shipbuilding and Repairing Co.,** Lauzon, Que., is building 2 steel cargo steamships for Canadian Government Merchant Marine, td., approximately 5,100 d.w. tons each, viz.: Canadian Trapper; Marine Department contract 17; builder's yard no. 459; and Canadian Hunter; Marine Department contract 18; builder's yard no. 460. The company advised us April 13 that it expected to deliver Canadian Trapper early in May, and to launch Canadian Hunter about the end of April.

**Halifax Shipyards, Ltd.,** Halifax, N.S., is building 4 steel cargo steamships for Canadian Government Merchant Marine, Ltd., viz.: Canadian Mariner and Canadian Explorer, each approximately 8,390 d.w. tons; and Canadian Cruiser and Canadian Constructor, each approximately 10,500 d.w. tons. The company advised us April 8 that it expected to launch the first one in May. It has encountered considerable difficulty, owing to delay in delivery of material, also labor conditions.

**Harbor Marine Co.,** Victoria, B.C.—The boilers for the s.s. Canadian Winner, approximately 8,390 d.w. tons, being built for Canadian Government Merchant Marine, Ltd., were received at the shipyard towards the end of March, and were placed in the hull in sections. The shell plating of the hull was reported at that time to be practically completed, and considerable progress had then been made on the hull of the sister ship, Canadian Traveller.

**Midland Shipbuilding Co.,** Midland, Ont., which has a contract for a steel cargo steamship, Canadian Racer; Marine Department contract 54; builder's yard no. 10; advised us, April 6, that the laying of the keel had been delayed and that it had practically to close down operations owing to lack of steel.

**Nova Scotia Steel & Coal Co.,** New Glasgow, N.S., launched the s.s. Canadian Miner, Marine Department contract 41; builder's yard no. 6; approximately 2,800 d.w. tons, April 3; the christening ceremony being performed by Mrs. Levy McMillan, wife of the company's superintendent of shipbuilding. It also has a contract for another steel cargo steamship; Marine Department contract 59; builder's yard no. 8; respecting which it advised us April 8, that the keel would be laid a few days thereafter.

**Port Arthur Shipbuilding Co.,** Port Arthur, Ont., laid the keel of a steel cargo steamship, Marine Department contract 61; builder's yard no. 45; approximately 3,890 d.w. tons, for Canadian Government Merchant Marine, Ltd., Mar. 30.

The Port Arthur Shipbuilding Co. expects to launch 2 steel cargo steamships, of approximately 4,575 d.w. tons each, for Canadian Government Merchant Marine, Ltd., in May, viz.: Canadian Runner; Marine Department contract 32: builder's yard no. 43; about May 8; and Canadian Carrier; Marine Department contract 33: builder's yard no. 44; about May 15. Their keels were laid Aug. 29, 1919.

**Prince Rupert Drydock & Engineering Co.**—Prince Rupert, B.C., has about 400 men engaged at its shipyard and drydock, and more could be employed but for lack of housing accommodation. The two steel cargo steamships, Canadian Reaper and Canadian Thrasher, of approximately 8,390 d.w. tons each, under construction for Canadian Government Merchant Marine, Ltd., are reported to be progressing satisfactorily.

**Tidewater Shipbuilders, Ltd.,** Three Rivers, Que., which has a contract for 2 steel cargo steamships, for Canadian Government Marine, Ltd., viz.: Canadian Fisher and Canadian Forester, advised us, April 12, that work on the hulls was progressing very favorably, the Canadian Fisher being completely plated, and that the plating of Canadian Forester would be finished by the end of April.

## The Dominion Government's Naval Policy.

Replying to questions in the Senate Apr. 14, regarding the present conditions at the Esquimalt naval yard and its future, and also in regard to certain Dominion Government's steamships which have been utilized for war purposes, Sir James Lougheed said that the government had had under consideration for some time the question of Canada's naval defence. In view of Canada's heavy financial commitments, and the fact that Great Britain had not decided on her permanent naval policy, and of the approaching Imperial conference, at which the question of Imperial naval defence would come up for discussion between the Imperial and Dominion Governments, it had been decided to defer action in regard to a permanent policy for Canada. The Canadian Naval Service will be carried on on pre-war lines and the Dominion Government has accepted Great Britain's offer of one light cruiser and two torpedo boat destroyers to take the place of the present obsolete and useless training ships, Niobe and Rainbow. The Minister of Naval Service, in order to be free to reorganize the present service and place it on an economical and efficient basis, has ordered the demobilization of all officers and naval ratings, and for the discontinuance of civilian help at headquarters and at the naval dockyards at Esquimalt, B.C., and Halifax, N.S. The Canadian officers who are in the Imperial fleet and who are being paid by the Dominion Government, will be recalled, and placed on duty with the Canadian naval service. The Naval College will be continued. After reorganization has been completed, only those officers, and other ratings, and civilian help, will be taken on who are absolutely necessary and possess the qualifications desired.

**Drydock at Sydney, N.S.**—In connection with the proposed construction of a drydock at Sydney, N.S., by interests associated with the Sydney Foundry & Machine Works, F. Clark of that company applied recently to the city council for concessions in the way of tax exemptions, re water, etc., for the construction of a large retaining wall on the esplanade, above the site of the proposed drydock. He is reported to have stated that some change in the original dock plans will have to be made, and additional equipment to what was originally intended must be provided. An application for a grant under the Dominion Drydock Subsidies Act is before the Dominion Government.

**Importation of Shipbuilding Materials.** In response to a question in the House of Commons Apr. 12, the Minister of Marine stated that the Naval Service Department had paid $94,489.96 for material imported from the U.S. between Jan. 1, 1918, and Jan. 1, 1920, to be used in the construction of Canadian ships.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, sbow the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with the finally ascertained deadweight tons multiplied by the price per ton, the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d., tbree deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4,575 | $207. | $ 948,660.75 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " " | 67 | *8,408 | 180. | 1,519,459.99 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbldg. Co., C'wood. | 61 | *3,595 | 205. | 819,385.58 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd | 100 | 4,485 | 207. | 928,395 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | 4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9, 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbldg. Co., C'wood. | 62 | *3,964 | 205. | 813,252.07 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Jan. 3, 1919 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | Dec. 27, 1919 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | ..... | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 11, 1919 | Oct. 9, 1919 | ..... |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 28, 1919 | ..... | ..... |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | *3,341 | 205. | 686,762.88 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 9, 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3,408 | 210. | 715,652.49 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | *3,357 | 205. | 690,409.84 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3,405 | 210. | 715,649.13 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd | 1 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18, 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8,382 | 188. | 1,575,816.00 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1,587,643.15 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8,393 | 188. | 1,589,700.00 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8, 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Winner | Harbor Marine Co. Ltd. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | ..... | ..... |
| 30 | Jan. 24, 1919 | Canadian Traveller | " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | ..... |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Lloyd's | 10½ | Aug. 29, 1919 | ..... | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10½ | Aug. 29, 1919 | ..... | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Apr. 26, 1919 | Dec. 6, 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | Mar. 6, 1920 |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan. 24, 1920 | ..... |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | Feb. 24, 1920 | ..... |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd | 3 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8, 1919 | Dec. 20, 1920 |
| 41 | Mar. 31, 1919 | Canadian Miner | " " | 6 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | Apr. 3, 1920 | ..... |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Bri. Corp. | 10 | Mar. 29, 1919 | Apr. 13, 1920 | ..... |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10 | July 14, 1919 | ..... | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbldg. Co., C'wood. | 65 | 3,990 | 180. | 718,200 | Lake, s.d., p. b., and f'c's'le | Lloyd's | 11 | Sept. 3, 1919 | Dec. 27, 1919 | ..... |
| 47 | Sept. 11, 1919 | Canadian Observer | " | 66 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | ..... | ..... |
| 48 | Sept. 2, 1919 | Canadian Pathfinder | Dominion Shipbuilding Co. | 10 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | ..... | ..... |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | Jan. 17, 1920 | ..... | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 54 | Feb. 26, 1920 | Canadian Racer | Midland Shipbuilding Co. | 10 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 55 | Mar. 18, 1920 | Canadian Highlander | Wallace Shipyards Ltd | 103 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 56 | Mar. 18, 1920 | Canadian Skirmisher | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 57 | Mar. 13, 1920 | Canadian Rover | Collingwood Shipbldg. Co., C'wood. | 67 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 58 | Mar. 13, 1920 | Canadian Coaster | Collingwood Shipbldg Co., Kingston | 16 | 3,890 | 185.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 59 | ..... | ..... | Nova Scotia Steel & Coal Co. | 8 | 2,800 | 190. | 532,000 | 2.d. p., b. and f'c's'le | " | 8½ | ..... | ..... | ..... |
| 60 | Feb. 2, 1920 | Canadian Challenger | Davie Shipbuilding & Repairing Co. | 476 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 61 | Feb. 26, 1920 | ..... | Port Arthur Shipbuilding Co. | 45 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b, and f'c's'le | " | 11 | Mar. 30, 1920 | ..... | ..... |
| 62 | April 7, 1920 | Canadian Transporter | J. Coughlan & Sons | 20 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 63 | April 7, 1920 | Canadian Freighter | " | 21 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 383,519 | | $73,058,101.78 | | | | | | |

# Harbor Development, and Drydock and Ship Repairing Plant Construction, at St. John, N. B.

The Dominion Government has under construction in Courtenay Bay, St. John, N.B., a large and comprehensive scheme of harbor development, the object of which is to cope with the increasing demands of Canada's large export and import trade. In conjunction with these improvements, there are also under course of construction a dry dock and ship repair plant.

By reason of its location on the Atlantic coast, with the shortest rail haul to the interior, and the terminus of two large transcontinental railway lines, St. John is Canada's chief winter port and, as regards volume of trade, is the second ocean port of Canada. The total values of exports and imports during recent years were as follows:

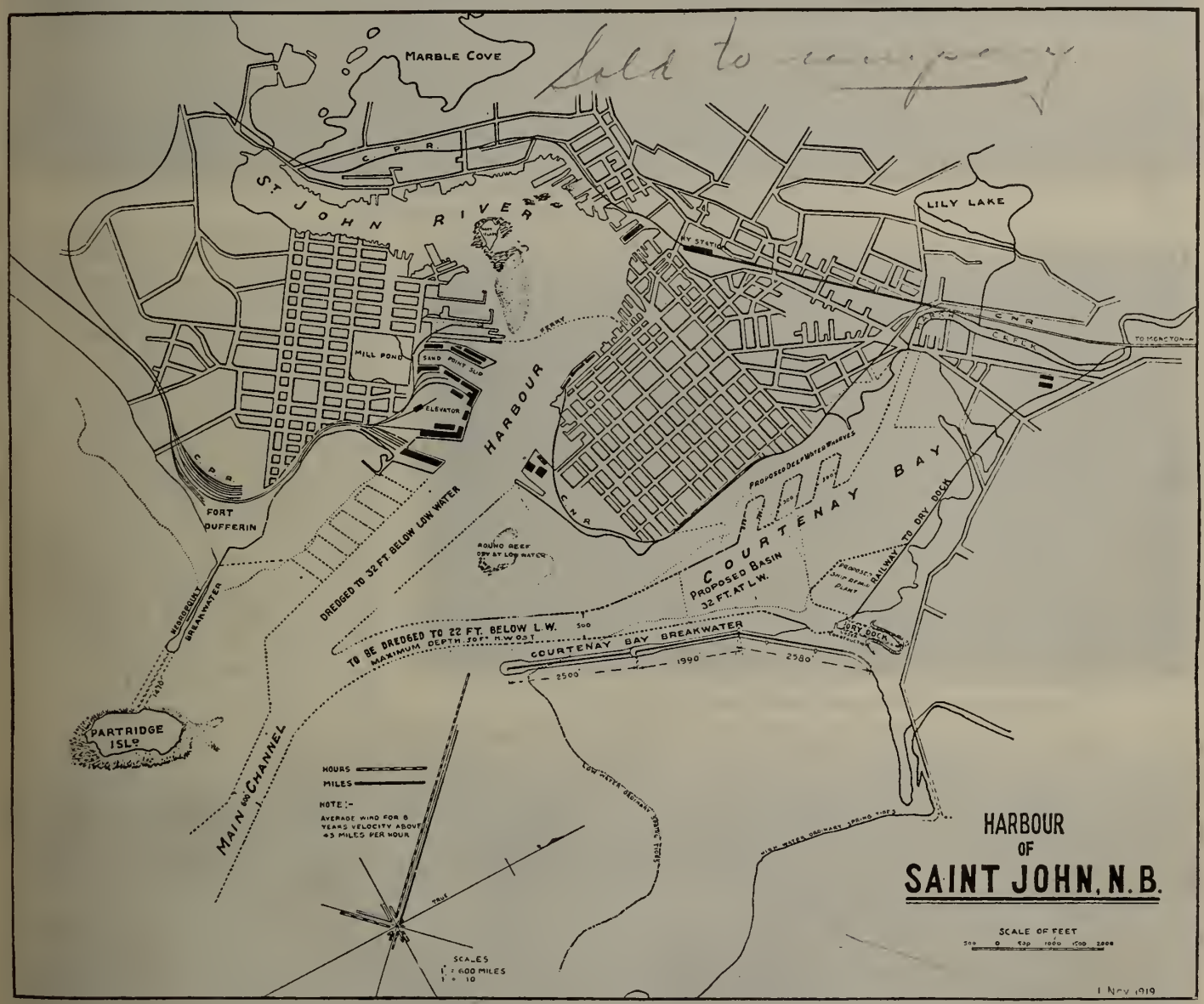
| | Imports. | Exports. | Total. |
|---|---|---|---|
| 1915 | $ 8,887,049 | $ 43,081,929 | $ 51,928,978 |
| 1916 | 11,057,022 | 119,490,818 | 130,547,840 |
| 1917 | 14,956,948 | 186,259,101 | 201,216,049 |
| 1918 | 16,787,150 | 200,783,647 | 217,570,797 |
| 1919 | 15,702,446 | 149,986,167 | 165,688,613 |
| | $67,350,615 | $699,601,662 | $766,952,277 |

Following is a comparison of the trade of Canada's four principal ports for the 12 months ended Feb. 29, 1920:—

| | Exports. | | |
|---|---|---|---|
| | Domestic. | Foreign. | Total. |
| Montreal | $345,947,511 | $4,058,545 | $350,006,056 |
| St. John | 120,410,256 | 2,270,161 | 122,680,417 |
| Halifax | 51,818,554 | 1,577,925 | 53,396,479 |
| Vancouver | 37,507,511 | 2,182,651 | 39,690,162 |

| Imports entered for consumption. | | | |
|---|---|---|---|
| | Dutiable. | Free. | Total. |
| Montreal | $166,248,134 | $60,954,584 | $227,202,718 |
| Vancouver | 35,889,159 | 10,568,604 | 46,457,763 |
| St. John | 20,529,659 | 4,675,787 | 25,205,446 |
| Halifax | 13,532,278 | 5,975,517 | 19,507,795 |

| Combined exports and imports. | |
|---|---|
| Montreal | $577,208,774 |
| St. John | 147,885,863 |
| Vancouver | 86,147,925 |
| Halifax | 72,904,274 |




The facilities to take care of the trade, in St. John's main harbor, are inadequate. During the recent winter there were as many as 17 ships at anchor awaiting berth space. Similar conditions in previous waters led to the consideration of the advantages of Courtenay Bay and to the final adoption of the scheme of improvements that is being carried on.

**Courtenay Bay.**—The accompanying map of St. John harbor shows the present deep water wharves and accommodation in the main harbor, and the location of Courtenay Bay and its relation to St. John and the Canadian National Rys. Courtenay Bay is particularly well adapted to the further expansion in harbor and terminal facilities required by St. John. It has a considerable area, an advantage over the present main harbor, and it is free from objectionable currents that make navigation and berthing of vessels difficult. There is ample room for industrial, railway and terminal development at the head and on the east side of the bay. Easy access is afforded the Canadian National Rys. which have lines on both sides, one of which terminates at the dry dock now under construction.

**Two Contracts.**—The works under construction are comprised in two contracts, known as the Harbor Works Contract and the Dry Dock Contract. These contracts were taken over in July, 1918, by the St. John Dry Dock & Shipbuilding Co., Ltd., which is incorporated under the Dominion Companies Act, the principals in which have been engaged for some years in harbor developments on the Great Lakes and in transportation and shipbuilding. The

Harbor Works Contract provides for the construction of a breakwater, entrance channel and basin and deep water wharves, the location of which is shown on the accompanying plans. This contract includes the following works: 2,500 lin. ft. of breakwater extension. The dredging of an entrance channel 500 ft. wide, with 22 ft. depth at lowest water (maximum tide 28 feet), involving the removal of about 2,500,000 cu. yd. of sand, gravel and clay. The dredging of a large turning basin to a depth of 32 ft. at lowest water, requiring the removal of about 4,500,000 cu. yd. of sand, gravel and clay. The removal of some 140,000 cu. yd. of submarine rock, leading into the entrance to the dry dock. The construction of a series of deep water piers.

The breakwater is of the rubble mound type, 7,070 ft. long, with a top width of 20 ft., outer slope, 1 on 2 horizontal, and inner slope, 1 on 1½ horizontal. The outer end, or head, has both outer and inner slopes of 1 on 3 horizontal. Large stones of from 2 to 25 tons cover the slopes. The last extension of 2,500 ft. has been under construction since Dec., 1918, and is now at its ultimate length and almost completed.

Entrance Channel and Basin.—Navigable access to Courtenay Bay will be afforded by an entrance channel 500 ft. wide, with a depth of 22 ft. at lowest water (maximum tide 28 ft.). With the range of tide that obtains, the depth in this channel at high water will vary from 43 ft. to 50 ft. The entrance channel enlarges into a turning basin, shown on the accompanying map, which will have a depth of 32 ft. at lowest water.

Deep Water Wharves.—On the west side of Courtenay Bay there will be built a series of deep water wharves, affording some 6,500 ft. of berth space, with a depth of 32 ft. at lowest water.

Dry Dock and Ship Repair Yard.—Under the terms of The Dry Docks Subsidies Act, 1910, and The Dry Docks Amendment Act, 1917, the St. John Dry Dock and Shipbuilding Co. has undertaken to build and operate a dry dock of the first class for naval and general purposes. The act specifies a first class dry dock as:

"(a) Dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollow quoin to head, 1,150 ft., clear width of entrance, 125 ft., depth of water over sill at high water ordinary spring tides, 38 ft.

Breakwater, at Courtenay Bay, St. John, N.B., from west side.

Excavation of Drydock, at Courtenay Bay, St. John, N.B.

"Provided, however, that any such dry dock shall not, for the purposes of this act, be deemed to be a dry dock of the first class unless there can be received and repaired therein, with ease and safety, the largest ships or vessels of the British Navy existing at the time at which the contract is entered into."

The dry dock, the location of which is shown on the accompanying map of the harbor and, in detail, on the accompanying plan, will have the following general dimensions: Length, 1,150 ft.; width at coping, 133 ft.; depth on sill at high water, 42 ft. By a recent change, the sill will be lowered 2 ft., thus giving a depth of that much more than is shown on the general plan. The dry dock will be the only one on the Canadian Atlantic coast capable of taking ships over 600 ft. long and will embody in its construction the latest and most efficient features of dry dock construction. Provision is made, by an intermediate sill and caisson, to use separate portions of the dock 650 ft. and 500 ft. long, to suit the size of ships to be accommodated. The inner and outer entrances will be closed by floating caissons, two of these being provided. The pumping equipment will consist of three 52 in. vertical centrifugal motor driven pumps, capable of unwatering the dock in 2½ hours. The dock will be equipped with a travelling crane capable of lifting 40 tons at a reach of one-half the width of the dock.

Coffer Dam, at entrance channel to Drydock, Courtenay Bay, St. John, N.B.

To the north of and immediately ad-

joining the dock, on a reclaimed area, there will be established an extensive ship repair yard which will include the following buildings: Main offices, boiler, engine and machinery shops; steel and brass foundries; joiner shop, plater and framer shops, blacksmith shop, pattern shop, stores and molding loft, power house.

The estimated cost of the dry dock is $5,500,000, of which the ship repair equipment will cost $1,100,000.

Progress of Work.—The contract for these works was awarded in July, 1918, and preparatory and organization work followed which was somewhat extensive, requiring the repair and outfitting of excavation plant then on the work and the taking in of additional plant to excavate the dry dock site and prism. This work involved an entirely new track layout, the installation of a compressor plant, with air line distribution, and repairs to steam shovels and car equipment. Excavation was started on Dec. 1, 1918, with steam shovels and, up to Mar. 31, 1920, a period of 16 months, a total of 575,000 cu. yd. of rock had been removed from the dry dock site and prism of which 490,000 cu. yd. were placed in the 2,500 ft. breakwater extension.

With the exception of a small amount of earth overburden, all the excavation is in rock, a large portion of which is a hard, greenish trap, with seams and faults, generally at an angle of about 45 degrees, thus making it difficult to drill. In the lower end of the prism, a carboniferous shale is encountered, with a 45 degree stratification. Excavation in the trap has resulted in fairly well defined and satisfactory break, but considerable overbreak occurs in the shale. There have been no unusual features connected with the rock excavation. The drilling has been done by tripod air drills, holes, generally spaced 8 to 10 ft., for 12 to 15 ft. lifts.

Three large Marion steam shovels have been used in the prism. As the grade depth of the excavation, which has now been reached over a considerable portion, is El.—21.5 (extreme low water -zero datum) and the coping level is El. +36.0, the most difficult problem was one of tracks and grades to get over the 57.5 ft. lift in a pit only 1,150 ft. long. This was accomplished by a switch-back along the south side of the excavation. The excavation is remarkably free from water, few springs having been encountered, and the pit is kept dry by intermittent pumping of a 4 in. centrifugal pump.

It is expected that the excavation will be completed during the ensuing summer and consideration is now being given to the actual construction of the dry dock, which will be entirely of concrete, with the exception of the stops and sills, three in number, for the two floating steel caisson gates. The sills and stops will be built of granite. A departure from usual practice will be the use of concrete for all altars.

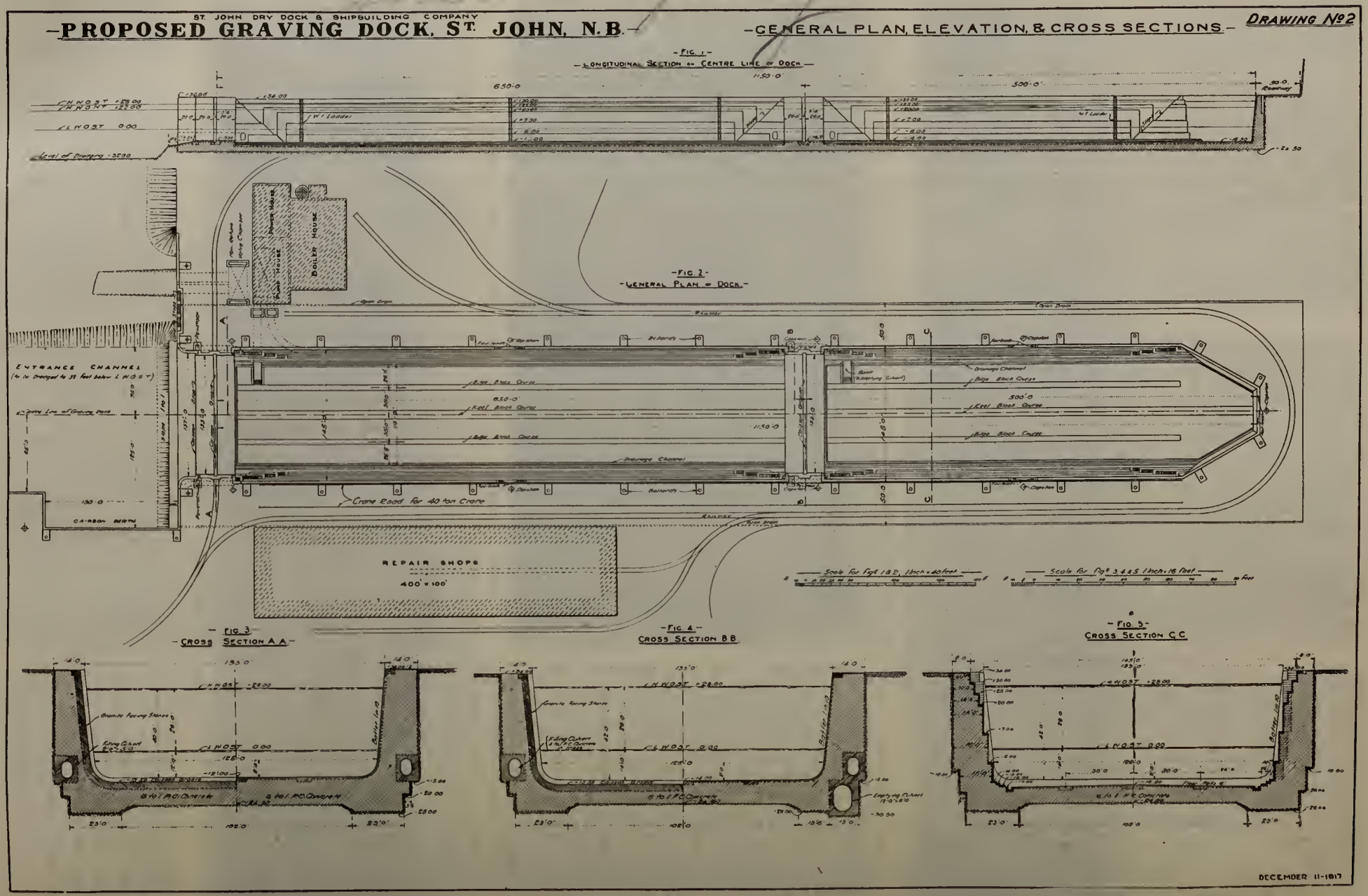
The pumping station will be built in, and form an integral part of the lower north wall of the dock and will house in the three large submerged 52 in. centrifugal main pumps and the two 12 in. drainage pumps. All pumps will be direct electric motor driven. Power for operating all pumping equipment, cranes, shops and lighting, will be generated in a central power station, by three turbo generator sets, developing about 4,000 h.p., the equipment for which is on hand.

The work resulting from the dry dock excavation has been transported, in 6 and 15 yard dump cars, to the breakwater extension, dumped from a single 4 pile bent trestle, and built up to side slopes of 1 on 2 horizontal, with top width of 20 ft. This breakwater extension is very nearly completed, with the exception of the placing of the large cover stone required for the slopes. Cover stones up to 20 tons have been sent out to the breakwater, and these are being placed into position by a travelling derrick.

Breakwater, at Courtenay Bay, St. John, N.B., from west side.

Interior of Coffer Dam, at Courtenay Bay, St. John, N.B., from drydock entrance.

Coffer Dam, at entrance channel to Drydock, Courtenay Bay, St. John, N.B.


ST. JOHN DRY DOCK & SHIPBUILDING COMPANY
PROPOSED GRAVING DOCK, ST. JOHN, N.B.
GENERAL PLAN, ELEVATION, & CROSS SECTIONS
DRAWING No 2
FIG. 1
LONGITUDINAL SECTION on CENTRE LINE of DOCK
FIG. 2
GENERAL PLAN of DOCK.
ENTRANCE CHANNEL
Crane Road for 40 ton Crane
REPAIR SHOPS
400' x 100'
Scale for Figs 1 & 2, 1 Inch = 40 feet
Scale for Figs 3, 4 & 5, 1 Inch = 16 Feet
FIG. 3
CROSS SECTION A A
FIG. 4
CROSS SECTION B B
FIG. 5
CROSS SECTION C C
DECEMBER 11-1917

A 20 in. pipe line discharge hydraulic dredge was operated in the basin last year, the material being pumped 1,800 ft. to a spoil ground south of the breakwater. At extreme low water the material was pumped against a head of 36 ft.

The accompanying map shows the site of the proposed ship repair plant, which will be an area reclaimed by means of about 1,700,000 cu. yd. of material pumped from the excavation of the basin. The company will this ensuing summer have a large hydraulic dredge for this reclamation work. For dredging the entrance channel a bucket ladder dredge has been bought and will be placed at work loading the dredged material into hopper scows to be towed to dumping ground.

A very interesting engineering feature

of the whole work is the scheme that has been adopted to remove some 140,000 cu. yd. of rock in the immediate entrance channel to the dry dock. The grade of the excavation in this channel is El.—32, which, with a 28 ft. maximum tide, gives 60 ft. at highest water. The depth of rock at the entrance to the dock is 48 ft. and the rock dips below grade 500 ft. out from this point. The width of the entrance channel is 250 ft. The customary method of submarine drilling and blasting and dredging was at first considered for the removal of this rock, but the anticipated difficulty of drilling to a 60 ft. depth, at high water, with rise and fall, of the tide, and undertow, suggested the possibility of coffer damming the whole area and excavating in the dry. This scheme also appeared to assure better results in the excavation of foundations for the lay to and fitting out berths.

dam was completed in Dec., 1919, and the water let out at low tide period, the succeeding high tide being kept out by making a closure in a sluice left for that purpose. The sheet piling has been found to be tight, but leaks have developed at the inner end of both side walls, necessitating cutting off where these walls make contact with the bank. Unusually severe weather conditions this winter have interfered with further work on the cofferdam, but work will soon be resumed and no difficulty is anticipated in making a satisfactory closure. The crucial test of the cofferdam will be when the overburden in the enclosed area is removed. The danger to be found will be from water in sand and gravel beds coming underneath the sheet piling. Dependence is being placed on the continuity of certain beds of clay, which, it is expected, will form an impenetrable seal.

Looking along top of Breakwater at Courtenay Bay, St. John, N.B.

A decision having been arrived at, a cofferdam, enclosing an area about 600 x 600 ft. has been built. The cofferdam consists of a single row of 6 inch B. C. fir, tongue and groove, sheet piling, driven from a substantial 4 pile bent trestle, with stone and earth fill on both sides. On the location of the outer cross wall of the cofferdam, there is an average depth of 45 ft. of silt, gravel, sand and clay, overlaying the rock, and the sheet piling is driven to an average penetration of 14 ft. in this material, fetching up in a bed of what appears to be stiff clay. From this it will be seen that contact has not been made with the rock. The general elevation of the ground surface within the enclosed area is El.+10 (10 ft. above lowest water). The coffer-

The Harbor Works Contract calls for the construction of a series of three deep water piers on the west side of Courtenay Bay, in the position shown on the accompanying map. Work on these has not been started.

The contracts call for completion of all works, with the exception of the deep water wharves, by July, 1922, and, based on the present rate of progress, the conditions in this respect will be fulfilled.

**The Organization.**—The St. John Drydock & Shipbuilding Co.'s officers are: Jas. Playfair, Midland, Ont., President; D. S. Pratt, Midland Ont., Vice President and Managing Director; Thomas A. Duff, Toronto, Secretary-Treasurer; J. B. Craven, New York, N.Y.; W. E. Phin, Hamilton, Ont.; W. J. Sheppard, Waubashene, Ont.; D. L. White, Jr., Midland, Ont. The local staff at St. John consists of A. R. Dufresne, Chief Engineer and Manager; E. J. Cameron, Principal Engineer; V. S. Chestnut, B. Allen, J. T. Turnbull, engineer, F. M. Ross and S. M. Telfer, general office.

Alex. Ritchie Dufresne, B.A.Sc., C.E., Chief Engineer and Manager, was born at Ottawa, Dec. 18, 1872, and graduated in civil engineering at McGill University, Montreal, in 1806, since when his record has been as follows: 1896-1900, construction, St. Lawrence River canals, Railways and Canals Department; 1900-1903, hydrographic surveys, St. Lawrence River, Public Works Department, 1903-1906, in charge of construction, St. Andrews lock and dam, Red River, Man.; 1906-1910, District Engineer for Manitoba, Dominion Public Works Department, Winnipeg; 1910-1918, Assistant Chief Engineer, Public Works Department, Ottawa; 1918 to date, Chief Engineer and Manager, St. John Drydock & Shipbuilding Co., St. John, N.B. He is a member of the American Society of Civil Engineers and of the Engineering Institute of Canada.

The rock excavation is being done by the Bedford Construction Co., Ltd., of Halifax, N.S., the officers of which are: P. Pagano, President; V. J. Cavicchi, Vice President; and J. J. Herbert, Secretary-Treasurer. Carlo Carniel is Superintendent of the works in Courtenay Bay. The other portions of the work in connection with the main contracts are being done direct by St. John Drydock & Shipbuilding Co.

## United States Shipping and Shipbuilding Notes.

The Atlantic Coast Shipbuilders' Association states that, exclusive of U.S. Shipping Board tonnage, U.S. shipyards had in hand recently 263 steel vessels of 1,250,573 gross tons for private account.

A U.S. Senate sub committee, on April 14, completed a merchant marine policy bill, containing a provision that merchant ships owned by the government shall be disposed of to private interests within 10 years. It also provides for a permanent shipping board of 7, instead of 5, members, which would be directed to devote special attention to development of new trade routes.

According to returns received by the U.S. Bureau of Navigation, merchant steel ship building on a commercial basis in the U.S. shows steady progress. On Jan. 1, shipyards were building, or under contract to build, for private shipowners, 165 steel ships of 679,170 gross tons. On Feb. 1, the total had increased to 183 steel ships of 791,911 gross tons, and on Mar. 1, the total was 247 of 947,-193 gross tons.

**Esquimalt Dry Dock.** We are officially advised that the Dominion Government has acquired a site for the construction of a dry dock at Skinners Cove, Esquimalt, B.C. The proposed drydock will be of the first class as specified under the Drydocks Subsidy Act and will have the following general dimensions,—length 1,150 ft., breadth 125 ft., depth 38 ft. It was anticipated that tenders for the construction of the dock would be invited about the end of April.

**Shipping figures for the world,** published recently in London, Eng., are reported to show that Canada comes first after the great powers.

# General Shipbuilding Matters Throughout Canada.

Bridgewater Shipping Co., Bridgewater, N.S., launched the knockabout trawler R. M. Symons, April 7. Her dimensions are,—length over all 126 ft., breadth 26 ft., depth of hold 10½ ft.

Canadian Vickers, Ltd., Montreal, is building two steel cargo steamships for Norwegian owners, each 400 ft. long, 52 ft. broad, 31 ft. deep and 8,300 d.w. tons. The first, the s.s. Tatjana, was launched April 24; the second, s.s. Loch Tay, will be launched early in May.

Canadian Vickers, Ltd., will complete, before the close of navigation this year, two steel cargo steamships, of 6,300 d.w. tons each, for the Norwegian-Amerika Line.

Collingwood Shipbuilding Co., Collingwood, Ont., has received on order from the Standard Oil Co., of New Jersey, for a steel self propelling ship, specially designed for carrying oil in bulk, on the River La Plata. Its length will be 170 ft., beam 35 ft., depth moulded to main deck 10½ ft., deadweight capacity 650 long tons.

Collingwood Shipbuilding Co., Kingston, Ont., intends building a 750 ft. drydock at Kingston, to be ready for business at the opening of the Welland Ship Canal, but as the canal may not be completed for five years, the building of the dry dock will not be started for probably two years, which would leave ample time to have it completed ready for operation concurrently with the opening of the new canal. Arrangements will have to be made with the City of Kingston to remove a portion of the waterworks pumping station from the site desired.

J. Coughlan & Sons, Ltd., Vancouver, B.C.—The first steamship built by this company for private owners, was launched Mar. 25, and named Braheholm by Mrs. S. D. Scott, President of the Women's Canadian Club. The keel was laid early in Dec., 1919, and was originally intended for use by a subsidiary company of the builders, but was sold to the Swedish-American-Mexican Line, Gothenburg, Sweden. She is of steel with cargo capacity of 8,800 tons, and is equipped with triple expansion engine, developing 3,000 i.h.p., for a speed of 11½ knots an hour. Her dimensions are,—length overall 427 ft., beam moulded 59 ft., depth moulded 28 ft. 9 in., draft 24 ft. 2 in.

J. Coughlan & Sons, Ltd. has been incorporated under the Dominion Companies Act, with authorized capital of $3,000,000, and office at Vancouver, B.C., to take over the business and property of J. Coughlan & Sons, Ltd., incorporated under the British Columbia Companies Act, with power to build, own and operate drydocks, marine railways, shipbuilding plants, etc. The incorporators are: J. J. Coughlan, D. A. McDonald, A. C. Desbrisay, H. A. Bourne and E. M. Williams, Vancouver, B.C. The object of this Dominion incorporation is to place the company in a position to be able to build and operate a drydock under the Dominion Drydock Subsidy Act, it being necessary that a company in receipt of a subsidy shall be incorporated under the Dominion Companies Act.

Davie Shipbuilding & Repairing Co., Lauzon, Que.—Canada Steamship Lines, Ltd., which was a creditor of the Davie Co., for some $600,000, has taken over the plant for a year, has guaranteed all outside liabilities, amounting to approximately $2,500,000, and has taken a mortgage on the plant. It is said that if, by the end of the year, the Davie Co. is not able to make new financial arrangements, the Canada Steamship Lines will take over the plant. The directors are: J. W. Norcross, President; A. A. Wright, Vice President and Managing Director; Sir David Watson, Vice President; F. S. Isard, Treasurer; C. A. Barnard, K.C., F. H. Markey, K.C., and C. A. Sara. The other officers are: W. L. Murray, Secretary; L. H. Taylor, Assistant Treasurer; J. T. Boissinet, Assistant Secretary; G. D. Davie, General Manager.

The Davie Shipbuilding & Repairing Co. has received an order from Capt. A. Donaldson, Roberval, Que., for the steel framing for a steamboat 90 ft. long over all, for service on Lake St. John, between Peribonka and Roberval.

Foundation Co. of British Columbia, Ltd., Victoria, B.C., is offering for sale the whole or any part of its plant and equipment at its wooden shipbuilding yard on the old Songhees Reserve, comprising shipbuilding equipment, wood working machinery, machine tools, donkey engines, hoists, compressors, derricks, buildings, general lumber and fire equipment.

Freeman & Giffin, Isaacs Harbor, N.S., have completed the tern schooner Ena Moulton for R. Moulton, Burgeo, Nfld. Her dimensions are,—length 127 ft., beam 28.5 ft., depth 11.4 ft.

New Westminster Construction & Engineering Co., New Westminster, B.C. It is reported that a deal has been practically concluded for the sale of this company's shipbuilding plant at Poplar Island, to Haley and Christian. The yard is at present in possession of the latter parties, who are overhauling the s.s. Comox for service in the Mexican coasting trade. This steamship, it is stated, is being practically rebuilt, much of the hull plating, framing and decks being replaced and new engines installed. The work will, it is said, be completed during June. This shipbuilding plant is one of those which was equipped for the construction of wooden steamships during the war.

Prince Rupert Drydock & Engineering Co., Prince Rupert, B.C. The litigation between the Erb and Mullen interests in connection with the control of this property, have been concluded and an agreement made whereby Newman Erb, of New York, has acquired all the rights and interest owned by J. L. Mullen, of Pittsburg, Pa., and his associates, for $75,000. This gives him complete control of the lease of the drydock and shipbuilding plant at Prince Rupert, from the Grand Trunk Pacific Ry. We are advised Mr. Erb is negotiating with several oil companies in New York and Holland for the building of 20 oil tank steamships at an approximate cost of $36,000,000. As soon as this matter is arranged, work is to start on the construction of 2 additional ways at Prince Rupert. These will have about 75 ft. centres, and the company expects to employ about 1,500 men. It will also build at least 200 houses each to accommodate a man, wife, and two children.

T. Thurston & Son, Port Stanley, Ont., launched a fishing tug, Demijohn, for H. Woolatt and J. Anderson of Windsor, Ont., Mar. 27.

Tidewater Shipbuilders Ltd., is reported to have closed down its shipbuilding plant at Three Rivers, Que., Apr. 19, on account of a strike. Laborers are demanding 70c an hour, machinists 90c an hour, and double time for over time.

## Ocean, Coast, Lake and River Steamship Officers for 1920.

The following appointments made by Canadian companies engaged in navigation, for their various steamships and tugs, have been reported to Canadian Railway and Marine World, in addition to those given in our last issue. The first column contains the names of the ships, the second those of the captains, and the third those of the chief engineers:

**Butler Freighting & Towing Co., Victoria, B.C.**

| | | |
|---|---|---|
| Grainer | W. B. McCartney | A. Pike |

**Canada Steamship Lines, Ltd., Montreal.**

| | | |
|---|---|---|
| Cape Diamond | W. Gagne | O. Bonin |
| Cape Eternity | M. McKay | N. Crepeau |
| Cape St. Francis | | A. Chayer |
| Cape Trinity | | J. A. Boulanger |
| Modjeska | J. Henderson | C. Kniffen |
| Quebec | N. McGlennon | J. Matte |
| Rapids Queen | | J. E. Kane |
| Three Rivers | A. Mondor | G. Gaynon, Jr. |
| Toronto | E. A. Booth | E. McDonald |
| White Star | | T. Crossby |

**Canadian National Rys. Car Ferries Service, Moncton, N.B.**

| | | |
|---|---|---|
| Prince Edward Island | J. L. Read | J. A. Sutherland |
| Scotia No. 2 | L. R. Maguire | J. Anderson |
| | A. Keating | J. Campbell |
| | W. Brophy | E. Morrison |

**Coast Steamship Co., Vancouver, B.C.**

| | | |
|---|---|---|
| Celtic | J. Finlay | T. Devereux |
| Clansman | R. W. H. Lloyd | G. Williams |
| Coaster | M.F.MacDonald | W. Snowdon |

**Coastwise Steamship & Barge Co., Vancouver, B.C.**

| | | |
|---|---|---|
| Amur | S. Snoddy | R. Middlemass |
| Anyox | W. F. Spormen | W. E. Tarbox |
| Baroda | A. Cameron | G. Nutter |
| Coquitlam City | H. Dexter | W. Allison |
| John Fairchild | A. McCartney | S. Bridge |
| Granby No. 1 | J. E. Moore | J. Reid |
| Granco | H. A. Neddin | T. Hardy |
| Henry Villard | C. B. Hughes | C. Carlson |
| John C. Potter | E. Fulton | T. Hughes |
| Louisiana | R. B. MacRae | R. Bruce |
| Marmion | J. McNaughton | A. Findlay |
| Tartar | T. Thomson | E. Equist |

**Consolidated Whaling Corporation, Victoria, B.C.**

| | | |
|---|---|---|
| Black | W. Balcom | — Hornibrook |
| Blue | J. Anderson | — Martinson |
| Brown | K. Halvorsen | J. Brice |
| Green | S. J. Sivertsen | — Aitkins |
| Orion | J. Andersen | A. Peppler |
| St. Lawrence | J. R. Arvesen | J. McCrae |
| White | J. Christian | J. S. Parker |
| William Grant | W. Heater | — Hampton |

**Grand Manan Steamship Co., Grand Manan, N.B.**

| | | |
|---|---|---|
| Grand Manan | W. W. Hersey | J. Cowie |

**Keenan Towing Co., Owen Sound, Ont.**

| | | |
|---|---|---|
| Keenan | G. Hindman | A. Kenny |

**Maritime Salvage & Wrecking Co., Montreal.**

| | | |
|---|---|---|
| Eleanor | J. Norman | A. McDonald |
| Maggie Marshall | J. A. Williams | J. Anderson |
| Province | T. Bare | J. Boyd |
| Sarnia City | J. Livingston | G. Eisner |

**Niagara, St. Catharines & Toronto Navigation Co., St. Catharines, Ont.**

| | | |
|---|---|---|
| Dalhousie City | G. W. Blanchard | J.H. Brown |

**North Vancouver Municipal Ferries, North Vancouver, B.C.**

| | | |
|---|---|---|
| North Vancouver No. 2 | R. R. Spicer<br>W. Fatke | D. Becker |
| North Vancouver No. 3 | W. J. Spracklin<br>I. B. King | W. McLaren |

**Peninsula Tug & Towing Co., Wiarton, Ont.**

| | | |
|---|---|---|
| Crawford | J. Preston | R. H. Isbester |

**Pennsylvania-Ontario Transportation Co., Cleveland, Ohio.**

| | | |
|---|---|---|
| Ashtabula | C. F. Meyers | S. M. Sylvester |

**La Traverse de Lachine Ltee, Lachine, Que.**

| | | |
|---|---|---|
| Hebron | J. B. Couillard | E. Marchand |

**Rob G. Weddell, Trenton, Ont.**

| | | |
|---|---|---|
| Aurelia | M. Palmeteer | Jas. Norris |
| M. Sicken | B. Bowen | Jas. Robertson |
| Minitaga | H. Davidson | W. McInnes |
| Rob G. Weddell | J. Pratt | John Urquhart |

**West Vancouver Municipal Ferries, West Vancouver, B.C.**

| | | |
|---|---|---|
| Doncella | A. N. Edwards | J. A. Davis |
| Sonrisa | D. O. Lunn | R. W. Pine |
| West Vancouver No. 5 | J. Watson | H. L. Thomson |

**Terminal Steam Navigation Co., Vancouver, B.C.**

| | | |
|---|---|---|
| Ballena | J. A. Cates | A. Pirie |
| Bowena | F. W. Gilbert | W. Williamson |

## Navigation Regulations for Lower Detroit River.

While the Livingstone channel is being widened, the following rules and regulations will go into effect on the opening of navigation, 1920, and will remain in effect until further notice. Rules 1 to 5, below, cover the regulations, which may be summarized as follows:—

Amherstburg channel is to be used by all downbound vessels, all upbound loaded freight vessels, all upbound light vessels with more than one vessel in tow, optional for upbound passenger vessels, optional for vessels under 100 gross tons and for vessels making local stops.

Livingstone channel is to be used by all upbound light vessels when alone or with but one light vessel in tow, optional for upbound passenger vessels, but such vessels are subject to the rules governing this channel, optional for vessels under 100 gross tons and for vessels making local stops; time interval of five minutes required between vessels, and no vessel to pass another between Bar Point light vessel and Ballards Reef.

All vessels using Amherstburg channel will enter or leave Lake Erie via channel to the east of Detroit River lighthouse. All vessels upbound for Livingstone channel will leave Lake Erie via the channel to the west of Detroit River lighthouse.

Upbound vessels using Livingstone channel will keep well to its westerly side where said channel unites with Amherstburg channel north of Detroit River lighthouse.

Upbound vessels leaving Livingstone channel must cross the path of downbound vessels in the vicinity of Ballards Reef. Downbound vessels have the right of way, but masters of both downbound and upbound vessels using Amherstburg channel should be unfailingly watchful for upbound vessels from Livingstone channel. All vessels in this locality should navigate under complete control and with the utmost caution.

Rule 1. No vessel of 100 gross tons or over shall navigate the Livingstone channel at a greater speed than 12 statute miles an hour between its junction with the Amherstburg channel at Ballards Reef and the Bar Point light vessel; nor the Amherstburg channel at a greater speed than 12 statute miles an hour between the south end of Bois Blanc Island and the North gas buoys at Ballards Reef, and where the width of either of these channels is restricted by improvements in progress the speed through such restricted width of channel shall not exceed 8 statue miles an hour.

Rule 2. No loaded freight vessel, whether alone or in tow, shall pass through Livingstone channel, in either direction. All downbound vessels, all upbound loaded vessels, and all upbound light vessels with more than one vessel in tow, shall pass through the Amherstburg channel and the channel to the east of Detroit river lighthouse. All upbound light vessels, whether alone or with a single vessel in tow, shall pass through the channel to the west of Detroit river lighthouse and through the Livingstone channel, except as stated in rule 3. Vessels under 100 gross tons, and vessels making local stops along these routes, are exempt from this rule.

Rule 3. Upbound passenger vessels may use either the Amherstburg channel or the Livingstone channel, but if they use the latter they shall be subject to the rules governing that channel.

Rule 4. All light draft passenger and freight vessels using the Amherstburg channel in either direction shall pass through the auxiliary channel (280 ft. wide and 14½ ft. deep), to the eastward of the improved channel at Ballards Reef.

Rule 5. No vessel shall pass another vessel bound in the same direction in that portion of Livingstone channel between its junction with Amherstburg channel at Bar Point light vessel and at Ballards Reef, nor at any other portion of either Livingstone and Amherstburg channels where the width of the channel is restricted by improvements in progress. Between any two upbound vessels navigating that portion of Livingstone channel from Bar Point light vessel to Ballards Reef, there shall be a time interval of not less than five minutes. Tugs without tows and vessels under 100 gross tons are exempt from this rule.

## Mainly About Marine People.

W. A. Bowden, B.A.Sc., Chief Engineer, Railways and Canals Department, Ottawa, has been appointed Consulting Engineer to the Dominion Government, in connection with the reference, to the International Joint Waterways Commission, of the question of the further improvement of the St. Lawrence River, between Montreal and Lake Ontario, full particulars of which were given in Canadian Railway and Marine World for April, page 210.

C. Duguid, Naval Architect, Marine Department, has returned to Ottawa, from Great Britain, where he went on official business.

H. S. Durkee, heretofore in the Grand Trunk Pacific Ry. Freight Department, Vancouver, B.C., has resigned to enter Cunard Line Steamship Co.'s service as Contracting Freight Agent, at Vancouver.

Harold E. A. Hawken, Chief Registrar of Shipping, Marine Department, Ottawa, is acting as Assistant Deputy Minister of Marine, Cameron Stanton having been superannuated.

Commander B. L. Johnston, D.S.O., who was appointed Superintendent of the British Columbia, Pilotage District, at Victoria, Jan. 1, has resigned, and Charles Eddie, Supervising Examiner of Masters and Mates, Western Division, Vancouver, is acting until another appointment is made.

Francis King, M.A., General Counsel, Dominion Marine Association, addressed the London, Ont., Chamber of Commerce, Apr. 8, on the proposed legislation to place the control of inland shipping under the Board of Railway Commissioners.

Jas. Playfair, President, Great Lakes Transportation Co., and Mrs. Playfair, returned to Midland, Ont., recently, after spending some weeks in California.

H. B. Smith, President, Collingwood Shipbuilding Co. and Northern Navigation Co., has paid off the balance of mortgage on St. George's Anglican Church, at Owen Sound, Ont., as a thank offering for the conclusion of peace.

Cameron Stanton, Assistant Deputy Minister of Marine, after having been on leave in California since early in Dec., 1919, retired from the service, Mar. 31, and was placed on the superannuation list. He was born July 12, 1861, and received his first permanent appointment in the government service, June 1, 1879.

W. J. Stewart, Chief Hydrographer, Naval Service Department, is granted an allowance of $1,000 in the estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, for services performed during 1919-1920 in relation to questions under consideration by the International Joint Commission.

R. B. Teakle, General Manager, Canadian Government Merchant Marine, Ltd., left Montreal Apr. 5, for a business trip to the Pacific coast.

Wm. Tremblay has been appointed captain of the Naval Service Department's patrol boat Loos.

Capt. R. Winter, master of Canadian Government Merchant Marine's s.s. Canadian Raider, is reported to have been lost overboard, while on a voyage between Melbourne and Sydney, Australia.

## Proposed Dominion Government Control of Ships Trading with Canadian Ports.

H. H. Stevens, M.P. for Center Vancouver, B.C., moved the following resolution in the House of Commons Apr. 14:—"That it is expedient to amend the Water Carriage of Goods Act, Statutes of 1910, chap. 61, by providing that the act shall also apply to ships carrying goods from any port outside of Canada, to any port in Canada, and to goods carried by such ships or received to be carried by such ships."

In introducing the motion, he stated that it has been the custom for owners and charterers to insert clauses in bills of lading, contracting themselves out of liability for damage to goods carried, and this practice has been the cause of considerable complaint, shippers contending that it has not been possible for them to obtain justice in regard to claims for damaged goods. He pointed out that responsible lines operating regularly between various ports, seldom try to contract themselves out of liability, but tramp ships of small lines, making irregular calls, simply picking up cargo and carrying it here and there as opportunity offers, frequently take advantage of these special clauses in their bills of lading, and cause loss to the shippers. After discussion, the motion was withdrawn, on the understanding that a bill will be introduced to cover the point raised.

**Proposed Drydock at Louisburg, N.S.**—J. W. Maddin, K.C., one of the promoters of the proposed drydock at Louisburg, N.S., on his return there from Ottawa, recently, where he has been seeking a Dominion subsidy in aid of building the dock, is reported to have stated that although the company had not been refused a subsidy it could be gathered from the government's attitude that it will not subsidize any drydock for Nova Scotia, during this year, and probably not next year. He is also reported to have stated that it was not likely that his company would proceed with the construction of a drydock without subsidy.

**Lists of Lights and Fog Signals.** The Marine Department, Ottawa, has issued the following lists of lights and fog signals corrected to April 1. (1) On the Atlantic coast, including the Gulf of St. Lawrence, to head of ocean navigation. (2) West of Montreal and east of British Columbia. (3) On the Pacific coast, and British Columbia rivers and lakes

## Halifax Graving Dock Questions Answered in the Senate.

The following questions were asked in the Senate April 6, by Senator Dennis, of Halifax, N.S., the answers given by Sir Jas. Lougheed:

As the government taken possession of the property of the Halifax Graving Dock Co., Ltd.? Answer. Yes.

If so, on what date, and was it by lease, tender, purchase, expropriation, or by order in ouncil under the War Measures Act? Answer. Expropriated by order in council May 27, 1918.

Hs any sum been paid for or on account of the property, and if so how much and on what date or dates? Answer. No.

Is the Halifax graving dock and adjunct ship repairing plant being operated by any department of the government? If so, for how long has it beenso operated? Answer. No.

If not now operated as a public work by the government, has it been rented, sold, loaned, or given to a private company? Answer. Leased to Halifax Shipyards, Ltd.

If so (a) on what date, (b) on what terms and conditions, and (c) for what period? Answer. (a) Order in council June 10, 1918; (b) Annual rental of $62,500. The company agree and bind itself to buy the dock property and plant outright, by giving notice to that effect at any time during the term of the lease, for $1,250,000; (c) For one year computed from June 24, 1918, but in case notice is not given within the year then the lease shall continue from year to year, upon the same terms and conditions, until such notice is given.

The name of the private company to which the Halifax graving dock property has been so transferred, its capitalization, and the names of its directors. Answer. Halifax Shipyards, Ltd (b and c) No information in departmental records.

How much, if anything, has been paid to Mr. 1, 1920, by said private company on account of the rental, or purchase, or for the use of said graving dock property? Answer. $96,750 rental.

The amount paid by the government to the Halifax Graving Dock Co. for its property at Halifax, taken possession of by the government, and if nothing, the reason for withholding payment; and has any effort been made, and if so, what, to effect an amicable settlement with the Halifax Graving Dock Co.? Answer. Nothing paid; an offer of $1,100,000 was made for the property, but refused, when proceedings to expropriate were instituted.

The number of square feet of land and land covered with water taken by the government from the Halifax Graving Dock Co. on (or in connection with) which the dock and plant was located. Answer. 7.5 acres.

Was any land, and land covered with water, additional to that taken from the Halifax Graving Dock Co., sold, leased, or given to Halifax Shipyards, Ltd.? If so (a) how many square feet, (b) was it acquired by purchase thereof to the government, and (d) if sold or leased to Halifax Shipyards, at what price? Answer. Yes; (a) 38,280 ft.; (b) By expropriation; ,c) $11,484 was offered the Lorne Yacht Club for this property but refused; (d) Halifax Shipyards, Ltd., to pay 5% on award and costs, if any, with right to purchase.

Has the government expended any money upon the property taken from the Halifax Graving Dock Co., or upon any land or other property acquired in connection therewith, since its acquisition? If so, state the amount so expended and the nature of the work done. Answer, The government has paid out 53,960 for the erection of buildings, wharves, etc., to replace those destroyed by the explosion. This amount includes $23,485.93 worth of materials handed over to Halifax Shipyards, Ltd., which is to be reimbursed by that company, thereby leaving government expenditure at $30,474.07.

Hs the government been asked to make any further expenditures in this connection? If so, how much, and does it propose to do so. Answer. No.

Is the government to be fully reimbursed for all its expenditures for the Halifax graving dock property and in connection therewith by Halifax Shipyards, Ltd., and if not all, what proportion and upon what conditions; and whether or not any deferred payments carry interest charges? Answer. Answered by answers to previous questions.

## United States Navigation Wages on the Great Lakes.

The following agreement was drown up Apr. 6, at Detroit, Mich., by the Great Lakes Passenger Lines Association and agreed to by its members and also by some of the independent passenger steamship lines, with the firemen, oilers, water tenders and seamen's unions:

"There shall be an advance in wages to the members of the said unions employed on boats of the Passenger Steamboat Lines of 25% over last year's scales. and the said unions shall have an opportunity to put into operation an 8-hour day, as to their members, if it can be done without the employment of additional men, and without additional expense to the passenger steamboat lines, the same to be under the supervision and subject to the approval of the officers of the ships, the said officers to have orders to co-operate in establishing said 8-hour day; provide, however, that it is understood that on certain steamers one or two additional coal passers may have to be employed."

We were advised April 14 that the agreement had not then been assented to by the unions.

**C. G. S. Champlain.**—The Minister of Railways stated in the House of Commons, Mar. 24, in answer to questions, that five tenders had been received for the purchase of this ship, viz.: Gulf of St. Lawrence Shipping & Trading Co., Quebec, Que., $61,050; R. T. Sainthill and Co., North Sydney, N.S., $55,000 (subject to inspection and approval, and received after other tenders opened); Thomas A. Duff, Toronto, $31,500; J. C. Hearn, Quebec, Que., $4,500; W. J. Thomson, Quebec, Que., $4,250. No sale of the ship had been made up to that date (Mar. 24). The conditions of payment are cash.

**C.P.R. Steamships Sold and Bought.**—The C.P.R. annual report for the calendar year 1919 states that, during the year, the following steamships were sold, viz.: Prince George, Princess May, Princess Margaret, Monmouth and Virginian. The steamships War Beryl and War Peridot, each 10,500 d.w. tons, were bought.

## Shipbuilding and Ship Channel Estimates for 1920-1921.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items under Public Works, chargeable to capital, Marine Department:—

| | |
|---|---|
| River St. Lawrence ship channel, maintenance and operating dredging fleet . . | $ 478,000 |
| Maintenance and improvements of Sorel shipyard, shops and offices, as well as operating expenses . | 65,000 |
| Government shipbuilding programme, amount required for the construction of ships in accordance with government programme | 20,000,000 |
| Construction of icebreaking steamship, to be used on River St. Lawrence.... | 2,000,000 |
| | $22,543,000 |

**Steamship Merger Suits.**—Two actions have been entered in the Superior Court at Montreal in connection with the formation of Canada Steamship Lines, Ltd., a few years 'ago. One of these is by James Playfair, President, Great Lakes Transportation Co., Midland, Ont., who claims $511,725, and the other by James Carruthers, formerly President Canada Steamship Lines, Ltd., for $168,283, the defendants in each case being W. Grant Morden, M.P., London, Eng., and C. A. Barnard, K.C., Montreal. The plaintiffs claim that in 1912 and 1913 the defendants incorporated a company known as Canada Transportation Lines, Ltd., changed subsequently to Canada Steamship Lines, Ltd., that plaintiffs were individually large stockholders of the Richelieu & Ontario Navigation Co. Ltd., that they were induced to use their influence with other stockholders, to consent to the transfer of their holdings to the new company, and that they (plaintiffs) were to receive a certain percentage on their holdings in the R. & O. N. Co. The plaintiffs claim that they performed their share of the contract, but that defendants failed to carry out the transfer of the shares in the new company as agreed, and they now sue for the transfer of the shares and payment of accrued dividends.

**The s.s. War Isis,** which was built by the Port Arthur Shipbuilding Co., Port Arthur, Ont., in 1918, for the British Government, under order from the Imperial Munitions Board, was offered for sale by auction in London, Eng., recently, to any person entitled to own a British vessel. She is of steel, single deck type, about 2,231 tons gross, 1,343 tons registered and 3,230 tons d.w., on about 20 ft. draft. She was built under Lloyd's special survey and classed A1. She is equipped with triple expansion engines, and two single ended boilers, for a speed of about 9½ knots an hour, on 24 tons of fuel. The hull is divided into 2 holds, with 4 hatches. Her dimensions are,—length 251 ft., breadth 43.8 ft., depth 21.6 ft.

**British Columbia Pilotage**—A press report states that a message was received in Vancouver early in April from the Deputy Minister of Marine to the effect that unless the B.C. pilots accept the government terms regarding wages and working conditions, open pilotage will become effective on the British Columbia coast, May 6. The pilots are asking a minimum of $325 a month, including 5% superannuation, and the valuation of their equipment to be settled by arbitration. In addition they ask their fare, including room and board, when travelling to or from pilotage duty.

## Atlantic and Pacific Ocean.

The Cunard Steamship Co. has announced that its Atlantic steamships will call at Halifax, N.S., on their westward voyage, making one call a month, until the end of September.

Furness, Withy & Co. announce the inauguration of a steamship service between Montreal and Sweden, on the reopening of St. Lawrence navigation, the s.s. Gunborg making the first sailing.

The Red Star Line announces the commencement of a steamship service between Montreal and Antwerp, Belgium, the first sailing to take place early in May. The steamships Aledo and Challenger, which will be used in the service, are on their way from Antwerp.

Elder Dempster and Co.'s new steamship service between Canada and the west coast of Africa, will be commenced with the s.s. Gaboon, leaving Montreal early in May, calling at Dakar, Freetown, Sekondi, Accra, Lagos, and other ports should sufficient inducement offer.

The British War Office s.s. Petrel has been transferred from the Canadian to the British register. She was built at Port Richmond, N.Y., in 1915, and is screw driven by engine of 65 h.p., her dimensions being,—length 123.7 ft., breadth 26.3 ft., depth 15.3 ft., tonnage 504 gross, 367 registered.

The White Star Lines' s.s. Megantic arrived at New York, Apr. 15, via the Panama Canal, from Australia, and sailed for Liverpool, Eng., Apr. 21, having completed all her war transport service. On her arrival in England, she will be put on the Canadian route again and is expected to sail for Montreal about May 8.

Canadian Pacific Ocean Services Ltd. has sold the s.s. Virginian to Swedish interests. She was built at Glasgow, Scotland, in 1905, for the Allan Line Steamship Co., and is screw driven by engines of 12,000 i.h.p. Her dimensions are,—length 520.4 ft., breadth 60.3 ft., depth 38 ft.; tonnage 10,757 gross, 6,827 registered.

The Swedish-American Line, Ltd., and the Trans-Atlantic Steamship Co. have arranged to commence an ocean service between Montreal and Swedish ports, on the reopening of St. Lawrence navigation. It is expected that the first sailing will be early in May, and that other sailings will be made at intervals of three weeks.

The s.s. War Charger, one of the steel steamships built by J. Coughlan & Sons, Vancouver, for the British Government, under orders from the Imperial Munitions Board, and sold recently to Greek parties for, it is reported, $1,800,000, has, since 1918 been in service on the Pacific and Atlantic Oceans and the Mediterranean Sea.

Canadian Pacific Ocean Services' s.s. Empress of Canada will, it is announced, be launched at Govan, Scotland, about Aug. 17, and it is anticipated that she will be completed and ready to sail from Liverpool during March, 1921, for Vancouver, B.C., when she will be placed in the trans-Pacific service. She will be 644 ft. long, by 77 ft. beam, and approximately 22,000 tons. She will be equipped with all the latest improvements, including gymnasium, swimming baths, dark rooms for photography, etc., and the whole promenade deck will be given up to social and amusement purposes.

Canadian Pacific Ocean Services, Ltd is booking through passages to various points, until recently in the war area, including Hamburg, Danzig, Vienna, Antwerp, etc. Passengers for Hamburg must have passports vised by the Swiss Consul, representing German interests; those to Danzig must hold Polish passports, no vise being necessary. Passengers to Vienna, Buchs, Havre and Antwerp must be booked via Liverpool, or by the direct continental service. Germans must apply for passports to nearest Swiss Consul, and Austrians and Hungarians to the nearest Swedish Consul, but when the destination is Buchs or Vienna, both French and Swiss visas are required, and for Antwerp a Belgian visa also. Germans booking through France or Belgium must appear personally before the nearest French or Belgian Consul to secure visas. The first of the company's sailings on the St. Lawrence route this year will be made by the s.s. Victorian from Quebec, May 7, followed by the s.s. Corsican from Montreal, May 8.

## Maritime Provinces and Newfoundland.

The s.s. Edmund Donald is reported to have been bought by St. John's, Nfld., parties for service on the St. John's-Halifax-Boston route. The Edmund Donald was formerly named David C, and was built at Shad Bay, N.S., in 1919.

A bill will be presented in the New Brunswick Legislature shortly, to enable the City of St. John, N.B., and the City and County of St. John municipality, to issue bonds to buy, or build a ferry steamship, to be operated between Indiantown and Pleasant Point.

Eastern Steamship Line, Inc., announces, that until the International Line service is resumed between Boston, Mass., and St. John, N.B., miscellaneous freight shipments will be handled by the s.s. North Land, to Yarmouth, N.S., and thence by the s.s. Keith Cann to St. John, giving a weekly service.

The s.s. Robert G. Cann, owned by Hugh Cann & Sons, Yarmouth, N.S., which grounded at the entrance to Canso harbor during March, was released about the end of that month by the Atlantic Salvage & Wrecking Co.'s s.s. La Canadienne, and towed into Canso for temporary repair, to allow her being taken to Halifax, where permanent repairs were undertaken.

The French s.s. Barr was destroyed by fire at Dartmouth, N.S., Apr. 17. She was a wooden ship of 1,500 tons, valued at approximately $400,000, and is regarded as a total loss. She was built recently by the National Shipbuilding Corporation, Three Rivers Shipyards Division, Three Rivers, Que., and was to have sailed from Halifax for Newport, Eng., Apr. 19.

The master of the sealing steamship Terra Nova has entered action, in Newfoundland, against members of his crew, for a breach of the Merchant Shipping Act, in refusing to remain on the sealing grounds longer than the time provided for when they signed articles. Generally, the sealing season has been somewhat of a failure, the catch being exceedingly poor, being less than 35,000 seals for nine ships. It was hoped to better the catch by making a longer stay on the sealing grounds, but the crews refused.

## Province of Quebec.

The Dominion Public Works Department has received tenders for repairs to dredge no. 1 (Quinlan & Robertson), which is lying in the Montreal dry dock.

An order in council has been passed disbanding the Quebec Harbor Commission, following on the resignation of the chairman, Hon. D. O. L'Esperance, and providing for the constitution of a new commission. It is reported that Sir David Watson will be chairman, and General Tremblay and A. S. Gravelle, members, of the new commission.

The St. Lawrence channel was reported to be practically clear of ice from the Victoria Bridge, Montreal, to the sea, Apr. 12, and it was expected that the Marine Department would commence laying buoys between Montreal and Quebec during the third week of April. The department's steamships Dollard and Shamrock, with their attendant scows, and steam barges, were being held at Sorel in readiness for the work.

The longshoremen at Montreal have made an agreement with the Shipping Federation of Canada for this year, providing for an increase of 10c an hour in wages for day work, and time and a half for night work. The working day consists of 10 hours, with a 9 hour shift at night. For day workers the new rate is 70c an hour. For handling nitrate and bulk sulphur the rate is 85c an hour, and also for grain trimming and packing. Coal handling is to be paid at the rate of 75c an hour.

Trawler Sales.—The Anderson Co. of Canada has sold the Admiralty trawlers T. R. 41 to Percheries et Armements La Rachelle Ocean, Havre, France, and the T. R. 44 to Anglo-Newfoundland Development Co., Grand Falls, Nfld. The first named trawler was sent to Boulogne, France, in January, as an exhibit ship.

## Vessels Added to and Deducted From the Canadian Register During January and February, 1920.

| | Steam. No. | Steam. —Tonnage— Gross. | Steam. —Tonnage— Registered. | Sailings. No. | Sailings. —Tonnage— Gross. | Sailings. —Tonnage— Reg'red |
|---|---|---|---|---|---|---|
| **Added.** | | | | | | |
| Built in Canada | 15 | 18,622 | 11,397 | 17 | 3,070 | 2,875 |
| Purchased from foreigners | 8 | 9,125 | 6,142 | 6 | 3,157 | 3,044 |
| Transferred from United Kingdom | 2 | 9,133 | 5,332 | — | — | — |
| Transferred from British Possessions | 2 | 470 | 205 | — | — | — |
| New registers | 4 | 179 | 107 | 3 | 604 | 604 |
| Totals | 31 | 37,529 | 23,183 | 26 | 6,831 | 6,523 |
| **Deducted.** | | | | | | |
| Wrecked or otherwise lost | 10 | 4,323 | 2,932 | 47 | 5,215 | 4,705 |
| Broken up or unfit for use | 22 | 1,094 | 683 | 51 | 2,081 | 2,064 |
| Sold to foreigners | 5 | 14,004 | 9,076 | 2 | 440 | 440 |
| Transferred to United Kingdom | 2 | 793 | 459 | — | — | — |
| Transferred to British possessions | 2 | 650 | 560 | 6 | 1,147 | 951 |
| New registers | 4 | 634 | 428 | 2 | 43 | 40 |
| Totals | 45 | 21,498 | 14,138 | 108 | 8,926 | 8,200 |

## Ontario and the Great Lakes.

The Welland Canal was opened for traffic Apr. 19.

The Sault Ste. Marie canals were opened for traffic Apr. 19, the s.s. Harvester being the first ship to lock through.

A Dominion order in council has been passed approving regulations for operation of ferry service across the Niagara River, between Fort Erie, Ont., and Buffalo, N.Y.

An action brought by F. Torno to determine the ownership of the s.s. Chicora, formerly owned by Canada Steamship Lines Ltd., was dismissed at Toronto, the plaintiff having to pay costs.

The name of the Ontario Government's s.s. Captain Visger, registered at Kingston, no. 137,983, and operated by the Ontario Game and Fisheries Department, has been changed to Gray Bird.

The Detroit and Windsor Ferry Co. is being asked by the Windsor Council for a more adequate service, and if some improvement is not made, it is intimated that a municipal ferry line will be started.

The s.s. H. M. Pellatt, which, as announced in our last issue, has been sold by Canada Steamship Lines, Ltd., to Belgian parties, is now owned by the Societe Belge d'Armement Maritime, Antwerp, Belgium.

A committee representing the Rochester, N.Y., chamber of commerce, has asked Canadian Steamship Lines, Ltd., that steamships running between Hamilton, Toronto, Kingston, and Montreal, call at Rochester, each way.

Canada Steamship Lines, Ltd., has changed the names of its steamships, Murray Bay, Rochester, Syracuse, and St. Irenee, to Cape Diamond, Cape Eternity, Cape Trinity and Cape St. Francis, respectively.

A press report stating that the Northern Navigation Co. will dock its steamships at Point Edward this year, instead of at Sarnia, is to some extent misleading. The company has used Point Edward as a terminal for its steamships since 1918, they only going to the Sarnia dock occasionally. The company calls its terminal, Sarnia, (Point Edward dock).

The Dominion Government steamships Grenville and Lambton arrived at Parry Sound, Apr. 20, from Midland, thus opening navigation between these points. The Great Lakes Transportation Co.'s s.s. Glenorchy cleared from Goderich on the same date for Cleveland, Ohio, to load coal. Considerable ice was encountered between Midland and Parry Sound, but Goderich harbor was reported to have been clear of ice for several days.

The Great Lakes Transportation Co.'s s.s. Glenfoyle, registered at Midland, Ont., has been removed from the Canadian register, and her register closed, she having been lost while in Admiralty service. She was built at Londonderry, Ireland, in 1913, and was screw driven by engine of 97 h.p., her dimensions being,—length 250 ft., breadth 42.5 ft., depth 17.4 ft.; tonnage 1,680 gross, 1,051 registered.

The s.s. Empress, owned by the Central Railway Co. of Canada, has been sold by the receiver for the company to W. H. Dwyer, Ottawa, Ont. She was built at Montreal, in 1873, and was originally named Peerless. She was rebuilt in 1886, when she was renamed Empress. Her dimensions are,—length b.p. 185 ft. 3 in., breadth moulded 27 ft. 6 in., depth moulded 16 ft. 1 in. She is paddle wheel driven by engine of 152 n.h.p.

The acting Minister of Public Works is reported to have stated to a deputation from London, St. Thomas, Elgin and Middlesex, Ont., Apr. 15, that the deepening and widening of the outer harbor at Port Stanley will be commenced as soon as possible, the programme including extensive dredging and the removal of the submerged east pier, which has been a menace to navigation there for some years.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above mean sea level for March as follows:—Superior, 601.92; Michigan and Huron, 580.00; St. Clair, 574.00; Erie, 570.85; Ontario, 245.05. Compared with the average March stages for the past 10 years, Superior was 0.28 ft. above; Michigan and Huron, no change; Erie, 0.90 ft. below, Ontario 0.62 ft. below.

The Northern Navigation Co.'s s.s. Noronic is to be taken to Detroit, Mich., May 1, where she will be utilized as an hotel until June 9, when she opens her summer service by taking members of the Detroit Board of Commerce on their annual lake trip. If the Noronic is a success as an hotel in the early part of the season, the company will probably again place her at Detroit, for similar purposes, from the close of the summer season until the end of November.

Canada Steamship Lines, Ltd., which, as announced in a previous issue, has bought the steamships Nipigon and Wyoming from U.S. owners, has transferred them to the Canadian register, the former under the name of Maplehill and the latter as Wyoming. The Maplehill was built at St. Clair, Mich, in 1883, and is screw driven by engine of 79 h.p., her dimensions being,—length 194.2 ft., breadth 33.9 ft., depth 13.7 ft., tonnage 925 gross, 560 registered. The Wyoming was built at Buffalo N.Y., in 1887, and is screw driven by engine of 109 h.p., her dimensions being,—length 250.4 ft., breadth 40.1 ft., depth 14.6 ft.; tonnage 1,492 gross, 911 registered.

It is reported that Belleville business men are negotiating with Canada Steamship Lines, Ltd., for the purchase of the s.s. Brockville, to be operated in passenger service between Belleville and Montreal, during the forthcoming season. The s.s. Brockville has an oak hull and was built at Toronto in 1898. Her dimensions are,—length 105 ft., breadth 21 ft. 5 in., depth 5 ft. 7 in., tonnage 191 gross, 88 registered. She is equipped with fore and aft compound engine with cylinders 9 and 18 in. diar., by 14 in. stroke, 140 i.h.p., at 165 r.p.m., supplied with steam by one firebox boiler 4 ft. 9 in. diar. by 8 ft. long, at 165 lb., by Polson Iron Works Ltd., Toronto.

The s.s. Oceanica, has been bought from U. S. owners by W. Ziff, Montreal. She was owned formerly by Tonawanda Iron and Steel Co., Tonawanda, N.Y., and has an oak hull, with diagonal strapping on the frames, steel boiler house, steel arches, bow sheathed for navigation in ice, windlass between decks, with no efficient bulkhead abaft. She was built at West Bay City, Mich., in 1881, when she was named Sevona. She underwent considerable repairs in 1913. Her dimensions are,—length b.p. 263 ft., breadth moulded 37¼ ft., depth moulded 21 ft., tonnage 1,409 gross, 1,241 net. She is equipped with fore and aft compound engines, with cylinders 27 and 50 in. diar. by 40 in. stroke, 600 h.p., at 80 r.p.m., supplied with steam by two firebox boilers at 95 lb.

The Kingston Navigation Co. is being formed at Kingston, Ont., by a number of members of the Board of Trade, for the operation of a steamship between Kingston and Ogdensburg, N.Y., during the summer. It is stated that the s.s. St. Lawrence has been bought from Canada Steamship Lines, Ltd., and that she will be transferred from U.S. to Canadian register. She was built at Clayton, N.Y., in 1884, and is of composite construction, of the single deck type, with the following dimensions,—length b.p. 154 ft., breadth moulded 21 ft., depth moulded 7 ft., tonnage 312 gross, 188 net. She is equipped with beam condensing engine having cylinder 32 in. diar. by 72 in. stroke, 350 i.h.p., at 38 r.p.m., supplied with steam by a single fire box boiler 8 ft. diar. by 16 ft. 2 in. long, at 87 lb.

The s.s. Viking, which was bought some time ago by interests associated with the Mathews Steamship Co., Toronto, from U. S. owners, has been transferred to the Canadian register, and to Mathews Steamship Co.'s ownership, under the name of Cylaton. She was built at Buffalo, N.Y., in 1889, and is a steel ship of the well deck type, with double bottom for watertight ballast, 3 watertight bulkheads, steel boiler house, steam pump wells, electric lighting, and hatches spaced 24 ft. centers. He dimensions are,—length b.p. 217 ft., breadth moulded 37 ft., depth moulded 18 ft. She is equipped with fore and aft compound engines, with cylinders 23 and 48 in. diar. by 42 in. stroke, 365 i.h.p. at 85 r.p.m., supplied with steam by two firebox boilers, each 8½ ft. diar. by 14 ft. long, at 125 lb.

Dredging operations are being carried on in Toronto harbor by Canadian Stewart Co. in connection with the harbor improvements. This necessitates the maintenance of a pipe line across the western entrance channel, from the opening of navigation until about May 21, with the exception of such days as weather conditions prevent the use of the eastern entrance channel. In the event of a heavy easterly wind making the approach through the eastern entrance difficult, the pipe line will be broken temporarily to provide an opening for vessels at the western entrance, the harbor master deciding as to the necessity for such break. Sngnals, for the use of the western entrance during heavy weather, are 2 long and 2 short blasts of the whistle at 3 minutes intervals, at least 10 minutes before reaching the piers. The pipe line, through which dredge material is discharged, will be kept well lighted at night by the contractors.

The barge Arthur, owned by Connelly Bros., Buffalo, N.Y., was sold recently to Webster Steamship Co., Montreal, who have traded her for the barge Valencia, owned by Sincennes-McNaughton Line, Ltd., Montreal, and the last mentioned company has bought the barge Nellie Redington from Connelly Bros., Buffalo, N.W. The Arthur was built at Detroit, Mich, in 1871, and was originally the schooner D. P. Rhodes, and underwent large repairs in 1912. Her hull is of oak and she has the following dimensions,—length b.p. 216 ft., breadth moulded 35 ft., depth moulded 16 ft., tonnage 891 net. The barge Valencia was built at Garden Island, Ont., in 1888, and has an oak hull of the following dimensions,—length b.p. 178 ft., breadth moulded 30 ft. 8 in., depth moulded 13 ft. 2 in., tonnage 443 net. She was at

one time owned by Montreal Transportation Co., and is classified for service on Lake Ontario and St. Lawrence River and canals. The barge Nellie Redington was built of oak, at Cleveland, Ohio, in 1872, and underwent large repair in 1914. Her dimensions are,—length b.p. 205 ft., breadth moulded 33 ft., depth moulded 16 ft., tonnage 775 net.

## Manitoba, Saskatchewan and Alberta.

It is reported that a waterways association is being formed in Winnipeg, to encourage the development of waterways in the Prairie Provinces. It is stated that one object is to make the Saskatchewan River navigable for the transportation of coal from the western mines.

Lamson and Hubbard Canadian Co., Ltd. has been granted supplementary letters patent decreasing its capital stock to 10,000 shares of preferred stock of $100 each, and 15,000 shares of common stock without nominal or par value, and increasing its preferred capital stock to 15,000 shares of $100 each, and its common capital stock to 33,750 shares without nominal or par value, provided that it carry on business with a capital of $1,668,750. The company is engaged chiefly in the fur trade, and operates steamboats on the Athabasca, Slave and Mackenzie Rivers.

## British Columbia and Pacific Coast.

The Consolidated Whaling Corporation's 8 steamships have all been overhauled and refitted at the company's headquarters at Point Ellice, Victoria, and are in readiness for the opening of the Whaling season early in May.

The Vancouver Harbor Commissioner's agreement with the Great Northern Ry. Co. for the acquisition of land as a site for a pier to be built on Burrard Inlet, and to be known as the Ballantyne pier, has been submitted to the Dominion Government for approval.

The s.s. Tactician, which was docked at Yarrows yard, Esquimalt, Apr. 10, to have her rudder repaired by electric welding, cleared from the yard again, Apr. 13, this being the first large electric welding job carried out there since the installation of a complete new electric welding equipment.

The s.s. Robert Dunsmuir, owned formerly by Ocean Falls Co., Vancouver, B.C., has been dismantled and removed from the Canadian register. She was built at New Westminster, B.C., in 1883, and was screw driven by engine of 18 h.p., her dimensions being,—length 105 ft., breadth 17.5 ft., depth 6.7 ft.; tonnage 152 gross, 96 registered.

The C.P.R. British Columbia Coast Service recently declined to put any ships in the ferry service between Port Angeles and Victoria during the coming summer, as all its available ships will be heavily engaged on the regular routes. The Puget Sound Navigation Co. has, however, announced that it will put on a ferry service between these points.

The Kingsley Navigation Co.'s s.s. E. D. Kingsley arrived at Victoria, B.C., Apr. 10, after a voyage from Fort William, Ont., through the Great Lakes, the St. Lawrence River, Gulf, Atlantic Ocean, occupying about 4½ months. She was built by Canadian Car and Foun-

## Vessels Registered in Canada During January and February, 1920.

In oompiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing vesses of less than 100 tons register.

STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|
| 141568 | Canadian Importer(1) | Vancouver, B.C. | Vancouver, B.C. 1919 | 400.0 | 52.4 | 28.8 | 5465 | 3400 | 282 Sc. | Minister of Marine, Ottawa. |
| 141585 | Canadian Trapper(1) | Montreal | Lauzon, Que. 1919 | 331.3 | 46.8 | 23.3 | 3600 | 2183 | 231 Sc. | " " " |
| 141482 | Canadian Planter(1) | Montreal | Montreal 1919 | 400.3 | 52.4 | 28.6 | 5399 | 3333 | 266 Sc. | " " " |
| 141564 | Canadian Raider(1) | Vancouver, B.C. | North Vancouver, B.C. 1919 | 331.0 | 46.7 | 23.2 | 3384 | 2052 | 231 Sc. | " " " |
| 137983 | Captain Visger | Kingston, Ont. | Alexandria Bay, N.Y. 1895 Gananoque, Ont. 1918 | 78.1 | 12.4 | 4.4 | 39 | 11 | 13½ Sc. | Hon. F. G. Macdiarmid, Toronto. |
| 108769 | Celestial Empire(2) | Vancouver, B.C. | Hull, Eng. 1897 | 121 2 | 21.0 | 11.3 | 204 | 80 | 58 Sc. | The Canadian Fishing Co., Vancouver, B.C. |
| 140998 | Conestoga | Toronto | Cleveland, Ohio 1878 | 252.0 | 36.0 | 15.0 | 2008 | 1531 | 96 Sc. | Lake Ports Navigation Co., Sarnia, Ont. |
| 91527 | Flamingo | Vancouver, B.C. | Hull, Eng. 1885 | 137.0 | 21.5 | 11.2 | 266 | 125 | 80 Sc. | The Canadian Fishing Co., Vancouver, B.C. |
| 141574 | Herbert Green | Weymouth, N.S. | Gilberts Cove, N.S. 1919 | 116.0 | 28.4 | 10.6 | 283 | 205 | 16½ Sc. | B. Melanson, Gilberts Cove, N.S. |
| 137447 | Lord Strathcona(1) | Montreal | Sunderland, Eng. 1915 | 455.0 | 58.0 | 31.0 | 7335 | 4184 | 613 Sc. | Lord Strathcona Steamship Co., Montreal. |
| 141454 | Maggie Marshall | Halifax, N.S. | Manistee, Mich. 1873 | 150.0 | 30.0 | 11.3 | 570 | 385 | 54 Sc. | Maritime Wrecking & Salvage Co., Montreal. |
| 141588 | Maplehill(3) | Montreal | St. Clair, Mich. 1883 | 194.2 | 33.9 | 13.7 | 925 | 560 | 79 Sc. | Canada Steamship Lines, Ltd., Montreal. |
| 138860 | Richard B. | Port Arthur, Ont. | Vermillian, Ohio. 1901 | 75.0 | 17.0 | 8.5 | 73 | 40 | 16 Sc. | Russell Timber Co., Port Arthur, Ont. |
| 141505 | Saskatoon | Montreal | Sunderland, Eng. 1919 | 250.2 | 42.8 | 16.4 | 1798 | 1148 | 122 Sc. | Canadian Maritime Co., Montreal. |
| 141354 | T. R. 41 | Ottawa | Port Arthur, Ont. 1918 | 125.0 | 23.4 | 13.5 | 290 | 105 | 61½ Sc. | Minister of Naval Service, Ottawa. |
| 138859 | Vinmount(4) | Port Arthur, Ont. | Cleveland, Ohio. 1889 | 260.0 | 38.0 | 21.0 | 1887 | 1107 | 107 Sc. | Montreal Transportation Co., Montreal. |
| 141589 | Wyoming | Montreal | Buffalo, N.Y. 1887 | 250.4 | 40.1 | 14.6 | 1492 | 911 | 109 Sc. | Canada Steamship Lines, Ltd., Montreal. |

SAILING.

| No. | Name | Port of Registry | Big | Where and when built | Length | Breadth | Depth | Gross Tons | Tons Reg. | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141557 | A.F.P. 2 | Vancouver, B. C. | Scow | Vancouver, B. C. 1911 | 79.7 | 26.0 | 7.0 | 119 | 119 | H. Rendell, Vancouver, B.C. |
| 141558 | A.F.P. 3 | " | " | " 1911 | 80.3 | 26.0 | 7.1 | 125 | 125 | " " |
| 141599 | A.F.P. 4 | " | " | " 1911 | 79.7 | 26.2 | 7.0 | 125 | 125 | " " |
| 141500 | A.F.P. 5 | " | " | " 1911 | 80.6 | 26.3 | 7.0 | 129 | 129 | " " |
| 141561 | A.F.P. 6 | " | " | " 1911 | 80.8 | 25.8 | 6.9 | 116 | 116 | " " |
| 141562 | A.F.P. 7 | " | " | " 1911 | 84.0 | 26.2 | 6.5 | 123 | 123 | " " |
| 130277 | Athabasca River(1) | Winnipeg | " | Athabasca Landing, Alta. 1912 | 136.0 | 28.0 | 3.6 | 341 | 341 | Hudson's Bay Co., London, Eng. |
| 141584 | B. Huber | Montreal | Barge | Tonawanda, N.Y. 1887 | 96.2 | 17.9 | 7.4 | 125 | 125 | R. J. Lough, St. Hilaire, Que. |
| 141506 | Chaland 25 | Quebec, Que. | Scow | Quebec, Que. 1919 | 80.2 | 30.4 | 6.6 | 140 | 140 | Lachance, Ltd., Quebec, Que. |
| 141507 | Challand 26 | " | " | " 1919 | 80.2 | 30.4 | 6.6 | 143 | 143 | " " |
| 141555 | Chas. F. Gordon | Halifax, N.S. | Schr | Weymouth, N.S. 1919 | 147.0 | 34.8 | 13.0 | 493 | 453 | R. G. Beasley, M.O., Halifax, N.S. |
| 141417 | Enid E. Legge | Lunenburg, N.S. | " | Mahone Bay, N.S. 1919 | 118.1 | 27.6 | 10.9 | 272 | 233 | J. T. Moulton, Burgeo, Nfld. |
| 141565 | General Fairchild | Vancouver, B.C. | Barge | Freeport, Me. 1874 | 203.4 | 38.8 | 24.3 | 1341 | 1312 | Coastwise Steamship & Barge Co., Vancouver, B.C. |
| 141258 | J. Duffy | La Havre, N.S. | Schr | Saulnierville, N.S. 1919 | 115.0 | 26.9 | 10.6 | 115 | 115 | J. L. Spindler and J. E. Backman, La Havre, N.S. |
| 141556 | Louisiana | Vancouver, B.C. | Barge | Bath, Me. 1873 | 202.4 | 40.0 | 23.8 | 1346 | 1309 | Coastwise Steamship & Barge Co., Vancouver, B.C. |
| 141567 | M.W.W. No. VI | Vancouver, B.C. | Scow | New Westminter, B.C. 1919 | 96.3 | 34.0 | 8.3 | 234 | 234 | McNeill, Welch & Wilson, Ltd., Vancouver, B.C. |
| 141582 | Maggie J. Brett | Montreal | Barge | Whitehall, N.Y. 1901 | 96.4 | 17.8 | 7.4 | 120 | 106 | Richelieu Transportation Co., Montreal. |
| 121772 | Marvyl(1) | Winnipeg | " | The Landing, Man. 1905 | 120.0 | 26.0 | 8.0 | 225 | 225 | Northern Fish Co., Selkirk, Man. |
| 141390 | Maxwell R. | LaHavre, N.S. | Schr | Chested Basin, N.S. 1919 | 118.2 | 27.6 | 10.4 | 153 | 106 | C. H. Ritcey, M.O., Riverport, N.S. |
| 141622 | Minas Emperor(2) | Parrsboro, N.S. | " | U.S. | 48.0 | 23.5 | 4.6 | 89 | 89 | M. Blenkhorn, Parrsboro, N.S. |
| 141389 | Mona Marie | LaHavre, N.S. | " | Shelburne, N.S. 1920 | 126.6 | 26.6 | 10.5 | 170 | 170 | L. Ritcey, M.O., Riverport, N.S. |
| 141583 | O. L. Bourdon | Montreal | Scow | Durhamville, N.Y. 1894 | 95.8 | 17.8 | 8.5 | 136 | 123 | Richelieu Transportation Co., Montreal. |
| 141563 | Spraydrift | Vancouver, B.C. | Sloop | Vancouver, B.C. 1912 | 30.0 | 8.9 | 3.3 | 5 | 5 | G. B. Warren, Vancouver, B.C. |
| 138656 | Susan Cameron | Pictou, N.S. | Schr | Tusket, N.S. 1919 | 163.7 | 36.3 | 13.1 | 601 | 558 | W. McNeil, New Glasgow, N.S. |
| 131060 | Thunder Bay | Montreal | Barge | Cleveland, Ohio 1895 | 302.0 | 40.2 | 25.0 | 2144 | 1951 | H. B. Smith, Owen Sound, Ont. |

dry Co. at Fort William, last year, and will be used in the British Columbia coasting trade.

The U. S. Federal Court at Seattle, Wash., dealt with claims recently, covering personal effects of persons lost with the C. P. R. s.s. Princess Sophia, which founde in the Lynn Canal Oct. 24, 1918. The effects were recovered by the Deep Sea Salvage Co., and many of the items were unclaimed. The Dep Sea Salvage Co. is offering stock for sale, in a company to be formed for salvaging the wreck.

The Canadian Fishing Co., Vancouver, B.C., has transferred its steamships Celestial Empire and Flamingo, from the British to the Canadian register. The Celestial Empire was built at Hull, Eng., in 1897, originally named Jupiter, and lengthened there in 1902. She is screw driven by engine of 58 h.p. and has the following dimensions,—length 121.2 ft.; breadth 21 ft.; depth 11.3 ft.; tonnage 204 gross, 80 registered. The Flamingo was built at Hull, Eng., in 1885, and is screw driven by engine of 80 h.p., her dimensions being, — length 137.9 ft.; breadth 21.5 ft.; depth 11.2 ft.; tonnage 266 gross, 125 registered.

The Grand Trunk Pacific Coast Steamship Co. inaugurated a bi-weekly steamship service between Seattle, Wash., and Prince Rupert, Apr. 21, with the steamships Prince Rupert and Prince George, the former leaving Seattle at 11 p.m. Sundays and the latter 11 p.m. Wednesdays, returning there 4 p.m. Sundays and 4 p.m. Wednesdays, respectively. Calls will be made at Victoria, Vancouver, Ocean Falls, and Swanson Bay. The s.s. Prince Albert is operating between Prince Rupert and Queen Charlotte Island ports.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John was damaged and beached off Deadtree Point, Graham Island, towards the end of March in a collision with the company's s.s. Prince Albert. She was subsequently floated and taken to Prince Rupert by the salvage steamship Algerine. It is stated that tenders have been asked for the repairs, which will include the straightening of several plates, relaying of a new upper deck, and the replacing of all cabin work. There appears to have been no damage to machinery, but the cargo was practically a complete loss.

The auxiliary powered schooner Laurel Whalen arrived in Vancouver, Apr. 10, after an absence of two years, during which she had considerable adventure. She was one of 12 similar ships built by Cameron-Genoa Mills Shipbuilders Ltd. for Canada West Coast Navigation Co. Ltd. She sailed from Victoria about 2 years ago for Australia, with lumber, and later cleared from Adelaide with wheat for British Columbia, but off New Zealand broke her crank shaft and put into Auckland for repairs. On again sailing she ran into heavy storms, and on Aug. 25, 1919, was compelled to put into Papeete, in leaking condition, and as she could not be repaired there, her cargo of wheat was discharged, and arrangements were made for towing her back to her home port. The towing was done by the tug Hercules, and lasted from Mar. 3 to Apr. 10, at an approximate cost of $35,000.

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Steamboat Inspection.—The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain an item of $105,470 for steamboat inspection.

## Dominion Government Aid for Wooden Shipbuilding in British Columbia.

Canadian Railway and Marine World for February contained an order in council of Dec. 24, 1919, granting aid for the construction of four wooden sailing ships in British Columbia, to the extent of $700,000. This order has been supplemented by an agreement, dated Mar. 16, between the Dominion Government and Victoria (B.C.) Shipowners, Ltd., a company incorporated under the British Columbia Companies Act, by which the company agrees to build and equip in the Cholberg shipyard, Victoria, or such other shipyard as may be approved by the Finance Minister, and to have completed within 12 months of the commencement of construction, 4 sailing ships of barkentine rig, each with a cargo capacity of 2,400 d.w. tons, or 1,500,000 ft. b.m. firm lumber, at an estimated cost of $250,000 each. Contracts, plans, specifications, etc., are all subject to the Minister's approval, or of a marine architect to be named by him. Advances on account of the cost of construction, not exceeding $175,000 foreach ship, will be made from time to time on the architect's certificate that the expenditure and payment has been provided for to the extent of at least $75,000 on the construction of the ship, and that in his judgment the further expenditure incurred for material and labor, and the progress of the work, are sufficient to justify the advances named in his certificate. These advances will be secured by a first mortgage, or mortgages, on the ships, with interest at 6% per annum. The owners shall expend in construction and equipment of these ships, not less than $75,000 each, or $300,000 in all, the intention being that the company shall assume the cost to that extent, the government to advance the balance of cost, not exceeding $175,000, for each ship. and if the cost of the building and equipping any one of the ships shall exceed $250,000, such excess shall be paid by the company. It is agreed that for determining the amount of the advances, if any portion of the cost be represented by the delivery of lumber required, the prices shall not exceed the following, f.o.b. cars at Victoria:—

| | |
|---|---|
| Framing grade | $28 per m. |
| Merchantable | 30 " |
| Planking | 50 " |
| Ship decking | 65 " |

Additions as per Standard Fir Timber list no. 2 B.C., average length 30 ft.

Payment for other materials to be allowed at not exceeding lowest prices available, as ascertained by competitive bids, all material to be delivered and accepted in good condition. It is also provided that the net operating revenue from the operation of the ships when completed, shall first be applied in payment of interest on the government advances, and when sufficient has been set aside for this purpose in any year, the company may appropriate out of the revenue earned by each ship in that year, $4,500, and the balance of the net earnings of each ship in any year shall be paid on account of money advanced by the Government, and interest shall be chargeable only on the balances remaining unpaid. It is agreed that returned soldiers shall be given employment on the building of these shops to the fullest extent practicable, and that at least 60% of the total number of men engaged at any time thereon, shall be returned soldiers. All men required shall be employed through the Dominion representative in B. C. Government Employment Agency, and as soon as the work is sufficiently advance, at least 235 men shall be employed on each ship.

If the company, by reason of bankruptcy, fire, or any other causes, fails, or is unable to complete the ships, or, if in the opinion of the architect it is guilty of unreasonable delay, the government may take immediate possession of the ships, and all material intended for them, and the mortgages shall become due any payable, and all powers in connection therewith shall be transferred to the government. The agreement is signed on behalf of the company, by Clarence Hoard, Vice-President, and Edwin Tomlin, Secretary-Treasurer.

## Mariners' Certificates of Service Requirements Amended.

A bill to amend the Canada Shipping Act was passed by the House of Commons, Apr. 8, repealing R.S.C. 1906, chap. 113, secs. 85 to 89 and sec. 91 containing the conditions relative to the issuing of certificates of service to masters and mates of seagoing and inland waters shipping, and substituting therefor the following:—

"85. Every British subject who, (a) served as a master or mate of a seagoing or coasting sailing vessel of over 75,000 gross tons, before Jan. 1, 1920, for a full period of 12 months within 10 years immediately next preceding the date of his application for a certificate of service; (b) produces satisfactory evidence of his sobriety, experience, ability and general good conduct on board ship; and, (c) passes the sight test and the prescribed examination in signalling; shall be entitled, on payment of the prescribed fee, to a certificate of service as a master or mate of a square rigged or fore-and-aft rigged seagoing or coasting sailing vessel not exceeding 750 registered tonnage, according as his service has been (a) as master or as mate, (b) on a seagoing or on a coasting sailing vessel, (c) on a square rigged sailing ship or on a fore-and-aft rigged sailing vessel.

"91. In every such certificate of service the name, place and date of birth of the person to whom the same is issued shall be stated, and each certificate shall specify whether the holder is entitled to act as master or mate, whether the certificate is for seagoing vessels or for vessels in the coasting trade, and whether for square rigged sailing vessels or for fore-and-aft sailing vessels, and that it is not for any vessel exceeding 750 registered tonnage."

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**Black Star Line of Canada, Ltd.**, has been incorporated under the Dominion Companies Act, with authorized capital of $1,000,000, and office at Montreal, to own and operate steam and other ships and to carry on a general navigation and transportation business. The incorporators are: F. H. Markey, K.C.; W. W. Skinner, K.C.; G. G. Hyde, K.C.; R. C. Grant, and R. J. Forester, Montreal.

Concrete Ships Failures.—Sir G. B. Hunter, Managing Director, Swan Hunter, and Wigham Richardson Ltd., English shipbuilders, is reported, in a London press cablegram, to have stated that concrete ships are a complete failure, that they cost twice as much as steel ships, and take twice the time to build, and that his company has discontinued their construction finally.

# The Minister of Marine on the Government's Shipbuilding Programme.

When the House of Commons went into committee of supply on Mar. 23, on the estimates for the year ending Mar. 31, 1921, on the item Marine Department Government shipbuilding programme, amount required for the construction of ships in accordance with Government programme, $20,000,000, the Minister of Marine, Hon. C. C. Ballantyne, said:—This amount, $20,000,000, is being asked for in order to complete the Government merchant marine shipbuilding programme, and part of the appropriation is a re-vote from last year. If Parliament gives its consent to this appropriation, then the government have no further estimates to bring down in connection with the building of steel freight ships. I will refer briefly to the condition of the shipbuilding industry from 1875 up to 1919 and give a comparative statement showing the number and tonnage of ships on the Canadian registry books on Dec. 31 as follows:—

| Year. | Number. | Net tonnage. |
|---|---|---|
| 1875 | 6,952 | 1,205,565 |
| 1885 | 7,315 | 1,231,856 |
| 1895 | 7,262 | 825,776 |
| 1905 | 7,325 | 669,825 |
| 1915 | 8,757 | 929,312 |
| 1919 | 8,573 | 1,091,780 |

Members will note the great shrinkage in shipbuilding in Canada over the periods which I have just mentioned. During the last 10 years, while the quantity is small, the ships built were of both classes, wood and steel. In 1919, the business revived again, on account of the war, and 8,573 ships were built with a net tonnage of 1,091,780.

Before the war the world's merchant shipping was roughly 43,000,000 tons, of which Great Britain owned approximately 23,250,000 tons. Owing to the great destruction by submarines during the war, the total world tonnage lost by enemy action was 15,000,000 tons gross, and of these losses British merchant tonnage comprised 2,479 ships with a gross tonnage of 7,759,090 tons, and 14,287 lives were lost. 675 fishing ships were lost, with a gross tonnage of 71,765 tons, and in addition 1,885 British ships, with a total tonnage of 8,007,967 tons were damaged and temporarily put out of commission, involving the loss of 592 lives. May I be permitted to pay a tribute—which I am sure will be concurred in by all members and in which I am sure I am expressing the opinion of Parliament—to the heroic men who manned the merchant marine, and so many of whom gave up their lives during the recent war?

I wish to state very briefly, too, the reason why the government decided to enter upon a shipbuilding policy. In a word, the reason was simply this, that, owing to the great loss of world tonnage and the imperative need of Canada creating, owning and operating a merchant marine of her own, and also in view of the fact that the government owned a very large system of railways which, when the Grand Trunk is formally taken over, will comprise some 22,000 miles, it was a matter of very urgent importance that Canada should own her own merchant marine, to do work in conjunction with our large transcontinental railway system, and also for the purpose of expanding Canada's export business. Later on, I shall have something more to say in this regard, but I will now pass on to the contracts that have been let. The following table shows the several classes of vessels built and in course of building, they being divided into six types, as follows:

| Type. | Tonnage. | No. |
|---|---|---|
| 1 | 10,800 | 2 |
| 2 | 8,300 | 25 |
| 3 | 5,100 | 8 |
| 4 | 4,500 | 8 |
| 5 | 3,400 to 3,900 | 17 |
| 6 | 2,800 | 3 |
| Total | | 63 |

The total net tonnage is 380,435. The contracts are spread over a period from March or April, 1918, up to within a few weeks ago. The average cost of these 63 ships, including the contracts that were let during the war and since the armistice was signed, is $191.92 a ton. During the war contracts were let at from $180 a ton for the large ships to $215 a ton for the lake size. Since the armistice has been signed, we have been able to contract for the large size at $167.50 a ton and for the lake size at $180. The contracts have been placed with the following yards:

| | Ships. | Tons. | Tons. | Tons. |
|---|---|---|---|---|
| Canadian Vickers, Ltd.— | | | | |
| | 2 | 4,575 | 9,150 | |
| | 10 | 8,390 | 83,900 | |
| | | | | 93,050 |
| Harbour Marine Company, Victoria— | | | | |
| | 2 | 8,390 | | 16,780 |
| Collingwood Shipbuilding Co., Collingwood— | | | | |
| | 7 | 3,890 | | 27,230 |
| Collingwood Shipbuilding Co., Kingston— | | | | |
| | 2 | 3,890 | | 7,780 |
| Port Arthur Shipbuilding Co.— | | | | |
| | 4 | 3,400 | 13,600 | |
| | 2 | 4,375 | 8,750 | |
| | 1 | 3,890 | 3,890 | |
| | | | | 26,240 |
| Halifax Shipyards, Ltd.— | | | | |
| | 2 | 10,800 | 21,600 | |
| | 2 | 8,390 | 16,780 | |
| | | | | 38,380 |
| Tidewater Shipbuilders Ltd.— | | | | |
| | 4 | 5,100 | | 20,400 |
| Davie Shipbuilding & Repairing Co.— | | | | |
| | 2 | 5,100 | 10,200 | |
| | 1 | 8,390 | 8,390 | |
| | | | | 18,590 |
| British American Shipbuilding Co.— | | | | |
| | 2 | 4,575 | | 9,150 |
| Midland Shipbuilding Co.— | | | | |
| | 1 | 3,890 | | 3,890 |
| Dominion Shipbuilding Co.— | | | | |
| | 2 | 3,500 | | 7,000 |
| J. Coughlan & Sons— | | | | |
| | 6 | 8,390 | | 50,340 |
| Wallace Shipyards, Ltd.— | | | | |
| | 2 | 4,575 | 9,150 | |
| | 2 | 5,100 | 10,200 | |
| | 2 | 8,390 | 16,780 | |
| | | | | 36,130 |
| Prince Rupert Shipbuilding Co.— | | | | |
| | 2 | 8,390 | | 16,780 |
| Nova Scotia Steel & Coal Co.— | | | | |
| | 3 | 2,800 | | 8,400 |

Seven ships have been completed of type no. 2, 8,300 tons; 4 have been completed of type no. 3, 5,100 tons; 4 have been completed of type no. 4, 4,500 tons; 8 have been completed of type no. 5, 3,400 to 3,900 tons, and 1 has been completed of type no. 6, 2,800 tons. Of the 8,300-ton type, 5 are being equipped with oil fuel apparatus and 13 of the same type are being fitted with refrigerating space.

The expenditure to date is as follows: Payments to April, 1919, $19,510,322.35; payments from April, 1919, to Mar. 1, 1920 $24,194,639.78, total, $43,704,962.13. Balance available on Mar. 1, 1920, from vote for current year, $15,505,361.22.

There has been some little criticism in the press, in regard to the cost of the government ships, and I wish to take advantage of this occasion to make a comparison between our cost and the cost of ships contracted for in Canada by the Imperial Munitions Board for Great Britain, also the cost of ships built for Great Britain in foreign countries, and the cost of similar types of steel ships built in the United States. From information available it is learned that the ships constructed by the U.S. Emergency Fleet Corporation varied considerably in cost. Most, if not all, of the contracts placed by them during the war contained a provision that the price agreed upon in the contract was to increase or decrease according as wages and the cost of materials increased or decreased. Inasmuch as there was a steady increase in wages, there was a consequent increase in the cost of materials, with the result that it was not possible for them to determine the cost of their ships until after they were completed. It was then found that the price ranged very considerably over $200 a ton.

In placing contracts, we had our own technical officers figure up the cost. Then we called for bids and made the very closest and best arrangement we could with the various yards with which we have placed contracts. We made our price and our contracts at so much per ton deadweight. It will be noted that the U.S. policy differed entirely from that pursued by the Canadian Government. They took a base price, and then had a clause in their contract to the effect that as wages and the cost of materials varied up or down—and it was always up—an increase in price would be allowed from the time the contract was let until the ship was completed. Consequently, until the ship was ready to be put into commission, they could not tell what the actual cost was. I believe I am making a very conservative statement when I say that the large amount of steel tonnage built in the U.S. for the Emergency Fleet Corporation cost $200 a ton or over. Skinner and Eddy, of Seattle, are building a standard ship of 8,800 tons capacity, and Mr. Skinner, giving testimony before the U.S. Senate last month, declared that these ships were being built at present at a price of $188 a d.w. ton. Ships somewhat similar in size, but more exacting in the matter of equipment, etc., are being built in British Columbia at present under the Government programme for $167.50 a ton.

### Cost of Shipbuilding.

I wish to refer to the cost of ships built in this country by the Imperial Munitions Board, and I offer no criticism whatever of the way in which the board let contracts: on the contrary, I think they deserve a great deal of credit for getting the steel shipbuilding industry in this country started in the manner they did. My figures are taken from the report of the National Committee on Expenditure appointed by the British Government, and are therefore official and authentic. The Imperial Munitions Board ordered 44 steel ships in Canada at £39.10s. a ton, which would be equivalent to $190. When they placed their contracts in 1916, the cost of labor, of ship plates, and of all other material entering into a ship was not nearly as high as when this government entered on its shipbuilding programme about May, 1918. The Imperial Munitions Board also built in Canada 16 wooden ships at a cost of £42 a net ton d.w., equivalent to $204.

Some criticism has been levelled at this government for intervening at the time we did instead of allowing the Imperial Munitions Board to proceed with their shipbuilding programme, but I am sure members must see the wisdom of

the government entering upon our very large shipbuilding programme at that time, because the ships built by the Imperial Munitions Board were built for Great Britain. They were put under British registry, and could not be used in conjunction with our transcontinental railway system, or in opening up new trade routes and expanding our export business. I consider, therefore, that this government acted wisely in informing the representative of the Imperial Munitions Board here that Canada would no longer advance loans to the British Government to have ships built for England, in Canadian yards and under British registry, but rather that it was the Canadian Government's policy to build their own ships, pay for them with their own money, and operate them for the national benefit of Canada. I will mention the ships that were built for England in other countries during the war, because I conceive that this information may be of much interest to the house. England ordered to be built in the U.S. 13 steel ships at £41.7.10, equivalent to $200 a ton; in Japan, 19 at a cost of £44.17.8, or $214 a ton; to be built in China, or at least to be assembled there, 3 ships at £41, or $199, a ton.

Since the beginning of this year, Norwegian interests placed orders for cargo ships of 9,500 tons deadweight, with shipbuilding firms on the Clyde, at $162 a ton, as compared with the price in this country, for the same size of vessel, of $167.50 a ton; and a cargo ship of 7,750 tons d.w., 11 knots, oil fuel, was contracted for recently by one of the companies engaged in transatlantic business, at $220.35 a ton.

### Operation of Steamships.

The routes on which the Canadian Government Merchant Marine Ltd. has placed its ships now in service are: Canada to Liverpool; Canada to Glasgow; Canada to London; Canada to Brazil and Buenos Aires, calling at Pernambuco, Santos and Rio; Canada direct to Havana, three sailings through the present month; Canada to Barbadoes, Trinidad and Demerara; Canada to Havana, Cuba and Kingston; Vancouver to New Zealand and Australia. These are the routes on which our ships are already sailing, and the proposed additional routes on which the Canadian Government Merchant Marine will place our other vessels as they are ready to be put into commission are: Canada to other United Kingdom ports such as Manchester, and looking into the possibility of moving traffic to Ireland via Queenstown; extending the Jamaica service to Venezuela; weekly or fortnightly service from Montreal to St. John's, Newfoundland, calling at Charlottetown, when traffic offers during the season of open navigation, and the rest of the season from Halifax; considering a service to the Orient when vessels are available; looking into the possibilities of a service to India and, if conditions warrant, such a service will be establisshed; considering a service from Vancouver to South Africa and return via Singapore and Hong Kong; investigating conditions regarding a service from British Columbia ports to the west coast of South America.

I should like to make a public appeal to Canadian manufacturers to bestir themselves and to show more interest in Canada's export trade than they have shown during the past years. If Canada is to throw off her great financial burden it is indispensable that this country should have a larger export trade than we enjoy at present. The government have done their part by building up this large and efficient merchant marine. We have railway connection, and I have had placed on board these vessels, with accommodation for luggage and samples, additional staterooms in order that our manufacturers may be able to send their commercial travellers to these foreign countries on board Government ships. Our Government Merchant Marine is a great advertising medium for Canada, and for our products generally. As members are aware, the name of every one of our ships has the prefix "Canadian" before it; for example, "Canadian Pioneer," "Canadian Voyageur," "Canadian Seigneur," etc. When our ships are in port they fly from the top mast the house flag, a white flag with a red cross and a beaver in the corner. Any one will at once recognize a Canadian ship, first by the name, and also by the house flag she flies while in port. I do not know of any better way in which Canada could advertise her own interests and develop the possibilities of the country than through the instrumentality of the Canadian Government Merchant Marine, the ships of which will shortly be sailing the seven seas of the world. These ships will prove of the greatest assistance to this country in the matter of imports. They were not built to carry manufactured products only. They are intended to carry the products of the mines, the fisheries, the forests and the field. They will prove of the utmost importance and value to Western Canada, which has such vast quantities of grain to ship. These products will travel first of all over the government railways, and our merchant marine will distribute them to the various ports of the world to which they are destined. Continuity is maintained, the grain being handled by the government system of railways until it reaches the seaboard, where it is transferred to the Canadian Government ships. And if the time should ever arrive when Canada will be discriminated against in any way, although I trust that such a possibility is very remote, then she has within her grasp the right to regulate the rates of freight on the products of the farm, the manufacturers of the country, and all our natural products, from the point of shipment right through to the point of destination. Under all the circumstances, therefore, the Canadian Government Merchant Marine is filling a long felt national want. It may be of interest to members to know what kind of cargoes our vessels have so far been carrying. They are as follows from Pacific ports.

Canadian Volunteer—Genoa Bay to Garston, Eng., 2,085,569 ft. of lumber.

Canadian Trooper—Vancouver to London, 1,956,216 ft. of lumber.

Canadian Aviator—Vancouver to Garston, Eng., 1,934,938 ft. of lumber.

Canadian Raider—Genoa Bay to Melbourne, 2,005,857 ft. of lumber.

Canadian Importer — Vancouver to Melbourne, general cargo, consisting principally of corsets from Dominion Corset Company, Quebec; sewing machines from Cleveland; rubber tires from Goodyear Rubber Co., Toronto; underwear from Hamilton; bicycles from Western Ontario; newsprint from Canadian Export Paper Co.; chocolates from Toronto; newsprint from Powell River Co., B.C.; canned herrings from Canadian Fishing Co.; mantles, lumber, laths, whitelead, etc., from various shippers. This will give some idea of what a general cargo means.

Referring to our smaller ships that are on the West Indian route, members will be interested to know the vast quantities of raw sugar that were brought from the West Indies to Montreal, Halifax, and St. John. N.B. If it had not been for the Canadian Government ships there would have been a sugar shortage in this country. The sugar carried from the West Indies to St. John and Halifax was 47,266 tons. The total tonnage at present loaded and en route to St. John and Halifax is 14,155 tons. In addition to the above these ships have undertaken to load before the end of April and deliver at Canadian ports 28,400 tons, making a grand total of 89,821 gross tons, valued at $13,164,160.40.

The number of voyages that our ships have made to Feb. 6, 1920, is as follows:

| | |
|---|---|
| To West Indies | 27 |
| To Buenos Aires | 4 |
| To London | 5 |
| To Liverpool | 9 |
| To Glasgow | 1 |
| To United Kingdom, from Vancouver, via Panama Canal | 3 |
| To Bordeaux | 1 |
| To Havre | 1 |
| To Australia and New Zealand | 1 |
| To St. John's, Newfoundland | 4 |
| | 56 |

It is not often that ships, railways or other things are managed and operated by governments in such a way as to show a balance on the right side, but I am happy to say that from the figures I will give in a moment you will see that although 19 of these ships have only been in service for a short time, not one of them having been in service for a full year, the balance is on the right side. I wish to explain how the net earnings are arrived at. The Canadian Government Merchant Marine follows good business practice. It had to put on a new organization and to open up new trade routes. After providing for organization, overhead expenses, operating expenses, depreciation, insurance and 5½% on cost, the ships have made a remarkably good showing. I think it is only fair that as Minister of Marine, and on behalf of the government, I should pay a tribute to D. B. Hanna and his board of directors of the Canadian Government Merchant Marine for having accomplished such a fine result as I am going to refer to in a moment, notwithstanding all the difficulties inseparable from new routes and a new organization. I am immensely pleased, as the minister responsible, so is the government, and I am sure that members and the Canadian people will also be pleased.

The profit statement is as follows: Up to Dec. 31, 1919, there were delivered 19 ships. Many of these were received during the late summer and autumn, so that only 13 had completed voyages by the end of the year. Routes were opened to South America, West Indies and the United Kingdom. By Dec. 31, 28 voyages had been completed. The total gross earnings of all boats amounted to $3,448,030.25, and the net earnings to $1,406,000. This net will provide interest at 5½% on the government's investment, full reserve for depreciation and a handsome margin in addition. These earnings are held by the company in the shape of bank balances, Victory Loan bonds and accounts receivable. In view of the fact that many of the ships were only in service for a portion of the year, and also as the initial expenses in placing ships in service are extremely heavy, I think you will agree with me that the operations of the Government's Merchant Marine present an exceedingly satisfactory

showing. The government ships enabled the exportation of Canadian products in 1919 to the value of $21,362,000, much of which would not have been shipped if the shipping facilities had not been provided by the government.

Since Jan. 1 shipyards on the Pacific Coast have delivered three ships, Canadian Raider, Canadian Importer. and Canadian Exporter, all of which will be employed in the Canadian-Australian trade. The Canadian Raider and Canadian Importer have sailed with a full cargo of lumber in the one case, and a full cargo of confectionery. newsprint, lumber. rubber tires, etc., in the other. The Canadian Exporter is loading at present. It is expected that with the service which the Canadian Government Merchant Marine will be able to provide between Canada, Australia and New Zealand very important business will be established.

By order in council these ships were transferred to Canadian Government Merchant Marine at contract price. In lieu of that Canadian Government Merchant Marine issued notes payable to the Finance Minister bearing interest at 5½%. It is incumbent upon Canadian Government Merchant Marine not only to meet the interest on the cost of construction on these ships at 5½%,but also to pay the principal from time to time out of earnings. I am very happy to announce that. notwithstanding only 19 ships were in service for a portion of the year, yet. out of earnings Canadian Government Merchant Marine has issued a cheque to the consolidated revenue fund of Canada for $500,000 which meets the interest at 5½% to Dec. 31, 1919. Members will see that the Canadian Government Merchant Marine is paying its way although it has hardly got started.

### Australian Shipbuilding.

It may interest members to know what our sister Dominion of Australia is doing. Australia has half our population but is still a nation of great vision. energy and capability. In the early days of the war, Australia acquired by purchase 15 second hand British ships with a tonnage of approximately 100,000 tons. In addition the Commonwealth Government undertook a local building programme. The original programme provided for building 24 steel ships of about 5.500 tons deadweight each and 24 wooden ships of about 2,600 tons d.w. each. A second programme was subsequently undertaken which provided for building 14 steel ships of about 6,000 tons d.w. each. In addition contracts were placed by the Australian Government for building 6 vessels in United Kingdom yards of about 12,000 tons d. w. When Australia completes her programme she will possess a total of 348,400 tons net, a very good merchant marine for our overseas dominions to have.

### Steel Plates for Shipbuilidng.

I now come to an important adjunct of shipping, viz., the establishment of a steel plate mill and the contract entered into by the Dominion Steel Corporation with the government which calls for 250,000 tons of ship plates, the government obligating itself to take 50,000 tons a year for five years with the option of increasing that quantity up to 75,000 tons if it should think fit to do so. The contract was made when the war was on. The government had entered upon a shipbuilding programme and the only country that Canada could get ships plates from was the U.S. We placed a large order in that country for 80,000 tons, but notwithstanding all our efforts to get delivery of steel we were only able. after 12 months. to get 6,000 tons. At that time no one knew how long the war was going to last, and the necessities of shipping were very pressing upon the government. Therefore we decided that Canada should be self contained, as far as shipbuilding was concerned, and entered into the contract referred to. The government made this contract at a price of $4.15 per 100 lb. That was during the war, but after the armistice had been signed I summoned the Dominion Steel Corporation's officials to Ottawa and told them that while the contract was binding upon both parties and I could not force them to reduce their price, at the same time the government would appreciate it if they could see their way clear to make a reduction. The officials received the proposal in a very broad and generous spirit, and after several weeks of negotiation, I was able to prevail upon them to reduce the price from $4.15 per 100 lb. to $3.65, equal to $11.20 a gross ton. a saving on the entire contract of $2,800.000. The mill commenced operations on Feb. 17 last. and from the first, ship plates measuring up to the high standard required by Lloyds were being successfully turned out. Within a month after the actual commencement of operations at the mill, the total commitments for the first year were practically disposed of. Thirty-four thousand tons will be required for shipbuilding purposes: 9,300.59 tons have been sold to outside powers: at the present moment 6,000 additional tons are under option. In addition the government is in negotiation with the New South Wales Government for the sale of some 15,000 tons. which it is hoped to conclude successfully within the next 30 days. Further enquiries are being received almost daily for steel, but until such time as the department ascertains the quantity of plates that the mill will be able to produce in the first year it will not be possible to take any further commitments.

There will be no difficulty on the government's part in fulfilling its part of the contract by taking ing its part of the contract by taking 50,000 tons, and I am almost certain that we will have to ask the Steel Corporation, under the terms of our contract, for a maximum quantity of 75,000 tons. I do not want to make any statement that will not prove to be accurate later on, but as far as I can tell from the contracts that we have taken, and the contracts that we expect to take, I think I am safe in saying that the government will not make any loss after accepting the maximum quantity that it has to take under the terms of the contract, and there is a fair possibility that a year hence, if I am spared, I may be able to inform members that there has been a profit in the matter of ships' plates as well as ships.

Our competitor in ships' plates in the world is not the United Kingdom, but in Australia, and elsewhere our competitors are our neighbors to the south, the United States. The price of ships' plates in England is, if my memory serves me right, £27.10 a ton, which is very much higher than is our price from the Steel Corporation, so much so that we could ship Canadian plate, turned out at the Sydney mill, to any part of the United Kingdom and meet the competition there and still have a good profit. It is not to be wondered at that the price of plates has advanced in the old country. There has been a rise in wages over there and the price of materials of all kinds that enter into shipbuilding has gone up. No one expects that the United Kingdom will ever return to pre-war prices for steel freight ships or passenger ships either. The price of building steel ships in the United Kingdom. of similar size and design, is just as high as in this country. But there will come a time when the yards in the United Kingdom will not be as fully occupied as they are now. Every yard in England, Ireland and Scotland has more contracts than it is able to turn out for some time to come; but when the pressure on those yards eases off, competition is bound to become keener: and if nothing is done for the shipbuilding industry in this country, when that time arrives it is difficult for one to forecast what may happen to our magnificent shipbuilding industry, which as it is established at present has bright prospects of becoming very much bigger and greater.

### Subsidies for Shipbuilding.

That brings me to the question of subsidies. I am not going to say anything in that regard. further than that the government has the matter under its careful consideration. The Finance Minister. when he brings down his budget, will state, in the government's behalf, whether or not it can see its way clear to do anything to aid the shipbuilding industry in Canada. However, it will be gratifying to members to know that notwithstanding the fact that Canadian shipbuilders have absolutely no protection of any kind they have been able under existing conditions to secure foreign orders in competition with shipbuilders in the old land. The National Shipbuilding Co. of Three Rivers, Que., is building six ships of 5,000 tons d.w. each, three of 3,200 tons each and two of 6,500 tons each for foreign registry. These orders were secured from France by the National Shipbuilding Co. in competition with the world. Canadian Vickers, Ltd., of Montreal, also in competition with the world, secured a contract from Norway for the construction of two steel vessels of 8.000 tons d.w. each. The Collingwood Shipbuilding Co. has secured the contract for a canal size ship for the Standard Oil Company of New Jersey, to be employed in foreign waters. That may seem to indicate that our shipbuilders can now compete with the world, on account of the conditions that I have referred to. But I am not so optimistic as to say that one or two years from now they would be able to do so without any assistance whatever.

I desire to pay a tribute to those of our Canadians who have had to do with the building of these ships. They were not skilled in the building of ships when steel shipbuilding was commenced on a large scale some two or three years ago. But although the designs of the ships which are being turned out in the yards from Halifax to Prince Rupert are British, the materials and workmanship are Canadian, and Canadians have demonstrated their skill in shipbuilding as they have in other walks of life, just as when the call of their country came they displayed their adaptation to military life, and their bravery in the field of battle. Our ships are equal in design, workmanship and efficiency to any ships of the same kind that are built in the old land. I have covered the programme as fully as I have been able to; if members desire to ask any questions I shall be only

too pleased to answer them.

In the debate which followed, the Minister of Marine stated, in answer to a question, that in making a comparison of costs of ships in Canada and Great Britain, sterling exchange had been figured at $4.86. W. Duff, M.P. for Lunenburg, N.S., contended that it should have been figured at the current rate of exchange, which six months ago was $3.60.

**Why Tenders Were Not Asked.**

Hon. Mackenzie King, leader of the opposition, having contended that public tenders should have been asked for building the ships, the Minister of Marine said:—Public tenders are as a rule called for, and quite properly so, but we could not follow that policy in ordering ships. Suppose I had called for public tenders for six ships of 8,400 tons. Suppose that Canadian Vickers, Ltd., of Montreal, and five or six other shipbuilders had tendered, and that the Davie Shipbuilding & Repairing Co., of Lauzon, which has not the facilities for turning out that number of ships, except after a very long time, were the lowest tenderers. The government would have no option but to award them the contract. We would not be able to distribute the orders. I quite understand the point of the leader of the opposition, viz., the desirability of safeguarding the public interest. The statute from which he has quoted makes it plain that the minister has power to use his best judgment, and the government to purchase by the best means what it requires. I do not know of any method that would so well safeguard the public interest as the course we followed. I believe we got lower prices than we should have obtained by public tender. When the government asked for prices on ships, it did not necessarily take the prices that were quoted. If a price was considered satisfactory it was accepted, and if it was too high it was of course refused. By the method we followed we were in a position to distribute the business evenly over 17 yards at a cost probably lower than if we had called for public tenders in the way suggested. It must be borne in mind also that time is an important feature of the programme, and we could not allow one yard to take more business than it was capable of turning out. Some yards have two berths, some four and some six, and all these facts have to be taken into consideration in allotting the work. It was desirable to distribute the contracts in such a way that labor would not be concentrated in one particular place, but that workers would be evenly employed throughout the 17 yards from Halifax to Prince Rupert. I have already said that the government is at the end of its steel shipbuilding programme. If I thought that the suggestion of the leader of the opposition was of any practical importance I would gladly recommend it to the government, but from the business experience that I have gained during the last 30 or 35 years, I am bound to say that I think the government has followed the best possible course.

When the debate was resumed on Mar. 1 30 the Minister stated that the total payments for steel cargo steamships up to April, 1919, were $19,510,322.35. The total payments from April, 1919, to Mar. 1, 1920, were $43,704,962.13. The balance available on Mar. 1, 1920, from the vote for the year ending Mar. 31, 1920, was $15,505,361.22. In addition to this balance the government was asking for another vote of $20,000,000, part of it being a revote from the year ending Mar. 31, 1920.

He also said:—"I made the statement before, and I make it now, that the government has finished its shipbuilding programme. The reason the government has ceased placing contracts for freight ships is because we consider that with 63 steamships, with a net tonnage of 380,000 tons, we have ample tonnage to take care of whatever export trade the ships might be called upon to carry, or whatever other service they might be called upon to perform in conjunction with the government railways."

The item was then carried.

## Canal Estimates for 1920-1921.

The Railways and Canals Department's estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items for canals:—

| | |
|---|---|
| **Chargeable to Capital, $5,900,000.** | |
| Welland Ship Canal, construction | $5,500,000 |
| Trent Canal, construction and betterments | 400,000 |
| **Chargeable to Income, $735,400.** | |
| Chambly, improvements | $ 17,000 |
| Carillon and Grenville, improvements | 13,100 |
| Lachine, dredging | 26,000 |
| Soulanges, improvements | 30,000 |
| St. Anne's lock, improvements | 10,300 |
| Lake St. Francis, protection works | 2,500 |
| Ontario-St. Lawrence, improvements | 39,500 |
| Trent, improvements | 377,000 |
| Welland, improvements | 150,000 |
| Surveys and inspections, including salies and expenses of experts employed temporarily. | |
| **Chargeable to Collection of Revenue.** | |
| Staff and repairs | $1,860,000 |
| Statistical officers | 42,500 |

## Mail Subsidies and Steamship Subventions.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items for steamship services between the points named:—

| | |
|---|---|
| ATLANTIC OCEAN. | |
| Canadian Atlantic ports and Australia and New Zealand | $140,000 |
| Canada and Newfoundland | 35,000 |
| Canada and West Indies or South America or both | 340,666 |
| Canada and South Africa | 146,000 |
| PACIFIC OCEAN. | |
| Canada and Australia or New Zealand, or both, on Pacific Ocean | 130,509 |
| Canada, China and Japan | 200,000 |
| Prince Rupert, B.C., and Queen Charlotte Islands | 21,000 |
| Victoria and San Francisco | 3,000 |
| Victoria, Vancouver, way ports and Skagway | 12,500 |
| Victoria and West Coast Vancouver Island | 5,000 |
| Vancouver and Northern ports of British Columbia | 16,800 |
| Vancouver and ports on Howe Sound | 5,000 |
| LOCAL SERVICES. | |
| Baddeck and Iona | $ 6,825 |
| Charlottetown, Victoria and Holliday's Wharf | 2,500 |
| Grand Manan and mainland | 12,500 |
| Halifax, Canso and Guysboro | 5,000 |
| Halifax and Newfoundland via Cape Breton ports | 5,000 |
| Halifax, LaHavre and LaHavre River ports | 4,000 |
| Halifax and Spry Bay and ports in Cape Breton | 4,000 |
| Halifax, South Cape Breton and Bras d'Or Lake ports | 6,000 |
| Halifax and West Coast Cape Breton | |
| Halifax and West Coast Cape Breton, calling at way ports | 4,000 |
| Mulgrave and Canso | 9,500 |
| Mulgrave and Guysboro, calling at intermediate ports | 7,500 |
| Newcastle, Neguac and Escuminac, calling at intermediate points on the Miramichi River and Miramichi Bay | 3,000 |
| Pelee Island and the mainlan | 8,000 |
| Petit de Grat and tbe Canadian National Ry. terminus at Mulgrave | 7,000 |
| Pictou and Montague, calling at Murray Harbor and Georgetown | 6,000 |
| Pictou, Mulgrave and Cheticamp | 7,500 |
| Port Mulgrave, St. Peter's, Irish Cove, Marble Mountain and other ports on Bras d'Or Lakes | 6,500 |
| Quebec and ports on north and or south shores of Gulf of St. Lawrence, and or between ports in Prince Edward Island, Nova Scotia, Newfoundland and the Magdalen Islands | 70,000 |
| St. John and St. Andrew's, N.B., calling at intermediate ports | 4,000 |
| St. John and Bridgetown | 2,000 |
| St. John and Digby | 10,000 |
| St. John, Digby, Annapolis and Granville, along west coast of Annapolis Basin | 2,000 |
| St. John, N.B., and ports on Bay of Fundy and Minas Basin, and Margaretville, N.S. | 5,000 |
| St. John, Westport and Yarmouth and other way ports | 10,000 |
| Sydney and Bay St. Lawrence, calling at way ports | 9,000 |
| Sydney and Whycocomagh | 4,000 |
| Sydney and Bras d'Or Lake ports, and ports on east and west coasts of Cape Breton | 14,000 |
| Supervision of subsidized steamship services, expenses in connection with | 4,000 |
| | $1,294,300 |
| AUTHORIZED BY STATUTE. | |
| Canada, China and Japan | 121,666 |

## Ocean and River Service Estimates for 1920-1921.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items:—

| | |
|---|---|
| Maintenance and repairs to Dominion steamships and icebreakers | $1,500,000 |
| Examiners of masters and mates | 18,000 |
| Investigations into wrecks | 12,300 |
| Expenses of schools of navigation | 8,000 |
| To provide for temporary relief of distressed seamen and to cover expenses of shipping forms | 3,000 |
| Registration of shipping | 6,000 |
| Removal of obstructions in navigable waters | 5,000 |
| Inspection of live stock shipments | 3,000 |
| To continue subsidies for wrecking plants, Quebec and British Columbia | 35,000 |
| Unforseen expenses | 5,000 |
| Two motor patrol ships for buoy and lighthouse service in British Columbia | 50,000 |
| | $1,645,300 |

**Contracts for Marine Public Works.**—The Dominion Public Works Department has let the following contracts,—renewal of superstructure and part of eastern breakwater at Collingwood, Ont., York Construction Co., Feb. 27, schedule of prices; construction of grain conveyors, St. John, N.B., Grant & Horne, St. John, N.B., schedule of prices; overhauling and repairing of dredge Ajax, B. C. Marine Ltd., $4,938; alterations to detention building Partridge Island, St. John, N.B., J. P. McPhartland & Sons, $2,840; repairs to coal wharf, Quarantine station, William Head, B.C., R. Moncrief, March 20, schedule of prices; rebuilding of Ell to main breakwaster, Meteghan, N.S., A. Girroir and W. F. MacKinnon, Mar. 26, schedule of prices; construction of wharf, Schenacadie, N.S., E. N. Dickcon, Apl. 1, schedule of prices; repairs to wharf, Bamfield, B.C., McDonald, Watson and Wither, Mar. 25, schedule of prices.

**Sales of War Steamships**—The steel steamships War Company and War Storm, built by J. Coughlan and Sons, Vancouver, B.C., and Wallace Shipyards, North Vancouver, B.C., and the wooden s.s. War Haida, built by Cameron-Genoa Mills Shipbuilders, Victoria, B.C., for the British Government, under orders from the Imperial Munitions Board, are reported to have been sold to Italian interests. The name of the War Storm is stated to have been changed to Laura, and that of the War Haida to Rodosto.

The Baddeck Steamship Co's s.s. Bluehill is running between Iona and Baddeck, N.S., connecting at Iona with Canadian National Rys. trains 5 and 5 daily except Sundays.

## Naval Service Department Estimates for 1920-1921.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items:—

| | |
|---|---|
| Naval Service, to provide for maintenance of Royal Canadian Navy | $300,000 |
| Hydrographic survey | 315,000 |
| Fisheries protection service, to provide for repairs and maintenance of fishery protection steamers | 420,000 |
| Radiotelegraph service, to provide for building and maintenance of wireless stations | 495,000 |
| Tidal current survey | 30,000 |
| Patrol of northern waters | 15,000 |
| Life saving service, including rewards for life saving | 90,000 |
| Customs dues | 500 |
| | $1,665,500 |

The vote for the maintenance of the Canadian Navy is a reduction of $300,000 from the 1919-1920 vote.

## Canadian Notices to Mariners.

The following notices to mariners have been issued by the Marine Department:

**Alaska-Revillagigedo Channel,**—Bold Island,—Angle Point,—lighted beacon established on point on south west side of Bold Island.—Group flashing white light shows a group of two flashes for 10 seconds, elevation 51 ft. Light is obscured from 132 deg. to 298 deg.; the day beacon has been removed.

**Alaska, Sitka Sound, Old Sitka Rock,**—Light established on beacon, on the westernmost rock off Sitka group; character, flashing white light every 6 seconds.

**Alaska, Sumner Strait, Point Colpoys,**—Lighted beacon established on Point Colpoys, flashing white light every 10 seconds.

**British Columbia, Prince Rupert Harbor,** Venne Passage,—Spar buoys established on south side of channel, marking reef off Grindstone Point; on south side of the channel, off rock drying 8 ft. off Wilgiapshi Island; on north side of channel, off Robertson Point shoal; on south side of channel, off Dundas Point; on south side of channel, Auriol point.

**British Columbia, Vancouver Island,** Esquimalt Harbor Entrance, Fisgard Island light, illuminated arc, correction to list of lights. The remarks in the existing List of Lights are cancelled and replaced by the following,—"Visible from all points of approach by water with a red sector between 195 deg. and 332 deg. To clear Scrogg rock, the light must show white when approaching from eastward."

**Hudson Strait and Hudson Bay,**—Lights will not be shown from the following gas beacons in Hudson Strait and Hudson Bay during 1920: Button Island, Hatton Headland; Wales Island; Ashe Inlet; Charles Island; Nottingham Island; Digges Island; Mansel Island; Coats Island; Cape Tatnam; Nelson Shoal.

**Nova Scotia, Northumberland Strait,** Amet Sound, River John,—The three red spar buoys marking the south side of the channel, at the entrance to River John, have been replaced by red conical buoys.

**Nova Scotia, Southwest Coast, Barrington Bay,**—The Barrington East Bay lightship is off her station, and will not be replaced until further notice.

**Nova Scotia, west coast, Yarmouth Harbor,**—During the past season, the Dominion Public Works Department dredged the east side of Yarmouth harbor, from 300 ft. south of Amiro Point, southwest for 1,600 ft., with a least width of 65 ft., and a depth of 18.5 ft., and re-established the Corner beacon light, showing a 7th order dioptric fixed red light, at an elevation of 14 ft.

**Ontario-Quebec, Lake Timiskaming** below Opemican Narrows,—A sorting boom has been placed across Lake Timiskaming, from the south side of the mouth of Porcupine Creek to the opposite shore. There is a swinging boom on the west side of the lake through which boats may pass. The opening has two piers on the west or upstream side, and one pier on the east or downstream side. At night, the two piers will be marked by fixed white lights, and the single pier by a fixed red light.

**Quebec, River St. Lawrence, Lake St. Louis, Caron Point,**—change in character and color of light. On the reopening of navigation, 1½ miles below St. Anne lock, on the north side of the river, the occulting white dioptric light will be replaced by a fixed red catoptric light.

**La Malbaie-Tadoussac Steamship Service.** The Minister of Marine stated, in the House of Commons, recently, that the government does not intend to do anything to replace the service performed by the C.G.S. Champlain between La Malbaie and Tadoussac.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Canadian Fairbanks-Morse Co.,** Montreal, has issued a new general catalogue, embracing practically all its lines.

**Engineering & Machine Works of Canada Ltd.,** St. Catharines, Ont., which manufactures horizontal, vertical, locomotive and marine boilers, tanks, plate work, and light traction excavators, has opened an eastern sales office in the Birks Building, Montreal, in addition to its sales office in Sherbrooke, Que.

**Galena-Signal Oil Co. of Canada Ltd.,** has changed its chief place of business from Montreal to Toronto.

**Independent Pneumatic Tool Co.,** Chicago and Montreal. F. J. Passino, who for a number of years travelled out of the company's general office at Chicago, covering the southwest, has been appointed Assistant Manager, Eastern Division, with office at 1463 Broadway, New York, N.Y.

**Independent Pneumatic Tool Co.,** Chicago, has issued an illustrated folder, describing Thor pneumatic motor hoists.

**Locomotive Stoker Co.,** Pittsburg, Pa. A. C. Deverell, who has been appointed Western Sales Manager at Chicago, was born in Montreal. He commenced work in the G.T.R. shops at Montreal, going west in 1895, his subsequent positions being Superintendent, Great Northern Ry. freight car shops, St. Cloud, Minn.; Superintendent, Great Northern Ry. locomotive and passenger car shops, St. Paul, Minn.; Assistant Superintendent of Motive Power, Great Northern Ry., and General Superintendent, Motive Power, Great Northern Ry.

**Mason Regulator & Engineering Co.,** Montreal, Canadian manufacturer of Reilly feed water heaters, evaporators, distillers, grease extractors, and feed filters, also Mason reducing valves and regulating appliances, has opened a branch office in Toronto, under the management of S. Balmfirth, who was at one time Assistant to Superintendent, McGill University Power House, and afterwards Chief Engineer (Power) of the Hospital for Sick Children, Toronto. He is a member of the Canadian Association of Stationary Engineers' executive.

**Metal & Thermit Corporation,** New York, has appoint J. G. McCarty, Manager of its Canadian Branch at Toronto, and has transferred R. L. Browne from its New York office to Boston, Mass., where he will have charge of sales in New England. Mr. McCarty graduated from Stevens Institute of Technology in 1896, and entered the Metal & Thermit Corporation's services in 1909, since which he has represented it in many sections of Canada and the United States.

## Transportation Conventions in 1920

May—Association of Railway Claim Agents, Atlantic City, N.J.
May—International Railway Fuel Association, Chicago, Ill.
May 5-7—Air Brake Association, Chicago, Ill.
May 12—Railway Accounting Officers' Association, Washington, D.C.
May 25-28—Master Boiler Makers' Association, Minneapolis, Minn.
June—American Association of Freight Agents.
June 9-16—American Railroad Association's Mechanical Section, Atlantic City, N.J.
Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.
Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

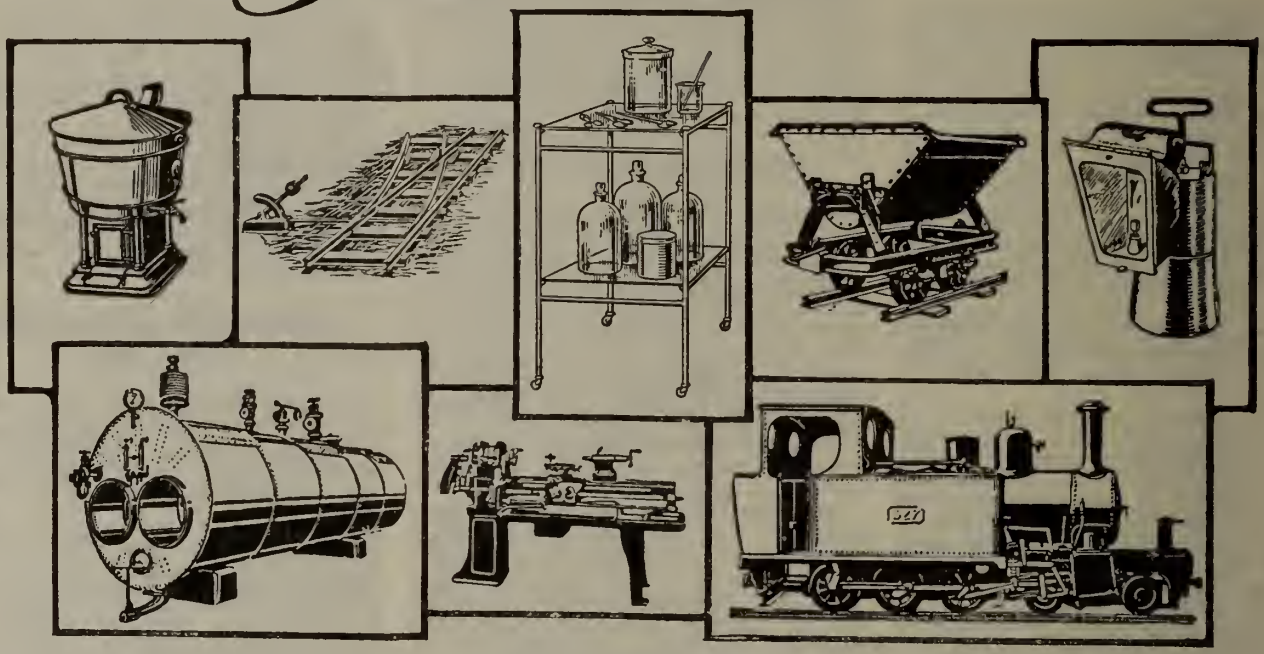
## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.
Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom 909 Shaughnessy Bldg., Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.
Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.
Niagara Frontier Summer Rate Committee, James Morrison, Montreal.
Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.
Railway Association of Canada—W. M. Neal, Montreal.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.
Transportation Club of Vancouver — H. W. Schofield, 556 Church St., Vancouver, B.C.

GR MINISTRY of MUNITIONS

# GOVERNMENT PROPERTY For SALE



The Disposal Board
have

## STOCKS

lying in the United Kingdom and Available for Export
of

## ENGINEERING STORES

Ferrous and Non-Ferrous Metals
Plant and Machinery
Steam Engines and Boilers
Factory Stores
Machine Tools
Railway Material
Contractors' Stores
Electrical Instruments and Machinery
Medical Stores
Chemicals and Explosives
Motor Vehicles
Agricultural Machinery
Aircraft
Furniture
Textiles and Clothing
Boots and Leather Equipment
Motor Boats, etc., etc.

Buyers should instruct their representatives in the United Kingdom to communicate with D. B. 8 Canadian Export Department, Ministry of Munitions, Whitehall Place, S.W.

Cable address: "DISPEXPORT, MUNORGIZE, LONDON."

# Order Early to get Early Delivery
## Delays are Dangerous

### HOISTS
We build any kind of Hoist you want, and for any purpose. We offer you a choice of either Steam, Electric or Gasoline Power, and 7 sizes, from 10 horse power up to 50 H.P. Let our Engineering Staff assist you with your Hoisting Problems.

### BUCKETS
We offer a large variety of styles and sizes of Steel Buckets, either Tipping or Bottom Dumping. Our prices are right, and we guarantee satisfaction as to both material and workmanship.

Standard Derrick Engine, made in 7 sizes, from 10 to 50 Horse Power.

### SMALL CARS
We catalogue a great many types of small cars, in a large range of sizes. We are prepared also to build to order any kind of small car you want, and in any quantity from one up.

### CAR IRONS
For repairing your small cars. Best chilled wheels, made of special charcoal iron. Steel Axles. Any kind of bearing or grease box you prefer. We supply complete sets, any size wheels or axles, and for any gauge track. Roller Bearings also fitted in car wheels if desired.

**Let us send you our Catalogue. It will interest you.**

**MARSH ENGINEERING WORKS, LIMITED** Established 1846 **Belleville, Ontario**

General Sales Agents: MUSSENS, LIMITED, Montreal, Toronto, Winnipeg and Vancouver.


# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.
Allow five words where replies are to be sent to a box number. Minimum order—$1.
Rates under other headings and for display advertisements on application.

## Machinery For Sale

"Have on hand for immediate sale one new number 6 Standard Lees Bradner Thread Miller, Type T 312 line shaft drive. Anyone requiring a machine of this kind can get immediate delivery on this new machine, part of which is still in original crates at price of $4,060.50 Canadian Funds. Particulars given on request. Box 6855 Canadian Railway & Marine World.


## An Assistant Editor Wanted,

To collect material, and write on railway mechanical engineering, shop practice, etc., for technical periodical.

State age, full particulars of experience, and pay expected, addressing

Acton Burrows,
President and Editor,
Canadian Railway and Marine World,
70 Bond Street,
Toronto, - - - - Canada.

## For the Good of the Service Use—

NATIONAL STEEL TRAP DOOR AND LIFTING DEVICE
RESISTO and TUCORK INSULATION
FLEXOLITH COMPOSITION FLOORING
TUCO PRESERVATIVE FOR FLOOR PLATES
NATIONAL STANDARD ROOFING
IMPERIAL CAR WINDOW SCREENS

**TUCO PRODUCTS CORPORATION, 30 Church St., New York City**

CANADIAN OFFICE:
Consolidated Equipment Co., 263 St. James Street, Montreal.

RAILWAY
To R.S.A. Specification
Catalogue No. 31

# LAMPS

MARINE
To B. of T. Requirements
Catalogue No. 22

**THE HIRAM L. PIPER COMPANY, Limited**
Montreal, P.Q.

**It Pays** to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better **Results**

# Picking Your Prospects

There may be only four in the town, or there may be ten or fifty, but if they are possible buyers of your goods, the right Business Paper reaches them, and no one else.

Automatically, the good Business Paper segregates all those interested in the same materials, processes and markets. Also it attracts to itself chiefly the most progressive and desirable element in any group. Truly a hand-picked audience.

What an ideal opportunity for scientific, intensive, wasteless, and immensely productive advertising effort? And what amazing results are being reaped by those who know how to grasp it, and who do not view the comparatively low cost as a disadvantage.

Our Advisory Service Bureau will help you find the best advertising route to your market, for the asking.

All Business Papers are good, but some are better than others. The phrase "Member of the Associated Business Papers, Inc.," means proven circulation PLUS the highest standards in all other departments.

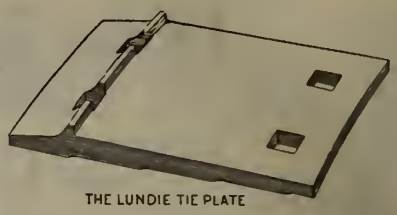
## CANADIAN RAILWAY & MARINE WORLD

Member of

**THE ASSOCIATED BUSINESS PAPERS, Inc.**

*Jesse H. Neal, Executive Secretary.*

**Headquarters** 220 W. 42nd Street **New York**




One of the most distinguished, successful and honored Engineers of Canada writes as follows of the

## LUNDIE TIE PLATE

"It is by far the most scientifically designed and practically efficient tie plate ever evolved."

**THE LUNDIE ENGINEERING CORPORATION**

**920 BROADWAY, NEW YORK**

**Chicago Office—30 No. La Salle Street**

**Canadian Representatives**

**THE HOLDEN COMPANY, LTD.**

**350 St. James St., Montreal.**

**THE CANADIAN NORTHERN RAILWAY COMPANY.**

Toronto, 8th April, 1920.

Notice is hereby given that the Annual General Meeting of the shareholders of The Canadian Northern Railway Company will be held in the head offices of the company, 9 Toronto Street, Toronto, on Monday, the 10th day of May, 1920, at the hour of eleven o'clock a.m., for the purpose of considering and, if thought fit, of approving the Directors' Report to the Shareholders and the Consolidated Balance Sheet showing the financial position of the Canadian Northern System for the fiscal year ending 31st December, 1919, also for the purpose of considering, and, if thought fit, of transacting any other business which may properly come before the meeting.

By order,
R. P. ORMSBY,
Secretary.

# Butterfield Superiority

## in Quality, Finish and Service is built into each and every tool

Angular, Concave, Convex, Form CUTTERS, End Mills, Worm Hobs, Generating Hobs, Hollow Mills.

Gear, Plain Milling, Side Milling, Step Stocking CUTTERS, Metal, Slitting and Screw Slotting Saws, Slitting Discs.

**Ask for Drill and Cutter Catalog "A"**

## Butterfield & Co., Inc.

**Rock Island, Que.**

*ANNOUNCING*

# DOMINION OXYGEN COMPANY, Ltd.

The Dominion Oxygen Company, Ltd., from its very inception takes high rank among the leaders of Canadian Industry.

## *Product*

Foreseeing an extraordinarily rapid development of Canadian business, it plans a chain of modern plants for the production of atmospheric oxygen of high purity.

Five important industrial centers have already been chosen as locations for as many plants. The building program is actually under way and is being rapidly pushed to completion.

## *Cylinders*

Dominion Oxygen Cylinders will be of the most modern type, designed to carry the maximum quantity of gas with the least possible weight, thus insuring the lowest shipping and handling expense.

Under the comprehensive selling plan of the Company, these cylinders will be loaned to the consumer on liberal terms.

## *Policy*

Broad in its scope, the Dominion Oxygen Company, Ltd., is still broader in its policy. It has planned and is providing a great distributing system which, through a network of centrally located warehouses and distributing stations, will insure Canadian oxygen users of a never-failing and prompt supply of pure oxygen in any quantities.

This service will be extended in all its ramifications as rapidly as new plants are completed.

By inaugurating, with its patrons, a relationship of unusual breadth and liberality, the Dominion Oxygen Company, Ltd., will be a constructive force in promoting the tremendously increased use of the oxy-acetylene process.

## *A Suggestion*

It will be to the advantage of Canadian users of oxygen to write for more detailed information before contracting for their future oxygen requirements.

# DOMINION OXYGEN COMPANY, Ltd.

**265 Adelaide Street West**

**Toronto, Canada**

# THE WOOLERY

## Supreme for Railway Motor Cars

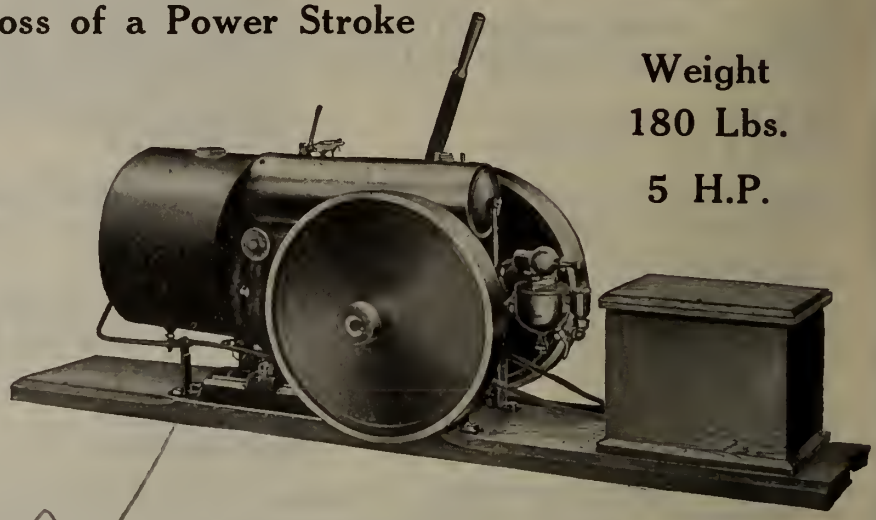
### Reversible Without the Addition of Extra Parts or Without The Loss of a Power Stroke

The Unit Speed Control "is a dandy — the best patent yet," say delighted foremen.

Our patented self-adjusting sliding base compensates for wear.

The shifting lever can't pinch your hand—it's "under your thumb" from either side of the engine.

***A Light Weight Engine of Proven Durability***



**Weight 180 Lbs.**

**5 H.P.**

GUARANTEED FOUR YEARS

**WOOLERY MACHINE CO., Minneapolis, Minn., U.S.A.**

# Brake Shoe Scrap Reduced To The Absolute Minimum

The Reinforced Brake Shoes here pictured were all worn down practically to the steel back.

The average weight of 100 shoes taken at random from this pile was about 5½ lbs.

The roads using these shoes received about twice as much brake shoe service as could have been gotten from ordinary unreinforced shoes. It paid them and it will pay your road to use Reinforced Brake Shoes.

Manufactured in Canada.

**Dominion Brake Shoe Company, Limited**

350-356 St. James Street, MONTREAL

THE HOLDEN CO., LTD., AGENTS

# FORGINGS

SEND PRINTS FOR PRICES

CANADA

FOUNDRIES & FORGINGS, LIMITED

WELLAND, ONT.

# IMPERIAL BANK OF CANADA

| | |
|---|---|
| Capital Authorized | $10,000,000 |
| Capital Paid up | 7,000,000 |
| Reserve Fund | 7,500,000 |

Head Office: Toronto.

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the World.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches throughout the Dominion of Canada.

**Engineers and Contractors**

**THE ARNOLD COMPANY**
ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
REPORTS, DESIGN AND CONSTRUCTION
Complete Railway Shop and Terminal Properties—
Electrification of Steam Railroads.
OUR EXPERIENCE COVERS THIRTY-FIVE PLANTS
CHICAGO

**ANGUS SINCLAIR, C.E.**
*Railway Contractor*
OFFICE: EXCELSIOR LIFE BUILDING,
Adelaide and Toronto Sts., Toronto

ROBERT W. HUNT, President CHARLES WARNOCK, Vice-Pres. and Genl. Mgr.

**Robert W. Hunt & Co., Limited**

**Consulting and Inspecting Engineers**
**Chemists and Metallurgists**

Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement; Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.

Resident inspectors at all important manufacturing centres in Canada, the United States and Great Britain.

REPORTS ON PROPERTIES AND PROCESSES.

**Head Office and Laboratories:**

**McGill Building, - - - - - - - MONTREAL, QUE.**

**Branches: TORONTO VANCOUVER LONDON, ENGLAND**

**MONTREAL TRANSPORTATION CO., LIMITED**

***Grain and General Forwarders***

**Imperial Bank Chambers, MONTREAL, QUE.**

**REID TOWING & WRECKING CO.** **REID TOWING & WRECKING CO. LTD.**
Port Huron, Mich. *Marine Salvaging Contractors* Sarnia, Ont.

Capt. J. T. REID, *General Manager.*

Tugs, Divers, Steam Pumps, Hydraulic Jacks, Lighters, Wrecking Hawsers, Etc.

R. M. WOLVIN, *President,*

**Canadian Gold Car Heating & Lighting Company, Limited**

ECONOMICAL—SYSTEMS OF MERIT—WILL NOT FREEZE

Vapor Systems, Pressure Systems, Vapor and Pressure Systems, Hot Water Systems, Electric Systems
Automatic Heat Control for all Systems—Ventilators

**346 ST. JAMES STREET MONTREAL, CANADA**

**CHICAGO RAILWAY SIGNAL & SUPPLY COMPANY**

*Manufacturers of All the Name Implies*

Interlocking and Electric Signals and Materials, Highway Crossing Alarms, Forgings, Castings, Etc.

CANADIAN DISTRICT OFFICES.
—Western— Moore, Cameron & Hill Ltd., McIntyre Block—Winnipeg.
—Eastern— Moore, Cameron & Hill Ltd., Beaver Hall Hill—Montreal.

**Malleable Castings** **High Grade Material First Class Service**

**Galt Malleable Iron Co., Limited - GALT, ONT.**

**MILLER BOILER WASHING SYSTEM—FOR LOCOMOTIVES**

Washout Water at 120°. Refill Water at 200°.

**F. W. MILLER HEATING CO.**

**McCORMICK BUILDING - - - - - CHICAGO, ILLINOIS**

**DOMINION TOWING & WRECKING CO., LIMITED**

Tug Strathmore
" Strathbell

**Harbour Tug Service**

Lighter Strathbuoy—Capacity, 700 tons.

Equipped for all kinds of Towing, Wrecking, Etc.
Sand and Gravel supplied for Concrete Work, Rock and Soil Filling for Cribwork.

Dock Telephone, South 184; Head Office, South 2383. JOHN BELL, General Manager, 509 Grain Exchange, Fort William, Ont.

# Dominion Shipbuilding Co., Ltd.

Launching of LE QUESNOY, 4300-ton Steel Freighter.

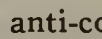
**Office, Docks and Yards, Harbor Front, Bathurst St.**

**Toronto - - Canada**

# PEDLAR'S "PERFECT" PERFORATED DRAINS

## For Firm, Dry Roadbeds

These drains act like sponges in the roadbed, keeping it always dry and firm by allowing the soil water to drip through the perforations, and then drain away. Years of satisfactory service on the leading railways recommend Pedlar's "Perfect" Perforated Drains.

Made from heavy gauge anti-corrosive 

in all sizes, from 8 to 36 inches inclusive.

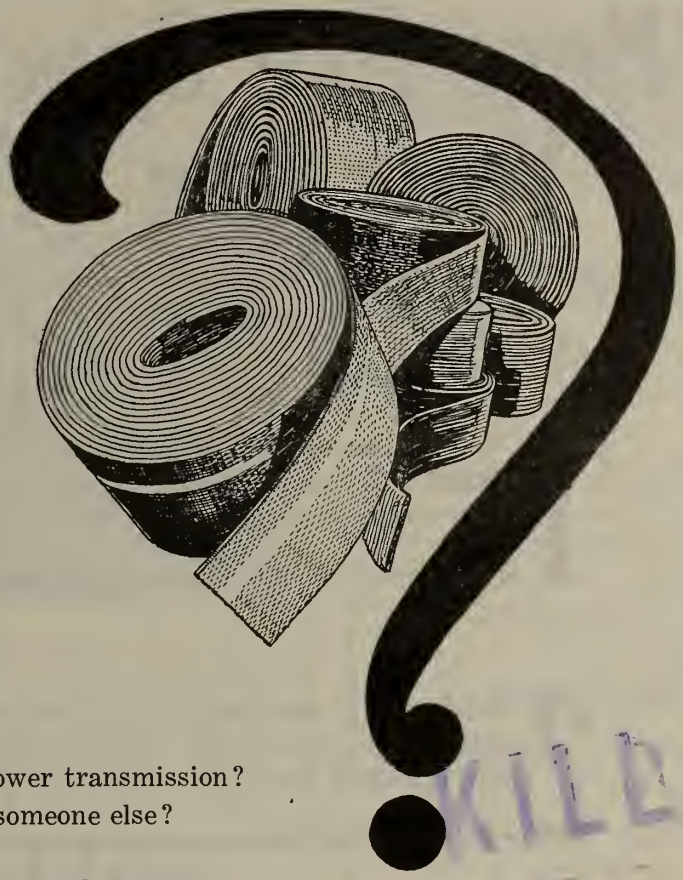
*Write for Drain Booklet R.M.*

## THE PEDLAR PEOPLE LIMITED

(Established 1861.)

Executive Office and Factories: OSHAWA, ONT.

Branches at: Montreal, Quebec, Halifax, St. John, Ottawa, Toronto, Winnipeg, Calgary and Vancouver.



# What's Your Basis of Belt Buying

Is it any quality for a price?

Is it known efficiency in your power transmission?

Is it on the recommendation of someone else?

Is it on sentiment?

Or is it on a thorough knowledge of what it will accomplish?

A poor belt will cost you more in lost power, lost time, lost efficiency than the price of a good belt—therefore you should eliminate the element of guess by specifying the correct type and size of

## Dominion Friction Surface Belting

But unless you are thoroughly acquainted with belting requirements—the thickness and width to carry a given load, and other such technical subjects—you should profit by our experience, which may be had for the asking.

A phone, wire or letter to our nearest service branch will bring to your plant, at your convenience, and without cost, one of our belting engineers, who will analyze your transmission requirements and specify a belt that will efficiently and satisfactorily meet your needs.
Send that request today.

**Our Dominion Hose, Packing and Industrial Rubber Goods are all the Same High Standard as Dominion Friction Surface Belting.**

CANADIAN CONSOLIDATED RUBBER CO. LIMITED
DOMINION RUBBER SYSTEM
AND ASSOCIATED COMPANIES

### Dominion Rubber System Service Branches

| | | | | |
|---|---|---|---|---|
| Halifax, | Ottawa, | Kitchener, | Brandon, | Calgary, |
| St. John, | Toronto, | North Bay, | Regina, | Lethbridge, |
| Quebec, | Hamilton, | Fort William, | Saskatoon, | Vancouver, |
| Montreal, | London, | Winnipeg, | Edmonton, | Victoria. |

# Here Are Specifications For Your Arc Weld Bonds

KILL LAST AD.

Investigate arc weld bonding and you'll find certain fundamentals that are essential. The deeper you go the more necessary these will seem.

1 Weld must be from "Steel to Steel with Steel." That makes it easy for the operator to get a good job.

2 Steel must completely surround the copper terminal to protect the copper and reinforce the finished bond.

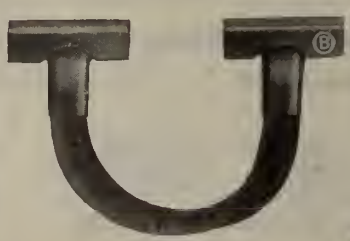
3 The welding angle must be not less than 90° if a thorough union is to be made between bond and rail.

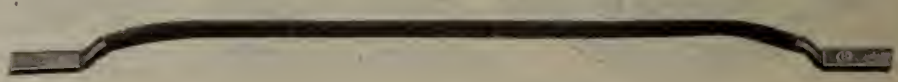
4 Strand must have protecting sleeve where it enters the terminal.

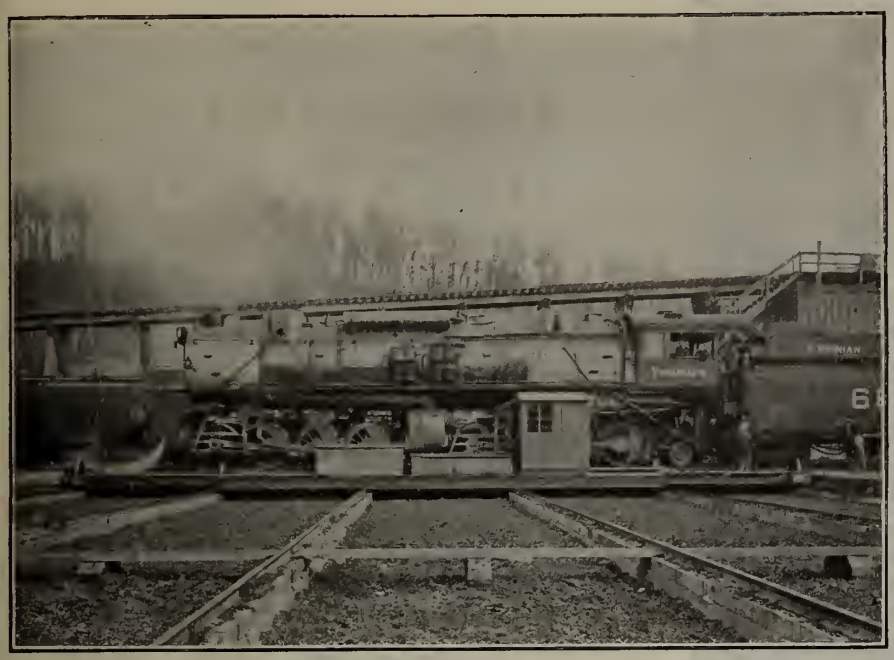
O-B Arc Weld Bonds meet every clause to the letter. Install O-B Bonds with your present machine, or use the O-B Resistance Welder. It has some unusual features for convenient control and for safety.

*Send for literature.*

**The Ohio Brass Co., Mansfield, Ohio**





Whiting One-Motor Electric Transfer Table
Capacity, 270 Tons, Length, 75'. Virginian Railway, Princeton, W. Va.
In Actual Service, the Tender is Uncoupled, Table Carrying Locomotive Only

# WHITING Transfer Tables

## *Designed for Shallow Pits*

A shallow pit means less material to excavate and less concrete to place. Our design requires a pit only 18" from head of approach rail to head of pit rail.

No part of table or operating mechanism extends below top of pit rail.

Wheels are driven by one continuous axle.

Framework is securely gusseted to keep table in square. All bearings interchangeable.

Motor-driven hauling drum provided on each table.

Made for any capacity, length or speed. A. C. or D. C. motors.

Send for Catalog 145
Specifications on request.

**WHITING FOUNDRY EQUIPMENT CO.**
**Harvey (Chicago Suburb), Ill.**

Represented in 25 Principal Cities

**Locomotive and Coach Hoists—Turntable Tractors**

**WHITING**

**CRANES OF ALL TYPES / FOUNDRIES EQUIPPED COMPLETE**

# Geo. P. Nichols & Bro.

## Turntable Tractors

More than one hundred railroads use over 700 Nichols' Electric Tractors.

## Transfer Tables

Eighty-five railroads and car builders use nearly 200 Nichols' Electric Transfer Tables.

There's a Reason

**2137 Fulton St., Chicago**

WE have unsurpassed facilities for meeting your every requirement of these products promptly and satisfactorily.

Write our nearest office about your requirements.

**Standard Underground Cable Co. of Canada, Limited**
Hamilton, Ont.
Montreal Toronto Seattle

A Great Many Large Plants Are Using

# COMMERCIAL ACETYLENE

On Small Work

Repairing a small cast iron bracket at a large shipbuilding plant. Our tanks are convenient, safe and guaranteed to hold quantity and quality gas.

MAIN OFFICE:
80 Broadway, New York
BRANCHES:
ATLANTA, GA.
AURORA, ILL.
BOSTON, MASS.
BOUND BROOK, N.J.
EAST DEERFIELD, MASS.
SAN FRANCISCO, CALIF.
MOBERLY, MO.
W. BERKELEY, CALIF.

**Commercial Acetylene Supply Company, Inc.**

18 TORONTO STREET TORONTO

# Reid Newfoundland Co.

**St. John's, N. F.**

Railway and Steamship Lines
Dry Dock and Marine Works

WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

SHEER LEGS AND WHARFAGE AT DEEP WATER PIER

SHOPS EQUIPPED WITH MODERN MACHINERY

PNEUMATIC TOOLS, ELECTRIC AND ACETYLENE WELDING PLANT IN OPERATION

VESSELS PAINTED WITH ANTI-FOULING PAINTS

***Rates on Application***

# CRANES

Electric and Hand Power Direct or Alternating Current Standard Bridge Cranes.

Revolving Hammer Head and Luffing Boom Types for Shipbuilding and Unloading Wharf.

Also Gantry and Special Types.
(Capacity 2 Tons to 200 Tons)

Coal and Ore Handling Equipments.

## DOMINION BRIDGE COMPANY
LIMITED

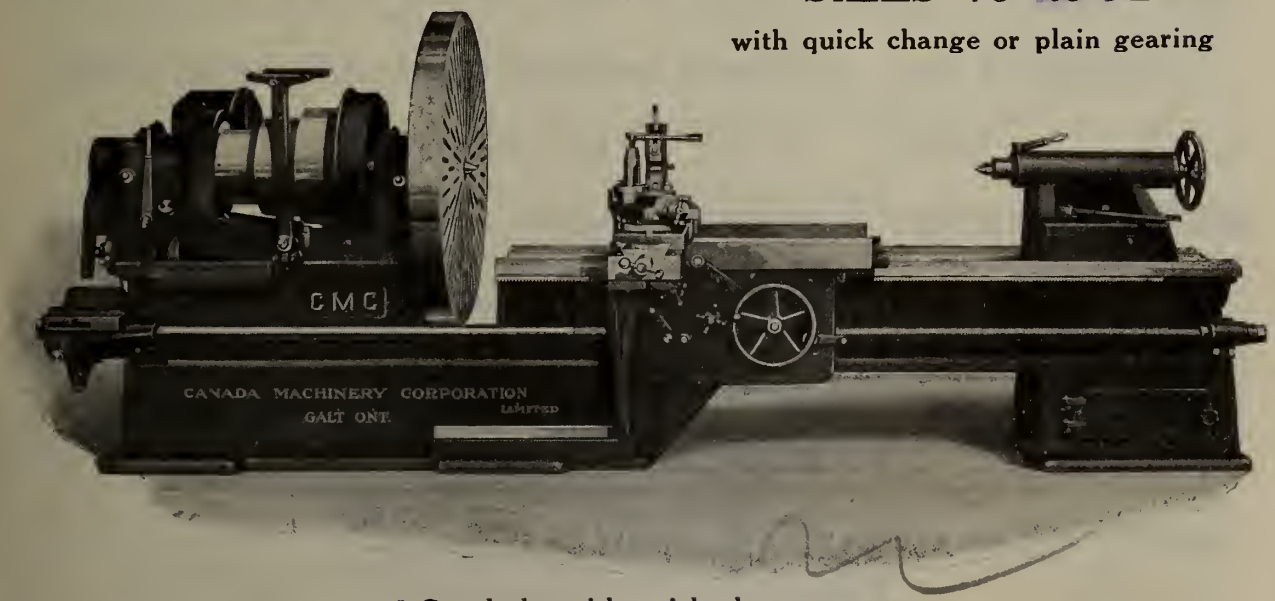
*Head Office:* MONTREAL *Branches:* Ottawa, Toronto, Winnipeg

C.M.C.

# GAP LATHES

SIZES 16" to 32"

with quick change or plain gearing




32" Gap lathe with quick change gears

CANADA MACHINERY CORPORATION, LIMITED, GALT, ONTARIO

Toronto Office and Warerooms, Brock Avenue Subway.

# The Star Brass Works

*Largest Exclusive Trolley Wheel Makers in the World.*

**Kalamazoo** **Michigan**

**Canadian Representatives:**

**Northern Electric Company, Limited**

Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

**Dawson & Co., Limited, 148 McGill St., Montreal**
**352 Donald St., Winnipeg**

# F. E. SMITH, LIMITED

IRON - STEEL - REFRACTORIES

MILL - FOUNDRY - SHIPBUILDING - RAILWAY SUPPLIES

PNEUMATIC TOOLS

Buyers and sellers of steel and iron scrap and second hand equipment of all kinds. Low phos. scrap our specialty.

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A LINE OF P♕H WROUGHT TUBULAR STEEL POLES ON THE BLOOR STREET VIADUCT—TORONTO, CAN.

MADE IN CANADA.

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# Tubular Poles

NEAT, UNIFORM AND ORNAMENTAL
in appearance, combined with
GREAT DURABILITY, STIFFNESS AND STRENGTH
make them ideal for
ELECTRIC LIGHT AND POWER
TELEPHONE, TELEGRAPH
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**Limited**
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PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK

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EQUIPPED TO
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Day or Night
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Repairs

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**FRICTION DRAFT GEAR**

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THE
PERFECT
DRAFT GEAR

**MINER**
**BALANCED**
**SIDE BEARING**

SAVES RAILS
WHEELS
AND COAL

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W. H. MINER
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50
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IN THE
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## Inferior Files Mean Waste Money

If your files fall short of *perfect* efficiency and reasonable length of service, you are throwing away money.

Famous File Files do a job as perfectly as it can be done, and do not dull quickly.

The steel in them is made from a special formula, the teeth are properly cut, and they are thoroughly hardened.

They get the best results with little effort. They *last*.

The Famous Five are:

KEARNEY & FOOT GREAT WESTERN
AMERICAN ARCADE GLOBE

Made in Canada by:

**Nicholson File Company**

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OVER
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A YEAR

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| Old Dominion Steamship Co. | TO | Washington |
| Southern Pacific Co. | | New Orleans |
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Frequent Sailing from West St. John. Further particulars upon request.

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Save Both Time and Money.

We have excellent facilities for handling freight of all kinds. Through bills of lading issued via all ocean lines, via Montreal.

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# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

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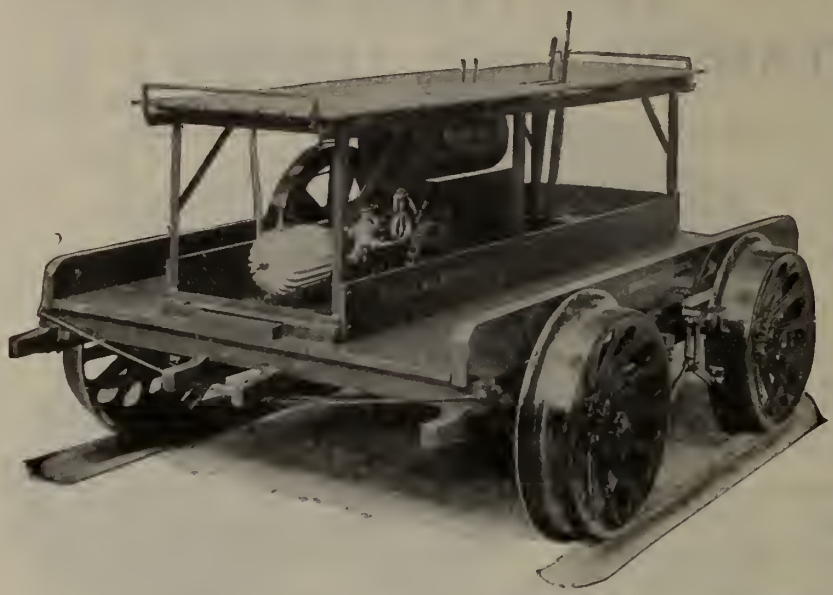
**Western Sales Office, Room 14, Windsor Hotel, Montreal**

# Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running all vibration being eliminated and runs equally well in either direction.

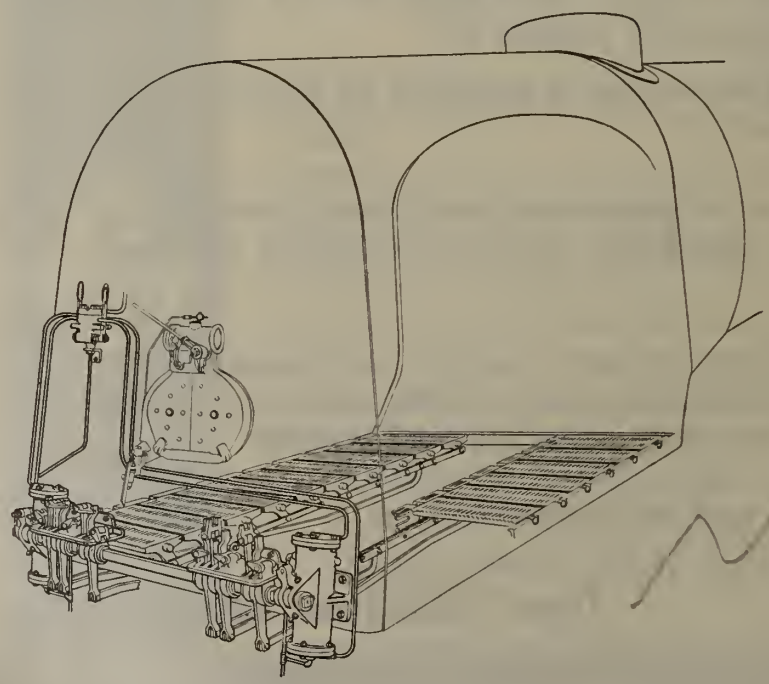
Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

## Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

# Air is Just as Necessary as Coal



Franklin Steam Grate Shaker

To keep a firebox hot.

16 pounds of air are needed to every pound of coal.

It is necessary to get this air through the grates.

This is impossible with a solid clinkered fire.

Franklin Steam Grate Shaker prevents clinkers and keeps the fire clean.

**Franklin Railway Supply Co. of Canada, Limited**

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# MARINE REFRIGERATION

ANHYDROUS AMMONIA ($N.H_3$.) COLD AIR MACHINERY CARBONIC ANHYDRIDE ($C.O_2$.)

Improved Ethyl Chloride Systems

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SOLE BRITISH LICENSEES AND MANUFACTURERS OF

"Viking" Rotary Pump Rotary Air Pumps and Blowers

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Makers of: "Union" Anti-Fouling and Anti-Corrosive Compositions. High grade material used by the British Government, Admiralty, and other prominent leading Organizations.

Shipbuilding Machinery and Ships Auxiliaries

# A. G. KIDSTON & COMPANY

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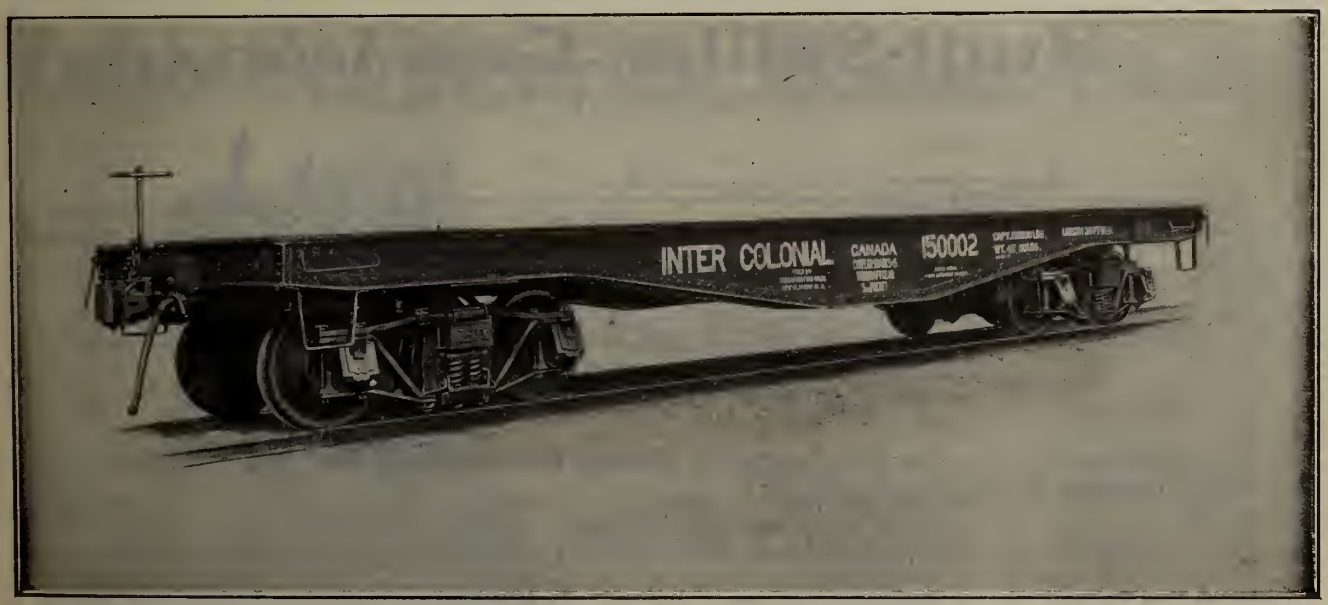


75 on Special Pit Car For Canadian Government Railways.

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We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

## Eastern Car Company, Limited

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# Murray Cast Steel Friction Draft Gear

MADE IN CANADA

If the superiority of this device has never been apparent to you, it will be upon thorough investigation. For it will reveal that our claims for excellence are based on actual facts.

May be used with any draft attachment.

In use on thousands of cars, including U.S. R.A. standard cars.

KEYOKE RAILWAY EQUIPMENT CO.

**Chicago, Ill.**

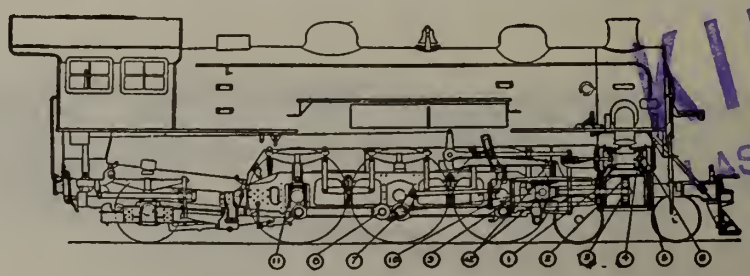
*Canadian Agents,*

**International Equipment Company Ltd., Transportation Building, Montreal, Quebec**

# Hunt-Spiller Gun Iron

12 OF THE PRINCIPAL PARTS OF A LOCOMOTIVE

1 Cylinder Bushing
2 Cylinder Packing
3 Pistons
4 Valve Bushings
5 Valve Packing
6 Valve Bull Rings



7 Side Rod Bushings
8 Knuckle Pin Bushings
9 Pedestal Shoes
10 Pedestal Wedges
11 Driving Boxes
12 Crosshead Shoes

Cylinder Bushings
Cylinder Packing
Pistons
Valve Bushings
Valve Packing
Valve Bull Rings
Pedestal Shoes
Pedestal Wedges
Crosshead Shoes

**As Your Engines Go Through the Shop Apply Hunt-Spiller Gun Iron**

FROM shopping to shopping is a familiar term where engines are already equipped with Hunt-Spiller Gun Iron.

This material has been tested out and adopted by many of the leading roads.

Due to its qualities, Hunt-Spiller Gun Iron successfully meets the requirements of a metal which will wear long with freedom from breakage.

If your engines are not now equipped, at the next shopping apply Hunt-Spiller Gun Iron to those parts which are subjected to the greatest wear and tear.

**Hunt-Spiller Gun Iron**

# Hunt-Spiller Manufacturing Corporation

W. B. LEACH, Pres. & Gen. Mgr. Office and Works: J. G. PLATT, Vice-Pres. & Sales Mgr.

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***Steel Ship Builders and Ship Repairers***

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Hull Repairs Electric Welding
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"The Universal Gas with the Universal Service"

Has earned its place by force of organized knowledge and facilities.

If you have a mental-working problem, we are pretty certain to have a tested plan to submit—a plan that will show you just what to do and how best to do it.

Send us a sketch and data. We'll send the answer—fair and unbiased—professional rather than commercial.

Our Engineers are at your service, whether you are an active user or a potential user.

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**Plants at: Toronto, Ont.; Merritton, Ont.; Shawinigan Falls, P.Q.; St. Boniface, Man.**

KILL LAST AD.

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Some of the most valued heating applications in industry were inspired or developed by Prest-O-Lite engineers. Their experience is rich in just such knowledge as may save you much loss through costly experiment or inefficient methods.

Prest-O-Lite Service is built upon proved ability to serve—ample plant and cylinder capacity, broad experience and a smooth-working nation-wide organization—the fundamentals without which service is no more than a name.

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**Reliable, Efficient and High-Grade**

Reilly Submerged Type Evaporator

We make and supply—
Reilly Feed Heaters, Reilly Evaporators,
Reilly Feed Filters, Reilly Distillers,
Mason Reducing Valves, Mason Pump Regulators.

"MADE IN CANADA" and guaranteed as to construction and service.

*We sell a general line of high-class and reliable Power Plant Equipment.*

Mason No. 126 Style Marine Reducing Valve.

## The Mason Regulator & Engineering Co. Limited

Office and Works:

135 to 153 Dagenais St. - - - - MONTREAL

THE MONONGAHELA CONNECTING RAILROAD COMPANY.
4166 Second Ave.,
Pittsburgh, Oct. 16, 1919.

Metal & Thermit Corporation,
Mr. Kelley, Manager,
Pittsburgh Office.

Dear Sir:—

At the request of your Mr. Gearhart, the following is the analysis of test made on a piece of Thermit metal taken after a weld on one of the frames on one of our locomotives. This was furnished me by the H. K. Porter Co. Elastic limit of 54420—tensile strength 80500—Elongation 23½% and reduction in area 42½%. Certainly the metal has shown up wonderful properties. The elastic limit is higher than any forgings of the same tensile strength.

Yours very truly,
(Signed) F. M. McNulty,
Supt. Motive Power.

No Wonder
THERMIT
Welds,

with their high mechanical strength, as shown by the attached letter, are better fitted than any other kinds of repairs for withstanding the ruthless buffeting to which locomotive frames and other heavy steel sections are subjected.

Send for Pamphlet *2144,* which shows you how you can save thousands of dollars by making your broken equipment fully as good as new by means of reliable Thermit repairs.

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Railway & Power Engineering Corp., Limited
133 Eastern Ave., Toronto, Ontario
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# BOLINDER'S HEAVY CRUDE OIL ENGINE

The New Motor Tanker "Katherine," equipped with 640 B.H.P. Bolinder Engines.

Suez, Egypt,
Febr. 16th, 1920.

Gentlemen:—

The M.S. "Katherine" arrived at Suez on the 15th, 37 days, 7 hours out of Manilla. The engines ran at full speed the entire trip. They never missed a stroke. Everything is in the very best of condition.

We had a light fair wind in the China Sea, calm sea from Singapore to the Red Sea and strong head winds in the Red Sea. The sails were in use but one day between Singapore and Suez (the Bolinder did it).

We will proceed to Rotterdam as soon as fuel can be taken aboard.

Respectfully,
FRANK UHLEIN,
Chief Engineer of the M.S. "Katherine."

The "Katherine" is one of several recent Bolinder installations—all demonstrating Bolinder Efficiency, Economy and Dependability.

## Swedish Steel and Importing Co., Limited

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# Canada's Premier Machinery House

NEW AND REBUILT

Ironworking and Woodworking Machinery
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We carry a large stock of New and Used Belting, Pulleys, Shafting, Hangers, Pipe and Fittings, Machinist's, Millmen's and Engineer's Supplies of every description.

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GRAND TRUNK RAILWAY SYSTEM

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## *Vacation Land of Perfect Summer Climate*

Hay fever unknown. One thousand to two thousand feet above the sea. Air scented with pine and balsam. Modern hotels in Algonquin Park, Muskoka Lakes, Georgian Bay, Lake of Bays, Kawartha Lakes and Timagami. A short, pleasant ride from Toronto, and you are in the midst of a charming summer playground. Fishing, boating, bathing, golf and the great out-of-doors. Write for free illustrated literature.

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**Convenience**
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**In Railway Oil Handling Equipment**
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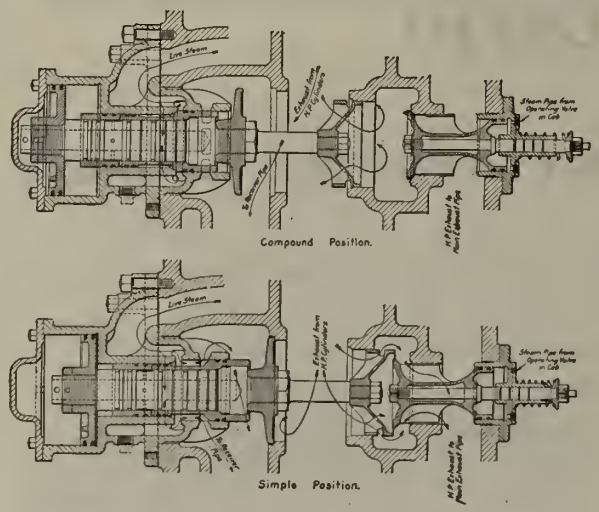
# Alco Intercepting Valve




In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

In the ALCO system of compounding these conditions are covered by two of the functions of the intercepting valve.

As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

## Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

THE ART OF STAYING—The locomotive fire box will advance in just that proportion as suitable and adequate means are provided to enable the fire box to expand under the least restriction.

STAYBOLTS BREAK—when the stress of fire box expansion is too severe, and fire sheets distort and crack when staybolts are too rigidly connected to same.

THE TATE FLEXIBLE STAYBOLT—is designed and made to give satisfactory results in the final measure of its usefulness, as an economic, safe and reliable factor in reducing the costs of fire box repairs and maintenance.

ANY ARTICLE THAT CONTRIBUTES—to the service value of the locomotive as an earning factor is well worth considering carefully. From the knowledge of what has been accomplished by the use of the Tate Flexible Staybolt, we feel confident that all our patrons are well aware of its true value.

## FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by CANADIAN ALLIS-CHALMERS, Limited, General Offices, Toronto, Ont.

# "STERLING"

# HACK SAW BLADES

Webster's Dictionary interprets the word "STERLING" as meaning pure, unadulterated and genuine.

These words apply to the Hack Saw Blade represented on this page. They are good. Give them a trial; they may help you out of your Hack Saw troubles.

KILL

LAST AD.

If you need assistance or advice in this line, write the manufacturer.

**Manufactured by**

## Diamond Saw and Stamping Works

357 Seventh St. Buffalo, N.Y., U.S.A.

# CANADIAN STEEL-TIRE AND WHEEL COMPANY, LIMITED

Locomotive and Car Wheel Tires
Steel Tired Wheels of all kinds

**Works:**
**Montreal East**

**Office:**
**Transportation Bldg., Montreal**

# Copper Trolley Wire
# Feeder Cable
# Wire Rope
## Ballast Cables, Switch Ropes and Wrecking Cables

IN stock at each of our warehouses we have a good assortment of standard sizes of Steel Wire Ropes in Siemens - Martin Steel, Crucible Cast Steel, Plough Steel and Extra Plough Steel.

*We also manufacture and carry in stock all kinds of*

**BARE and INSULATED ELECTRICAL WIRE and CABLE**

*Write our nearest office for quotations.*

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**LIMITED**

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After thorough investigation
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The Toronto Railway Company
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# National Pneumatic Door Control

NEW CAR OF TORONTO RAILWAY CO.—EQUIPPED WITH PNEUMATIC DOOR CONTROL

## NATIONAL PNEUMATIC COMPANY

**RAHWAY, N.J. NEW YORK CHICAGO**

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Complete Equipment for Electric or Gas Lighting of Railway Passenger Cars

Complete Apparatus for Harbors and Rivers—Buoys, Beacon Towers and Lanterns

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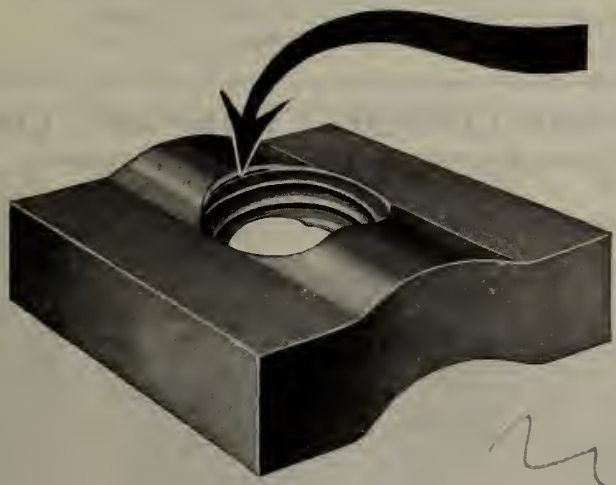
# THE GRIP NUT

Locks independently of the bearing surface.

Holds when slack develops.



The deflected threads.

## CANADA GRIP NUT COMPANY, Limited

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After five years general service and the most exacting tests, the Pinless Lid Journal Box is offered in Canadian Service.

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**LABOR SAVING MACHINERY**

Elevators-conveyors
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Coal Handling Machinery
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Peck Carriers

Coal Crushers
Chains-Screens-Buckets
Power Transmission Equipment

We will be glad to send catalogs on any of the above products, upon request.

**CANADIAN LINK-BELT COMPANY, LIMITED**

WELLINGTON AND PETER STREETS, TORONTO

Concrete Coaling Station. Note ease with which tender is being coaled.

Circular Coal Storage System. The modern method of storing coal adjacent to the coaling station.

View of loading end of two Peck Carriers in Coaling Station. Note arrangement of receiving hoppers, with double reciprocating feeder supplying a crusher over each carrier.

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LATERAL MOTION TRUCK DEVICE
ROLLER SIDE BEARINGS—PASSENGER, FREIGHT, LOCOMOTIVES
70-TON DOUBLE ACTION TRUCK, LATERAL AND RADIAL MOTION
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The intrinsic value of Berry Brothers' especially adapted Finishes for Railway and Marine use has been known to discriminating buyers for more than sixty years.

These products embrace—Varnishes, Enamels, Stains, Colors, Fillers, Surfacers, Primers, Driers, Shellac, Lionoil—Clear and in Colors—Lionoil Rustproof Coating Varnish Remover, etc.

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Worlds Largest Makers
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KILL
LAST AD.

# Thomas Rail Anchor Tie Plate

**Chicago Malleable Castings Co., West Pullman, Chicago, Ill.**

THE RIGHT WAY—
THE TWO WAY—
THE TIGHT WAY

Rail Seat inclined and pedestaled
Hook on inside flange of Rail

**MADE IN CANADA**

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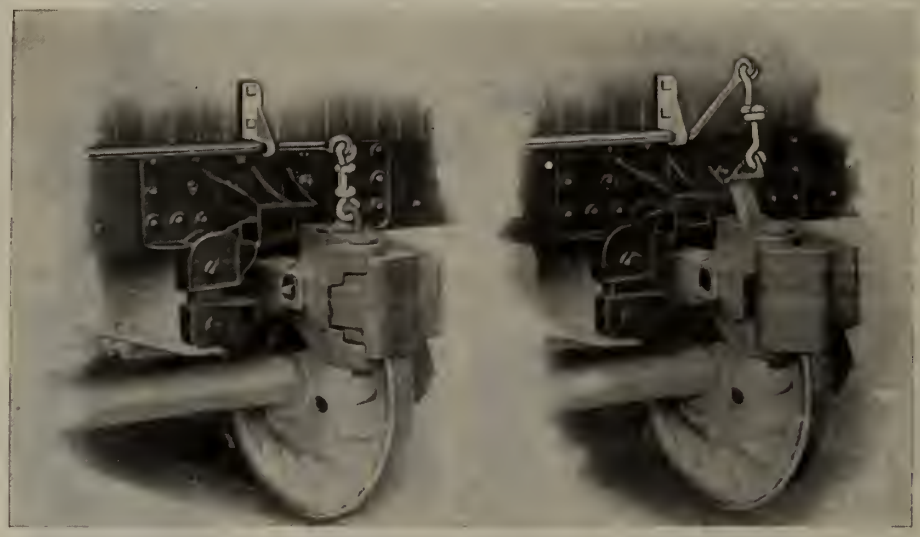
# RAMAPO

AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps*
*Double Shoulder Solid Bottom*
*Switch Riser Plates*

SWITCHES
FROGS AND CROSSINGS
MANGANESE TRACK WORK A SPECIALTY

CANADIAN RAMAPO IRON WORKS, LIMITED
NIAGARA FALLS, ONT., CANADA



# "URECO"

Coupler Release Rigging
(PATENTED)

Positively Prevents
Penalty Defects

Requires No Change
in Your Standard
Hand-Rod

Complies with U.S.R.R.
Administration Requirements

UNION RAILWAY EQUIPMENT CO., McCORMICK BLDG., CHICAGO, ILLS. *Works:* Hammond, Indiana

# AN INSTITUTION THAT SERVES

The service which Locomotive Superheater Company engineers render is a guarantee that the interests of a ship owner are properly safeguarded.

No more valuable service is that of instructing the men responsible for the successful and profitable operation of a superheated ship.

Because there is nothing mysterious about high degree superheating, any man of average intelligence can operate a superheated ship after a few hours of instruction by our service engineers.

Locomotive Superheater Company engineers are always on hand before the superheated ship is placed in service to co-operate with the engineer force and help them.

Such service insures to the ship owner the profitable operation of all ships equipped with fire tube superheaters.

KILL
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Save money by using

## The HOLD TITE NUT LOCK

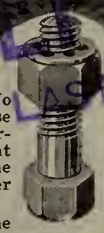
*(Patented)*

THE LATEST AND LAST in a NUT LOCKING DEVICE

TWO CLAIMS are made proving the Superiority of the Hold Tite Nut Lock.

CHEAPNESS. Look at the Washer! Nothing can be made cheaper.

EFFICIENCY. We guarantee that no vibration can remove it.



WHAT MORE? NOTE THE SIMPLICITY—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

**Edward A. Robinson Co., Limited**

228 Craig St. West Montreal

THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF

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## COPPER AND BRASS

SEAMLESS TUBES, SHEETS AND STRIPS IN ALL COMMERCIAL SIZES

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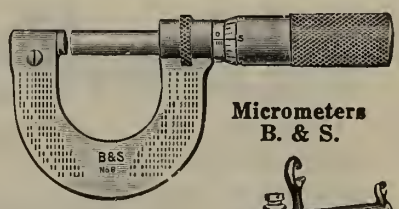

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"Vulcan" Pipe Vises and Pipe Wrenches

In addition to the tools shown, our line includes Set Screws, Cap Screws, Machine Screws, High Speed and Carbon Drills, Files (extra large stock) and a complete line of machinists' tools (Starrett, Brown & Sharpe, etc.)

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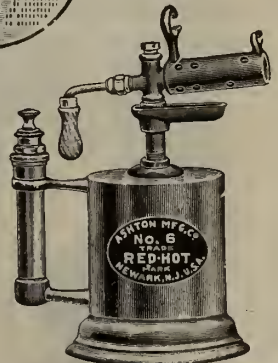


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Such as carbon plates, rods, and paste. With the use of Columbia Welding Carbon Products it is possible to perform the heaviest welds on castings without dismantling, to reinforce a weld to any strength desired, to make a vertical weld, and to make numerous other types of welds where the flow of metal must be restricted to a definite area.

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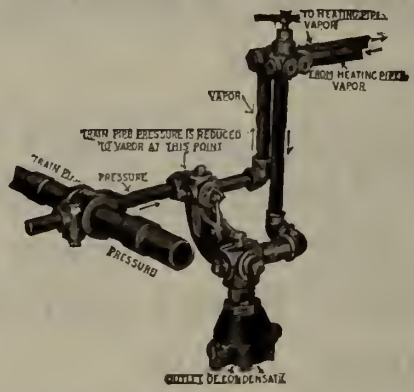


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Lagonda Cleaner Removing Scale from Arch Tubes.

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The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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of all descriptions

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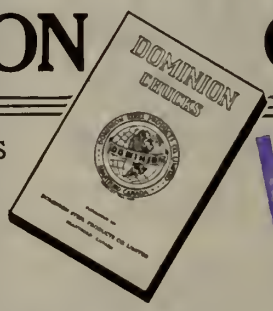


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Chuck troubles in our own plant compelled us to design and manufacture for our own use the **Dominion Chuck.** It has proved satisfactory under the test of heavy duty service and the most exacting work. We are manufacturing this chuck either in all-steel or iron bodies—sizes 10 to 24 inches. *Write for our Chuck Book.*

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*Engineers • Manufacturers*
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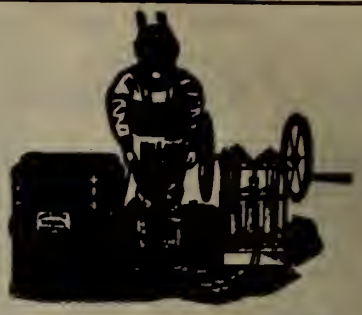

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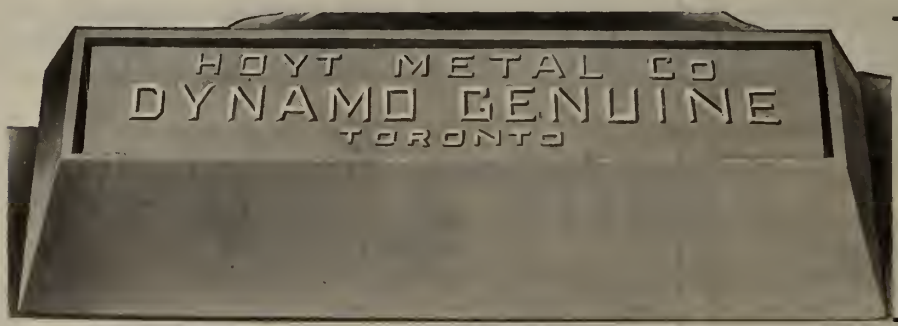


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**Montreal, Canada**

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Molten metal exposed to the air quickly oxidizes. Weld metal containing oxide is weak and brittle. Sound autogenous welding requires that all oxide and scale be removed. Steel gives little trouble in welding because its oxide melts under the oxy-acetylene flame and floats to the top, but the oxides of other metals in general must be floated and dissolved by fluxes suitable for each metal.

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## Manufactured in Canada by Canadian Workmen

A Pilling Tractor in operation in Canada

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# Canadian Railway AND Marine World

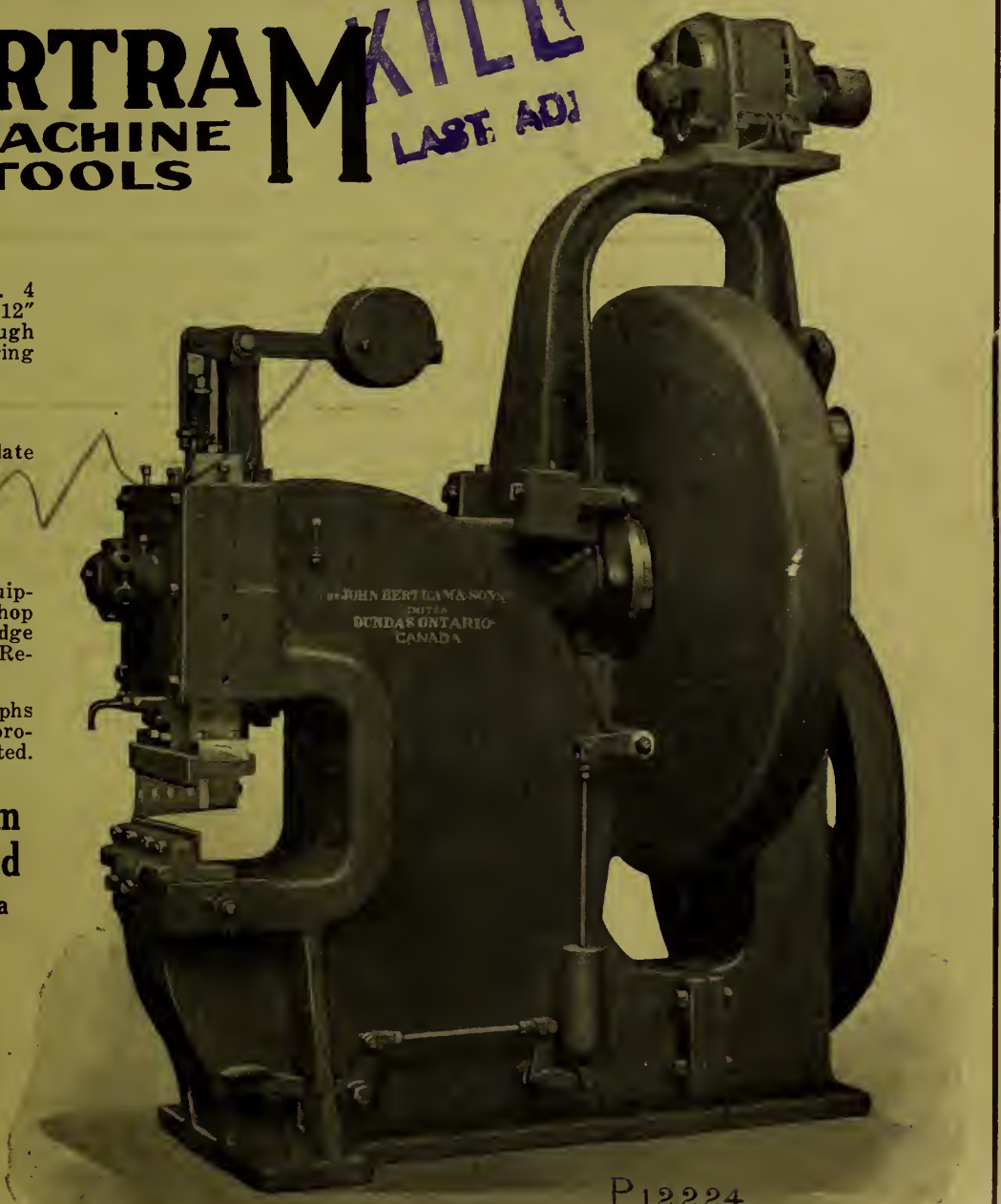
ESTABLISHED 1898.

Number 268 | TORONTO, CANADA, JUNE, 1920 | Subscription Rates, Page 303



## BERTRAM MACHINE TOOLS

KILL LAST ADJ




P12224

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### Capacity

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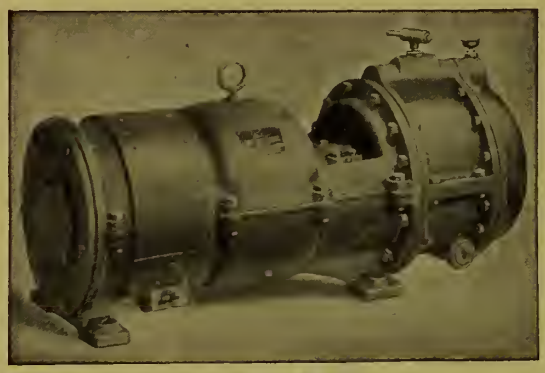
# Westinghouse One-Kilowatt Turbine Generators



These outfits will be found extremely useful for contracting operations of all kinds, on steam shovels, steam launches, small industrial work, etc.

They will operate an arc lamp and a few Mazda lamps at the same time, or, if only incandescent lamps are desired, about forty 25 watt Mazda lamps or their equivalent.

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Our engineers have a fund of experience in draft arm work which is yours to profit by. This is the time to equip your cars with Economy Draft Arms.

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MONTREAL, QUE.

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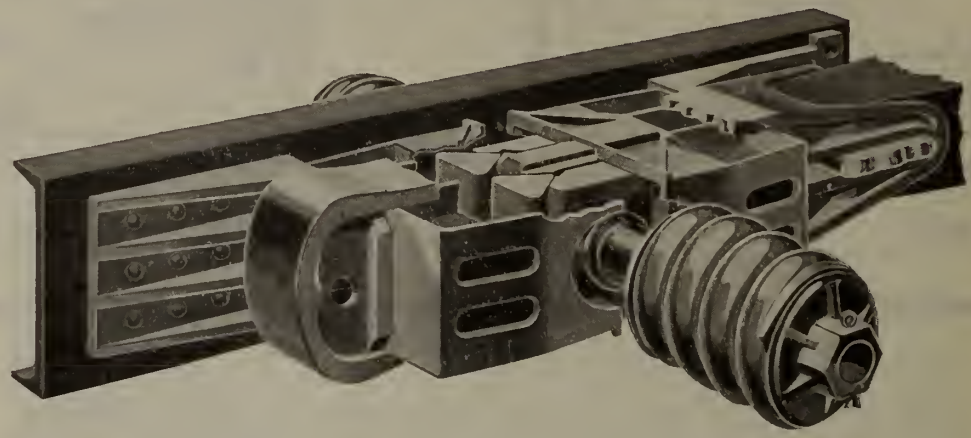

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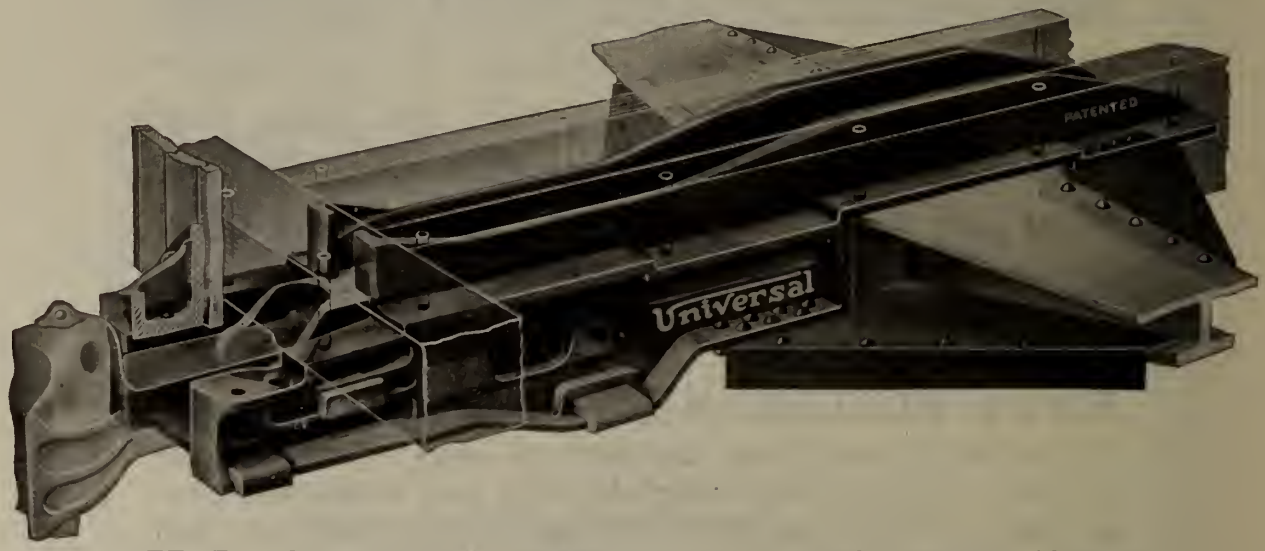


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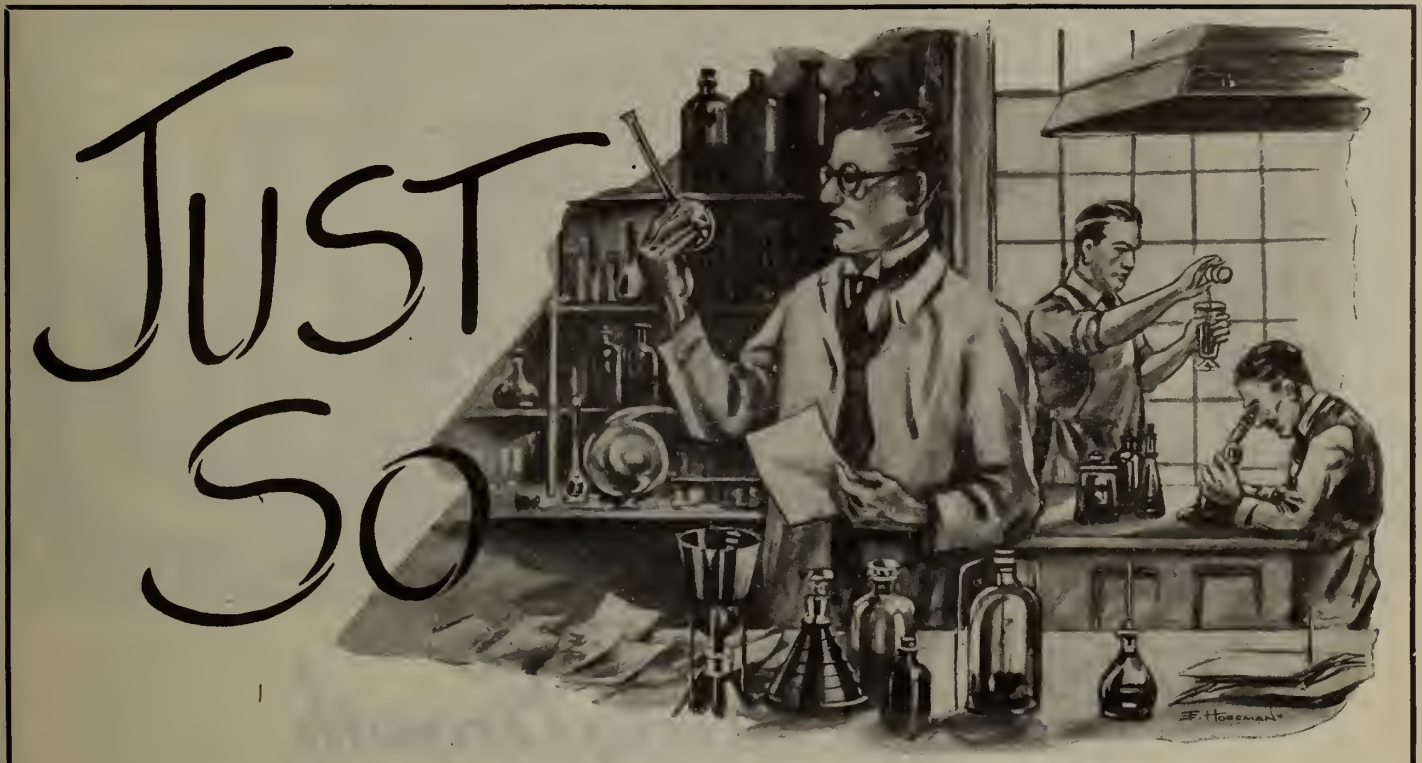


# Always the Same

Galena Oils *must* be uniform—no "guess work" can enter into their preparation. Compounded scientifically, quality and uniformity are determined by the most careful analytical tests. This is a distinctive feature of Galena products that has gained for them an international reputation.

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So with the new year Nineteen-Twenty before us, we are ready to enter an era of progress with an even broader conception of how best to serve and satisfy both our old and our prospective customers.

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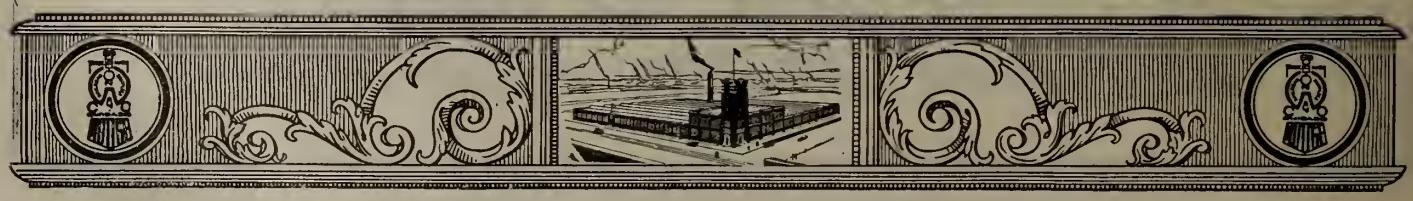
Canuck Supply Co., Ltd., *Canadian Representatives*

Montreal Toronto Winnipeg



Acid and Basic Open-Hearth Steel

and

Ferro-Alloy

# CASTINGS

up to 50 tons

LOCOMOTIVE AND CAR CASTINGS—COUPLERS
MARINE CASTINGS—MACHINERY CASTINGS
HYDRAULIC PRESS CASTINGS—BRIDGE CASTINGS
ROLLING MILL ROLLS—MACHINE-MOULDED GEARS, ETC.

---

# RAILWAY TRACKWORK

BUILT-UP, HARD-CENTRE AND SOLID MANGANESE-STEEL CONSTRUCTION
SWITCHES, MATES, FROGS, CROSSES, DIAMONDS

## COMPLETE INTERSECTIONS

FOR STEAM AND ELECTRIC RAILWAYS

*Manufacturers of Balkwill Articulated Manganese-Steel Crossings.*

---

## CANADIAN STEEL FOUNDRIES LIMITED

TRANSPORTATION BUILDING

MONTREAL

"60" Vessels

Canada's Commerce Carriers

"Total" Tonnage 325,000

# Canadian Government Merchant Marine, Limited

**Now Afloat:**

| | | |
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| "CANADIAN PLANTER" | "CANADIAN PROSPECTOR" | "CANADIAN FARMER" |
| "CANADIAN INVENTOR" | "CANADIAN BEAVER" | "CANADIAN SEALER" |
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| "CANADIAN IMPORTER" | "CANADIAN MILLER" | "CANADIAN AVIATOR" |
| "CANADIAN EXPORTER" | "CANADIAN ADVENTURER" | "CANADIAN SOWER" |

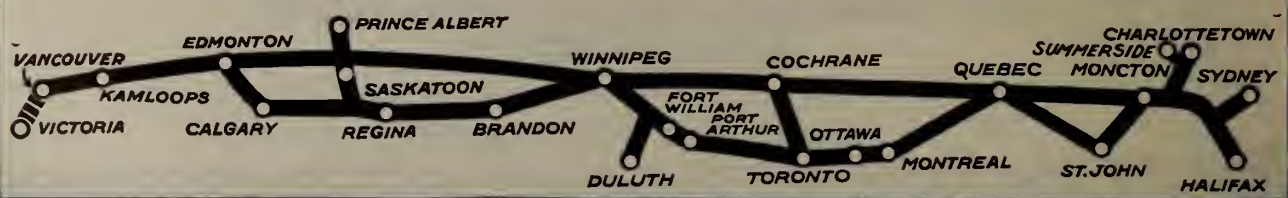
Weekly Freight Service to United Kingdom from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Fortnightly Freight Service to West Indies and Cuba from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter. Monthly Freight Service to Australia and New Zealand from Vancouver.

**For further information apply to any Canadian Railway Agent or**

D. O. WOOD,
Traffic Manager, Exp. & Imp. Dept.,
Canadian National Rys.,
Toronto, Ont.

GEORGE E. BUNTING,
Ontario Freight Agent,
Room 704 Royal Bank Bldg.,
Toronto, Ont.

W. A. CUNNINGHAM,
Exp. & Imp. Freight Agt.,
230 St. James Street,
Montreal, Que.




# Canadian National Railways

# COAL PUSHERS

*On the*

## CANADIAN NATIONAL RAILWAYS

## Coal Pushers Save Steps and Long Reaches

Slope Sheet Coal Pushers are installed on 81 locomotives of the Canadian National Railways.

By the operation of a simple valve in the cab, the Coal Pusher brings forward within easy reach of the scoop a plentiful and continuous supply of coal. Thus the fireman is saved many steps and long reaches.

Over 1,200 Coal Pushers are in service on the lighter locomotives in Canada and the United States, including Mikado, Consolidation, Atlantic, Pacific, Prairie and Switcher types.

Send for descriptive literature.

*Over 1,200 of Our Coal Pushers in Service*

# Locomotive Stoker Company

Railway Exchange
Chicago, Ill.

Main Office and Works
Pittsburgh, Pa.

50 Church St.
New York

# Railway Equipment

Locomotive and Car Castings

Cast Steel Couplers
(Type "D" and "Penn.")

Cast Steel Truck Bolsters and Side Frames

Tender Truck and Car Axles

Forging Billets

Car Plate

# Marine Equipment

Stern and Rudder Frames

Marine Engine Castings

Deck Castings

# DOMINION FOUNDRIES AND STEEL, LIMITED

HAMILTON, CANADA.

# GENERAL RAILWAY SIGNAL COMPANY
## OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track.

A-C. and D-C. Automatic Block Signals for Double Track

## Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signalling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

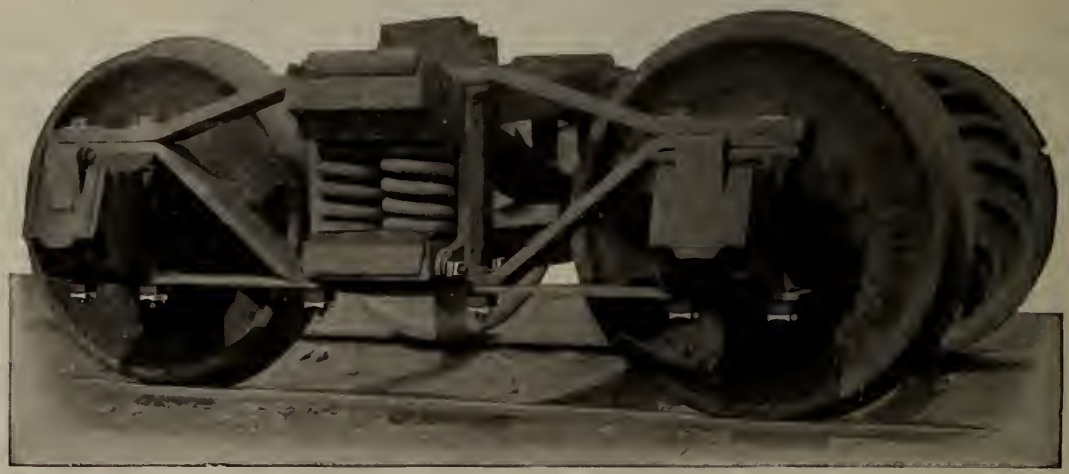
**Head Office and Works**
**LACHINE, QUEBEC**

# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***



Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

## Boss Lock Nut Company
### of Canada, Limited

*Write for latest catalogue.*

HEAD OFFICE:
**263 St. James St.**
**MONTREAL, Que.**

**McIntyre Block**
**Winnipeg, Man.**

# COAST TO COAST

## STEEL & IRON PRODUCTS OF EVERY DESCRIPTION

KILL
LAST AD.

## THE STEEL COMPANY OF CANADA LIMITED

HAMILTON MONTREAL

KIL
LAST AD.

Maintaining fast train schedules with absolute safety and the efficient maintenance of track, the foundation of your revenue earning power, are two problems which continually confront the railroad officials of to-day.

By using

# Hipower Nut Locks

on your rail joints, frogs, switches and crossings, you will retard if not eliminate initial looseness caused by the continual grinding wear, later compensate for this wear, and keep all bolted parts on your track tight.

When track bolts are of strength sufficient to withstand the applied load, Hipower Nut Locks provide the necessary resilience to diffuse the shock and protect the jointed parts.

ESTABLISHED 1886

## The National Lock Washer Company

Newark, N. J.

New York Chicago Detroit

# Mill Type Products

## Smoke Jacks, Ventilators and Doors

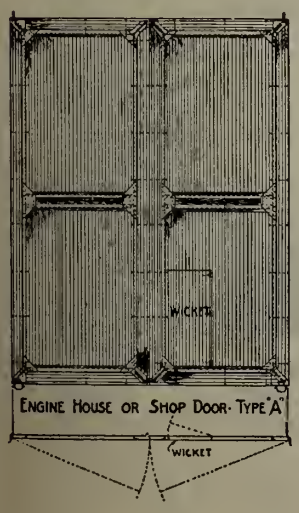
Another successful Mill Type Smoke Jack installation—C.P.R. West Toronto Yards

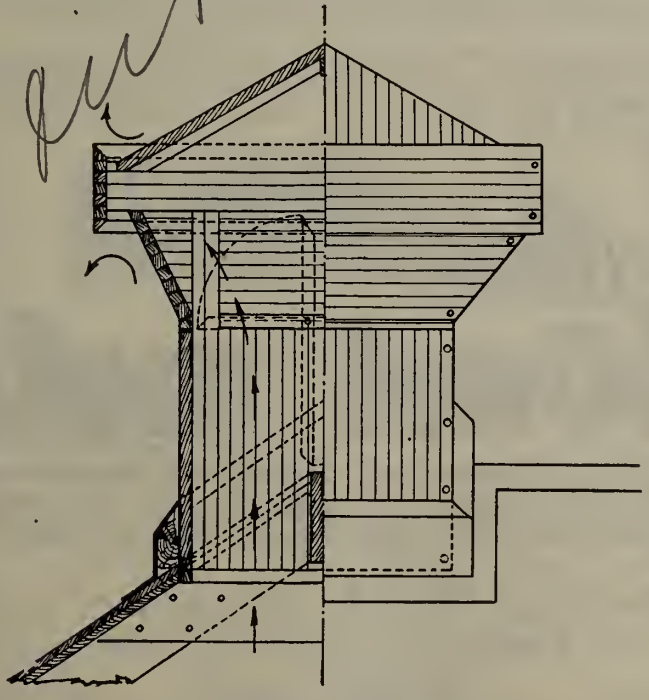
## IS THIS NOT PROOF ?

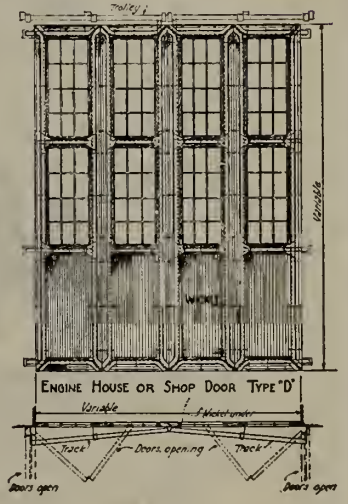
## 185 MILL TYPE SMOKE JACKS IN ONE ORDER !

**This is an order we have received from one of the largest railways in Canada, and only proves further that the Mill Type Smoke Jack is in a class by itself, and that it is only a question of time before it will be the standard on all railroads.**

WRITE FOR OUR BULLETIN COVERING ADDITIONAL MILL TYPE PRODUCTS WE MANUFACTURE






Ventilator for Flat Roof

**WILLIAMS & WILSON LIMITED**

84 INSPECTOR STREET
MONTREAL, - QUE.

SOLE MANUFACTURERS FOR CANADA

# NO SHEATHING TROUBLES SINCE 1913

FIREBOAT, Engine 31, of the Boston Fire Department, is habitually moored in the Northern part of Boston harbor, where, in addition to salt water corrosion, her hull is constantly exposed to gas house waste.

For a long time chemical and electrolytic action made it almost impossible to keep the copper sheathing fast to the hull.

But in 1913 Monel Metal nails were used. Since then **no** trouble has been experienced—and the only repairs called for have been where the copper itself yielded to corrosion. The Monel nails are in as good condition today as they were seven years ago.

Monel Metal is practically proof against salt water corrosion—its use in pump rods, turbines, screens, bolts—especially when subject to stress and vibration—is recommended by the success of extensive and severe usage.

INCo Monel metal

The name Monel Metal is given to a line of metal products developed from a natural alloy—67% nickel, 28% copper, and 5% other metals. These products include Monel Metal rods, Monel castings, Monel strip stock, Monel sheets, etc. Monel Metal may solve your difficulties—our Technical or Sales Department will gladly cooperate with you.

The International Nickel Company of Canada, Ltd.
HARBOUR COMMISSION BUILDING
TORONTO, ONT.

INCo MONEL METAL TRADE MARK

INCo NICKEL TRADE MARK

# Barrett Roofings, Cements Industrial Paints etc.

BARRETT PRODUCTS are the final result of exhaustive research and manufacturing experience that covers half a century. This is why they are the best—and they have been proven by many thousands of satisfied users in Canada.

## Elastigum Plastic Patching Cement

Elastigum is composed of a heavy bituminous base, combined with slow-drying, waterproof oils and a sufficient proportion of mineral fiber to give it consistency and holding power.

Elastigum is remarkably tenacious and retains its toughness and elasticity over long periods, regardless of temperature or weather conditions, expanding and contracting in conformity with any surface to which it is applied, whether metal, stone, concrete, wood or even such highly glazed surfaces as glass, glazed brick or terra-cotta. It is known as the "plastic cement of a thousand uses."

No heating or mixing necessary. Elastigum comes to you all ready for use, in the following sized packages: 1-lb. tins (cases of 24 cans), 5-lb. packages (12 to the case), 25-lb. packages, 100-lb. packages, ½ barrels of about 300 lbs., and barrels of about 600 lbs.

## Everjet Industrial Paints

Railroads and manufacturing companies throughout the Dominion find constant use for these "Proven Protective Paints". Exceptionally durable and absolutely water-proof, as well as non-corrosive, they are the most popular of all Barrett products.

Barrett Industrial Paints include—

Everjet Boiler Paint — Everjet Bridge Paint
Everjet Roof Paint — Everjet Pen-stock Paint
Everjet Smoke-stack Paint — Everjet Machinery Paint

Put up in 1, 5, and 10 gallon cans, half barrels and barrels. Our service Department, composed of experienced chemists, will be glad to help you solve your paint problems.

## Nox-Aer-Leek Boiler Setting Cement

A leaky boiler-setting is fatal to fuel economy, and *every* brick boiler setting is more or less leaky.

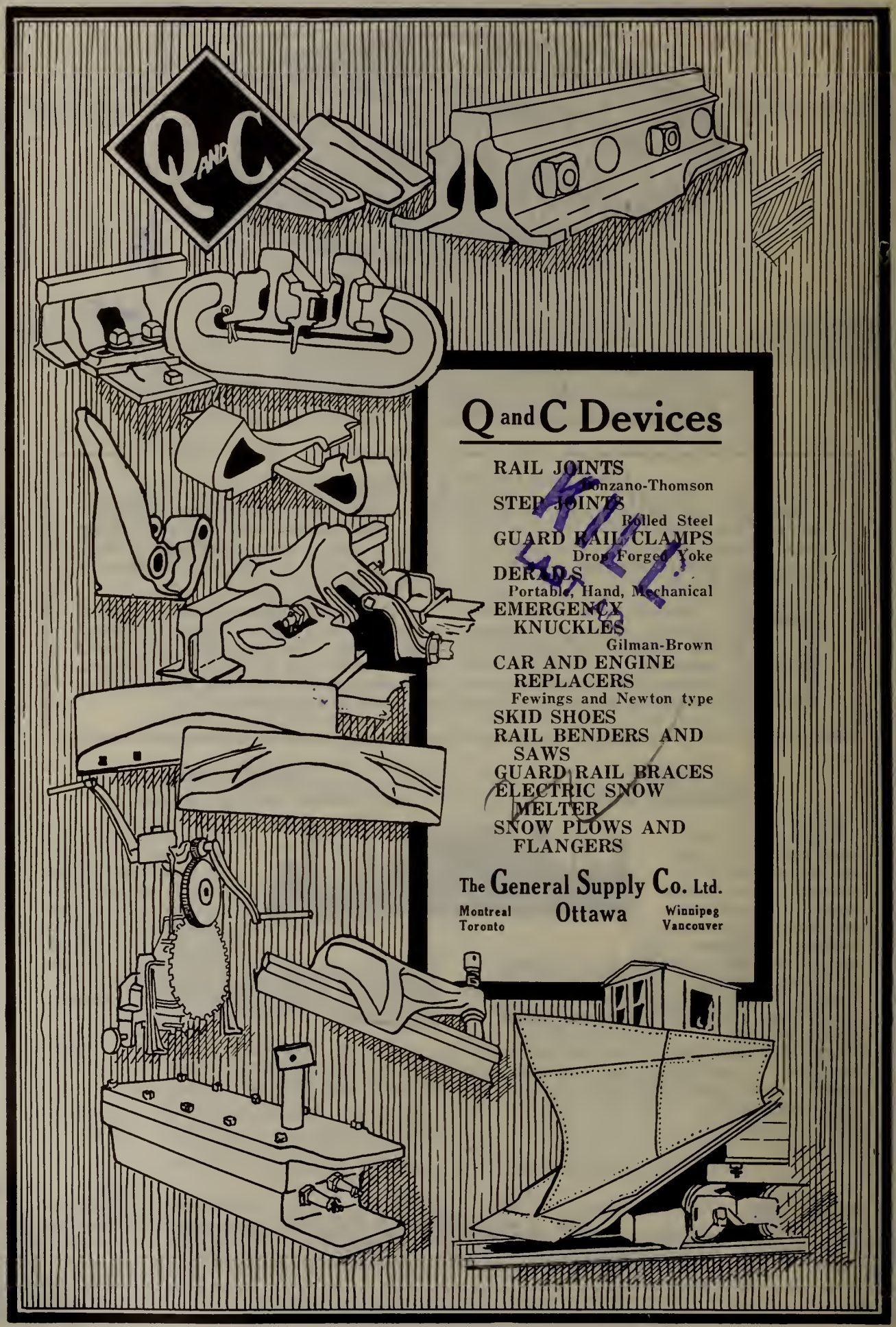
Barrett Nox-Aer-Leek overcomes this condition. It is a plastic cement of elastic bitumen, fused with non-drying oils and asbestos fiber. Applied to the exterior walls, it renders boiler-settings absolutely air-tight and moisture-proof.

You will find it sound economy to use Nox-Aer-Leek. Its small cost is repaid many times over by the saving in fuel expense.

Put up in ½ barrels (about 300 lbs.) and barrels (about 550 lbs.).

*If your dealer cannot supply you with these "Proved Products" write us and we will.*

ST. JOHN, N.B., HALIFAX, N.S. SYDNEY, N.S. — The Barrett Company LIMITED. — MONTREAL TORONTO WINNIPEG VANCOUVER


Q AND C
Q and C Devices
RAIL JOINTS
Monzano-Thomson
STEP JOINTS
Rolled Steel
GUARD RAIL CLAMPS
Drop Forged Yoke
DERAILS
Portable, Hand, Mechanical
EMERGENCY KNUCKLES
Gilman-Brown
CAR AND ENGINE REPLACERS
Fewings and Newton type
SKID SHOES
RAIL BENDERS AND SAWS
GUARD RAIL BRACES
ELECTRIC SNOW MELTER
SNOW PLOWS AND FLANGERS
The General Supply Co. Ltd.
Montreal
Toronto
Ottawa
Winnipeg
Vancouver

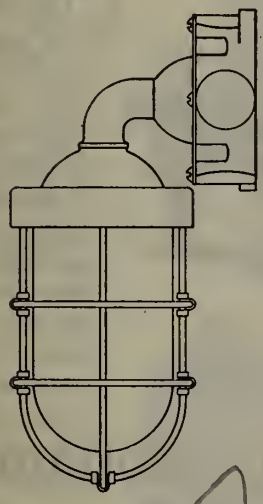
## "CANADIAN WARRIOR"

3,995 TONS D. W.

Built for the Department of Marine by the

COLLINGWOOD SHIPBUILDING COMPANY

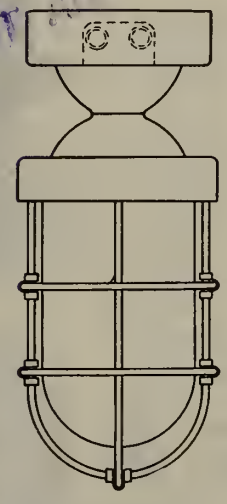
Collingwood, Ontario



Inside Deck Fitting

## A Steel Cargo Vessel

This vessel was recently delivered to the Canadian Government. She is wired throughout with Cables and Fittings approved by the Department of Marine and *manufactured by*



Outside Deck Fitting

Three Conductor Wire Braided Lead Covered Marine Cable

Two Conductor Wire Braided Lead Covered Marine Cable

# Northern Electric Company

LIMITED

MONTRÉAL
HALIFAX
QUEBEC

OTTAWA
TORONTO

LONDON

WINNIPEG
REGINA

CALGARY
EDMONTON
VANCOUVER

Single Conductor Wire Braided Lead Covered Marine Cable

# EVAPORATORS

## The New Weir Evaporator

WEIR PATENT
CONTINUOUS BRINING &
AUTOMATIC FEEDING.

### Embodies Three Important Improvements

1. The Patent Brine Ejector.
2. The Automatic Feed Regulator.
3. The Special Tube Coupling.

These devices ensure uniform efficiency, simplify working, and lessen costs of upkeep.

They are fully described and illustrated in our New Evaporator Booklet—Send for it.

## G. & J. Weir, Limited, Scotland

MADE IN CANADA

Contractors to the British Admiralty and War Office and to the Governments of Australia, Canada, Egypt, India, New Zealand, South Africa, Argentine, Belgium, Brazil, Chili, Denmark, France, Greece, Holland, Italy, Japan, Norway, Portugal, Russia, Siam, Spain, Sweden, United States, Etc., Etc., also to the leading Steamship Lines and principal municipalities throughout the world.

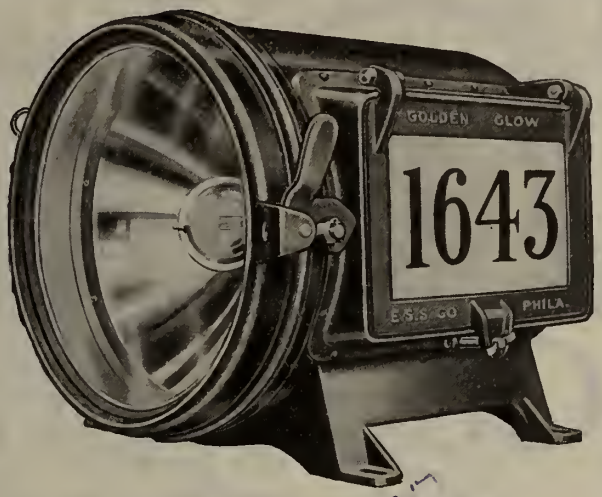
MADE IN CANADA

Sole Agents

## PEACOCK BROTHERS, LIMITED
MONTREAL

# "Golden Glow" Headlights Are Guaranteed

"Golden Glow" Locomotive Headlights equipped with 14-inch "Golden Glow" reflectors, 250 watt, 32 volt standard locomotive headlight lamps, properly focussed, and the reflector wiped clean, are guaranteed to meet all the requirements of the Interstate Commerce Commission.



# KEYSTONE LOCOMOTIVE HEADLIGHT EQUIPMENT

## "GOLDEN GLOW" HEADLIGHTS

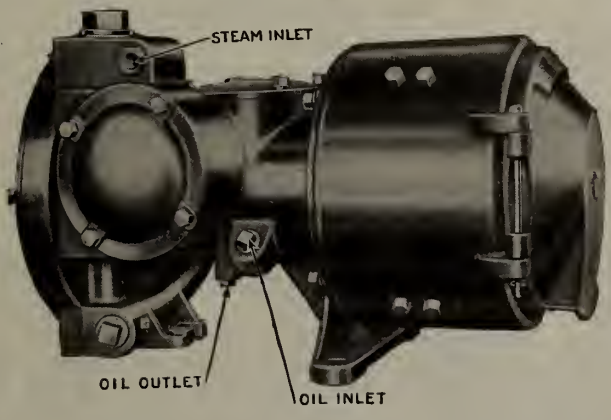
"Golden Glow" Locomotive Headlights are fitted with that same greenish glass reflector which has been used so extensively in the electric railway field. This reflector projects a soft golden yellow light that is not nearly so blinding and is a great deal more penetrating in misty weather than a brilliant white light.

Write for Bulletin 155.

## TURBO-GENERATORS

The "Keystone" Turbo-Generator is remarkably simple, compact and efficient. It gives great satisfaction in operation with a very low maintenance cost in labor and repair parts.

Write for Bulletin 154.




## HEADLIGHT SWITCHES

"Keystone" Locomotive Headlight Switches are rugged and simple in construction. They offer a satisfactory, durable and easy means for controlling "Golden Glow" or any other type of electric headlight.

Their simplicity makes inspection and repair a matter of little effort, which has a pronounced effect on their maintenance cost.

Write for data sheets.

**Electric Service Supplies Co.**

*MANUFACTURERS*

PHILADELPHIA 17th and Cambria Sts. NEW YORK 50 Church St. CHICAGO Monadnock Bldg.

**Lyman Tube & Supply Co., Ltd.**

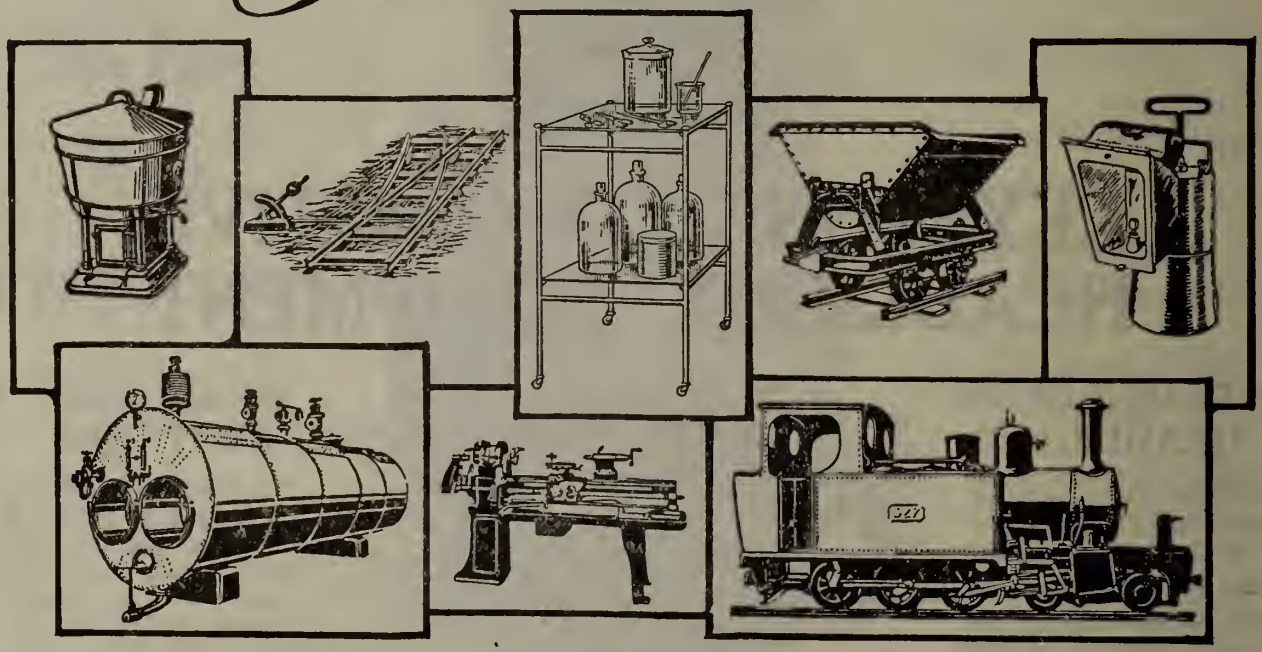
*CANADIAN DISTRIBUTORS*

MONTREAL Lyman Tube Bldg. WINNIPEG 703 Confederation Life Bldg. TORONTO 33 Melinda Street

GR

MINISTRY of MUNITIONS

# GOVERNMENT PROPERTY For SALE



The Disposal Board
have

## STOCKS

lying in the United Kingdom and Available for Export
of

## ENGINEERING STORES

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| Ferrous and Non-Ferrous Metals | Contractors' Stores | Agricultural Machinery |
| Plant and Machinery | Electrical Instruments and | Aircraft |
| Steam Engines and Boilers | Machinery | Furniture |
| Factory Stores | Medical Stores | Textiles and Clothing |
| Machine Tools | Chemicals and Explosives | Boots and Leather Equipment |
| Railway Material | Motor Vehicles | Motor Boats, etc., etc. |

Buyers should instruct their representatives in the United Kingdom to communicate with D. B. 8 Canadian Export Department, Ministry of Munitions, Whitehall Place, S.W.

Cable address: "DISPEXPORT, MUNORGIZE, LONDON."

# NATIONAL TROLLEY GUARD

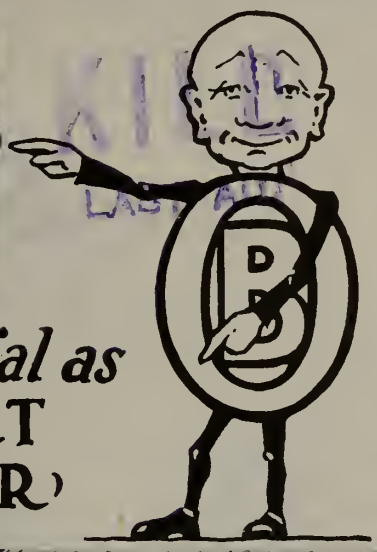
It is cheaper to buy a circuit breaker than to replace a generator damaged by a short circuit.

It is cheaper to buy National Trolley Guard than to replace a car and settle damage suits for injuries.

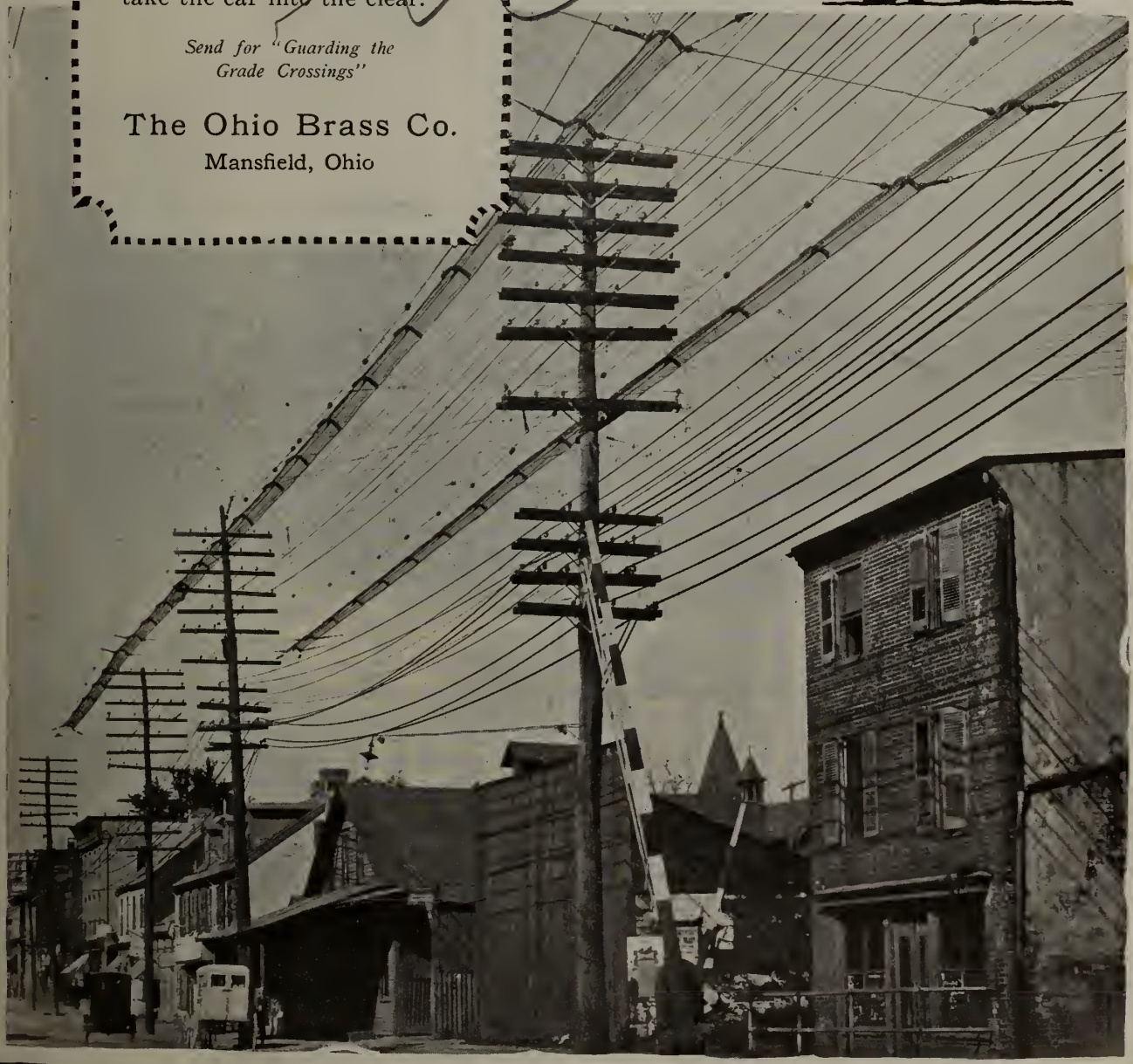
National Trolley Guard is an inverted trough of open wire mesh placed over the trolley at railroad crossings. It catches the wheel when it jumps and furnishes power to take the car into the clear.

*Send for "Guarding the Grade Crossings"*

The Ohio Brass Co.
Mansfield, Ohio



*As Essential as a* CIRCUIT BREAKER



# CANADIAN VICKERS, MONTREAL LIMITED

## Shipbuilders, Engineers, Boilermakers

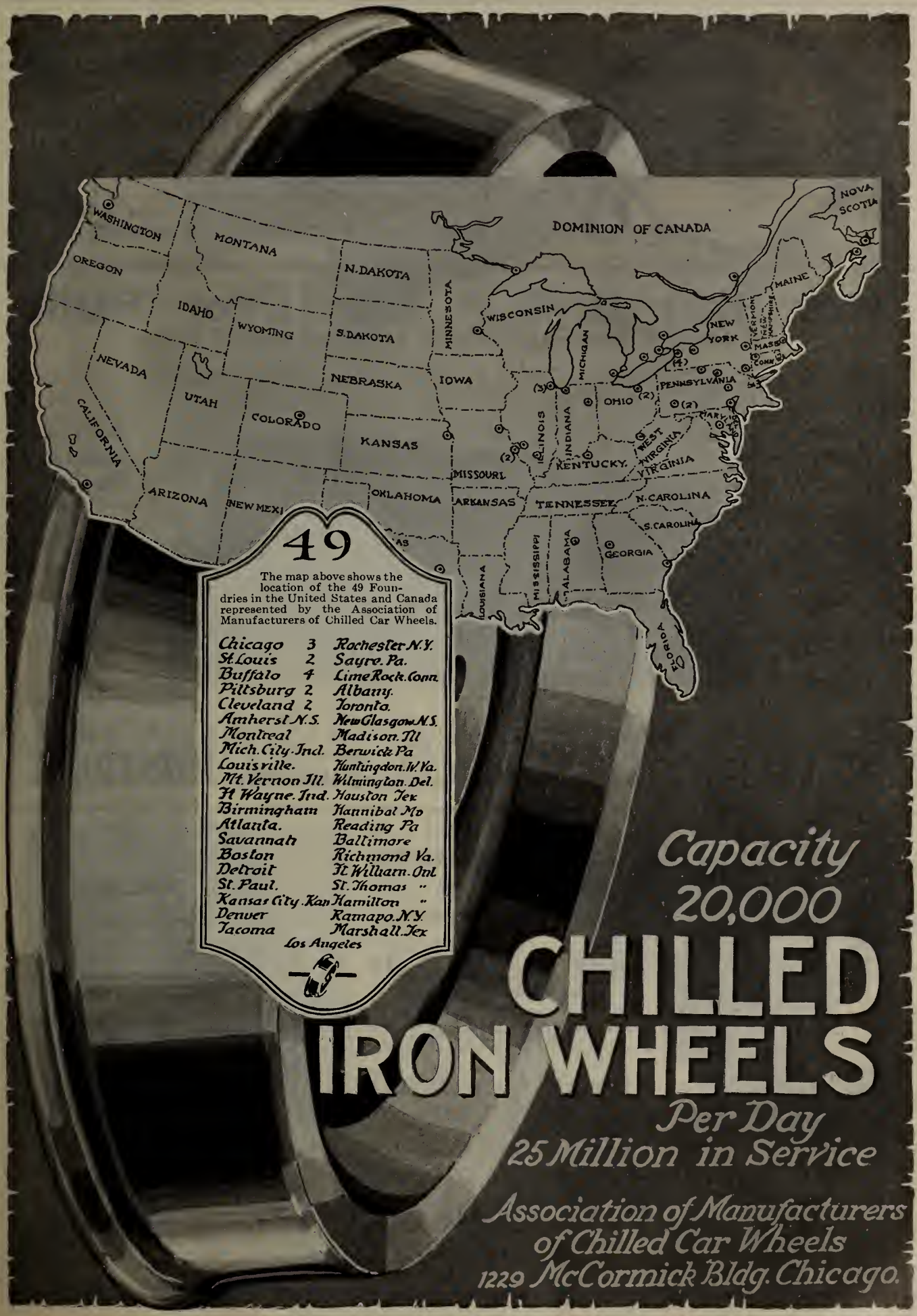
S. S. CANADIAN PIONEER
for Canadian Government Merchant Marine

Makers Under License Best British Designs

WINCHES, WINDLASSES, ASH HOISTS,
STEERING GEARS, TELEMOTORS

*Immediate Deliveries from Stock*

*Cables:*
VICKERS, MONTREAL


WASHINGTON
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WYOMING
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UTAH
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ARIZONA
NEW MEXI
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WISCONSIN
ILLINOIS
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INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
S.CAROLINA
N.CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
MASS
CONN
DOMINION OF CANADA
NOVA SCOTIA
49
The map above shows the location of the 49 Foundries in the United States and Canada represented by the Association of Manufacturers of Chilled Car Wheels.
Chicago 3
St. Louis 2
Buffalo 4
Pittsburg 2
Cleveland 2
Amherst N.S.
Montreal
Mich. City. Ind.
Louisville.
Mt. Vernon Ill.
Ft Wayne. Ind.
Birmingham
Atlanta.
Savannah
Boston
Detroit
St. Paul.
Kansas City. Kan
Denver
Tacoma
Los Angeles
Rochester N.Y.
Sayre. Pa.
Lime Rock. Conn.
Albany.
Toronto.
New Glasgow N.S.
Madison. Ill
Berwick Pa
Huntingdon. W. Va.
Wilmington. Del.
Houston Tex
Hannibal Mo
Reading Pa
Baltimore
Richmond Va.
Ft William. Ont
St. Thomas "
Hamilton "
Ramapo. N.Y.
Marshall. Tex
Capacity
20,000
CHILLED
IRON WHEELS
Per Day
25 Million in Service
Association of Manufacturers
of Chilled Car Wheels
1229 McCormick Bldg. Chicago.

SAFETY FIRST
Use
**"DOMINION" Wire Rope**
Tough—Strong—Durable
**The DOMINION WIRE ROPE Co., Limited**
MONTREAL WINNIPEG TORONTO

---

# The Best Ballast Car Ever Built

**Canadian National Railways Standard Ballast Car**

For Ballasting Center Dump

For Ballasting Side Dump

For Coal or General Service

Built of Materials Obtained in Canada

Built to any size or Capacity

*Write for Booklet No. 19 for further information.*

—DESIGNED, PATENTED AND BUILT IN CANADA—

**The HART-OTIS CAR CO., Limited, MONTREAL**

---

# "Industrial Works" Cranes

Increase Profits by Reducing Handling Costs

## "Ransome" Mixers

Concrete Carts—Buckets
Wheelbarrows

**Railway and Contractors' Supplies**

Branch :
108 Mail Building
TORONTO

**F. H. Hopkins & Co.**
Limited

Head Office :
MONTREAL

# FARLOW

The Perfect Harness

## DRAFT ATTACHMENT

Furnishes the strongest connection between the draft gear and car underframe.

Service buffing and pulling shocks are transmitted to the car frame at a number of points, preventing distortion of sills, breakage of friction barrels or springs, and consequent necessity for repairs.

## The T. H. Symington Company

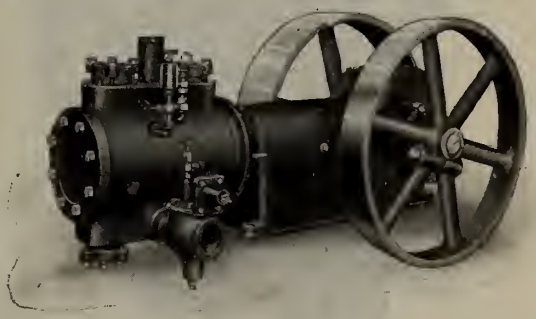
**New York** **Works at Rochester** **Chicago**

# *DEPENDABLE AIR COMPRESSORS*

**"OUR Number One is a little dandy—runs day and night and gives no trouble. We call her our "Ford," all she needs is a little oil once a day—she does the rest"**

said Mr. Carmichael, Chief Engineer of The Canadian Steel Foundries' Longue Pointe Plant, when speaking of the performance of their Canadian Ingersoll-Rand Compressors not long ago.

*The best advertisements for C.I.R. Co. compressors are found among their many satisfied users.*



EL-1 Straight Line, Power Driven, Single Stage Compressor, with "CIRCO" Silent Leaf Valves, Enclosed Dustproof Frame and Automatic Flood Lubrication.

C. I. R. Co. Compressors are made for all drives and all classes of service. Ask our nearest branch for a set of compressor bulletins.

## Canadian Ingersoll-Rand Co.,

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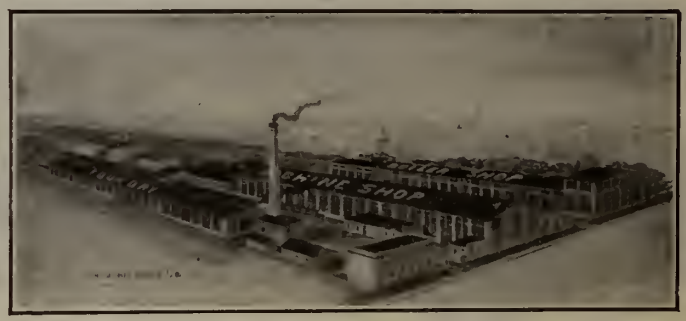


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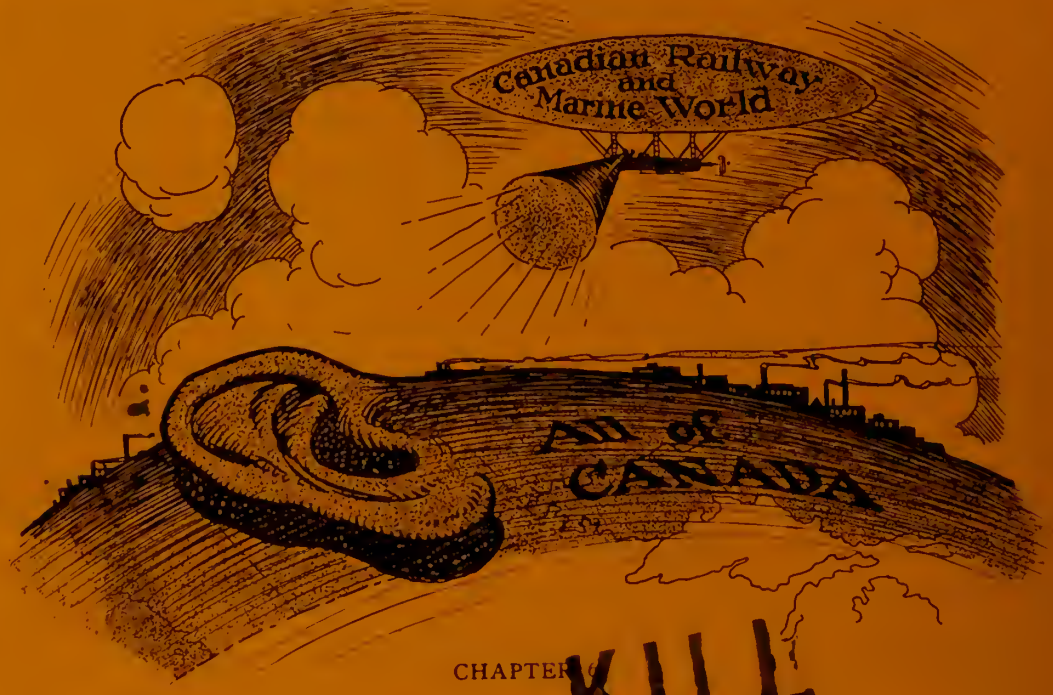


CHAPTER [illegible]

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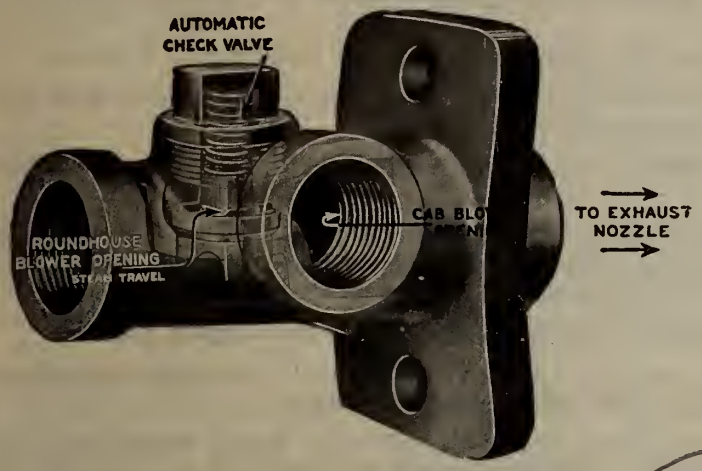


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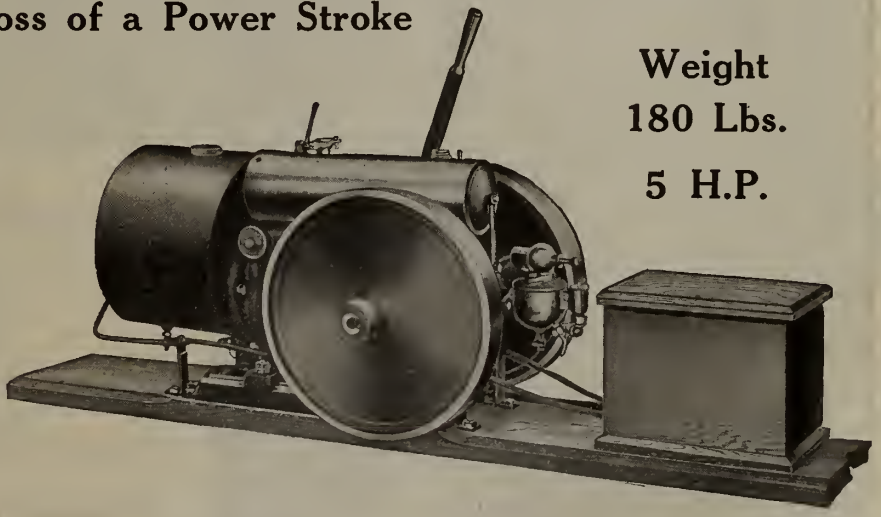

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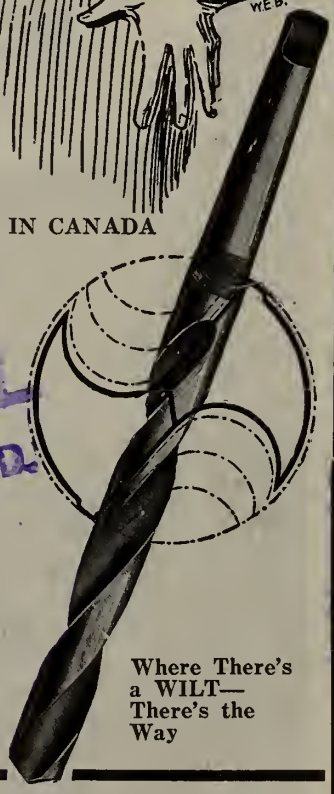

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# Canadian Railway and Marine World

June, 1920

## Railway Rates for Carriage of Mails Recommended to be Largely Increased.

The Dominion Government, on Mar. 7, 1917, passed the following order in council:—The committee of the Privy Council have had before them a report, dated Feb. 15, 1917, from the Postmaster General, submitting that the different railway companies of Canada have carried the mails since Feb. 1, 1913, at the following rates:

| | |
|---|---|
| For full postal car | 16c a mile |
| For half postal car | 9c a mile |
| For baggage car service over 30 ft., space . . | 16c a mile |
| For baggage car service, 15 to 30 ft. space . . | 9c a mile |
| For baggage car service less than 15 ft. space . . | 4c a mile |
| Special mail train ordered by Post Office Department . | $1.25 a mile |
| Special mail train when other cars are attached by the railway company | $1.00 a mile |

It is claimed by the Canadian Pacific and Grand Trunk Railways that these rates are inadequate, and the Minister therefore recommends that the question of remuneration to be paid the railway companies be referred to the Board of Railway Commissioners to determine as to the accuracy or inaccuracy of the claims made by the railway companies, and, if it is found that the present rates are inadequate, to determine, as the result of evidence to be submitted by both parties, that is the Post Office Department and the different railway companies interested, what would be a fair rate of payment for the service. The committee concur in the foregoing recommendation and submit the same for approval.

The hearing of the case by the Board of Railway Commissioners was postponed from time to time, at the Post Office Department's request, and it was not until Mar. 18, 1919, that it was heard at Ottawa, the P. O. Department's counsel having submitted previously that no conditions had arisen which would warrant any increased payments to the railways. Commissioner S. J. McLean made a report, under the reference, on July 5, 1919, but the Post Office Department declined to make it public, on the ground that it was before the government for consideration. However, at the Dominion Parliament's recent session, Jacques Bureau, M.P. for Three Rivers, Que., moved that the report be submitted to the House of Commons and it was brought down accordingly. Commissioner McLean's report, referred to above, is as follows:—

The rates referred to in the reference by the Privy Council were put into force for one year and have been continued from year to year. The railways contend that they in no sense agreed to these rates, but that they had made protests from time to time. There is some uncertainty as to how the basis for full cars was arrived at in the first instance. It was stated that information had been obtained from F. P. Gutelius as to operating costs on the Intercolonial Ry., and that the rates had been built up, allowing an operating ratio of approximately 60%. It was stated, however, by the P. O. department's counsel that the estimate of basic cost per mail car mile, submitted by Mr. Gutelius, had been withdrawn by him subsequently. It was recognized at the hearing that costs had increased and the submission of the department was, in substance, that it was justifiable to consider this increase of cost, and to add thereto such additional amount, by way of operating ratio, as would give a reasonable profit on cost. There is no difference between the parties as to the car mile being the proper unit of charge.

Statistical material bearing on the apportionment of costs was submitted at the hearing by the Canadian Pacific, Grand Trunk, and the Toronto, Hamilton & Buffalo Railways. W. J. Moule, Assistant Comptroller, Canadian Pacific Ry., made an apportionment of cost, involving in the first instance the separation of freight and passenger costs, and allowing thereafter for certain items of expense which he considered did not enter into the mail service in the same ratio as they did into the passenger service, and the allocation of cost on the basis of passenger train mileage. About 50% of the cost so computed was stated to be on the basis of items which could be directly allocated; the remainder was on a basis admittedly more or less arbitrary. Reference was made by Mr. Moule to the question of mail pay which is being brought before the Interstate Commerce Commission by the United States Post Office Department. That department has prepared a form of subdivisions of costs, and it was stated by Mr. Moule that his methods did not make more than a fraction of 1% of difference on the total as compared with the method prepared by the U.S. Post Office Department. The method of subdivisions, as made use of by Mr. Moule, is in summary form as follows:

Actual cost:—Train locomotive men, fuel for train locomotives, trainman's wages, and great bulk of train supplies and wages.

Yard expenses:—Statements from heads of different divisions as to the different proportions.

Maintenance of way and structures, divided on basis of expenses.

Locomotive repairs and renewals:—Divided on straight locomotive basis (this is in accordance with general practice; also made study of typical passenger and freight locomotives, and found locomotive cost per mile practically identical).

Maintenance of equipment:—(This is a general heading). Under this heading there are here concerned items of superintendence, shop, machinery, and other items under that heading. Apportioned on the basis that the previously divided expenses under maintenance bore to the total, what is commonly known as overhead basis.

Traffic expenses, worked out on a test for one month by him, giving 57.77% passenger.

Dispatching trains, divided on a train mile basis.

Items under Transportation:—Superintendence and station employes, station supplies and expenses, miscellaneous accounts, e.g., drawbridge operation, telegraph and telephone operation, operating floating equipment, other expenses, operating joint tracks and facilities, damage to property, damage to live stock on right of way, injuries to persons. Above apportioned on the basis which the previously divided expenses for passenger bore to the total expenses of those accounts. This is the I.C.C. basis.

General expenses, apportioned on the basis of how the other accounts were divided between passenger and freight as an overhead or supervisory expense under all previous items.

In addition to asking for increases in mail car rates, there are the following items:—terminal charges, switching, cleaning, repairs, for full mail storage cars $4 a round trip; for apartment cars, 30 ft., $2 a round trip; for baggage cars, 15 ft., $1 a round trip. In the proposition made by the railways, it is provided that if the railways make use of the returning (empty) storage or baggage car space, credit is to be allowed the P. O. Department for the return mileage, and terminal charge; that is, the payment is to be for the loaded trip only. The evidence as developed was not sufficiently detailed to show that there were services commensurate with these costs, or to warrant the conclusion that additional terminal charges as asked for were justified.

The method used by the Canadian Pacific in its analysis of costs was followed by the Grand Trunk and may, therefore, be set out in summary form as typical. In the first instance, the Canadian Pacific submitted figures dealing with apportionment of cost for the year ended June 30, 1918. At the hearing, additional figures were submitted for the period from Aug. 1, 1918, to Feb. 1, 1919. In support of these figures being taken as affording a more exact measure of existing conditions, it was pointed out that the wage increases under the McAdoo award had become effective from Aug. 1, 1918, and added greatly to operating costs. On the basis of apportionment made by Mr. Moule, passenger car mile cost for the period Aug. 1, 1918, to Feb. 1, 1919, was 33.10c. From this he made certain deductions. In the case of baggage and express cars, it was found that the cost for maintenance was one-third less than for passenger cars. In the case of train supplies and expenses an arbitrary deduction of one half was made. These deductions amount to 2.52c a car mile, giving a computation of 30.58c a mail-car mile. To this figure was added a ratio for taxes, fixed charges and dividends, and a margin of 2% on the common stock. These items amount to 8.93c, which would give a total of 39.51c. If the 2% allowance above referred to is left out, it would give a figure of 38.25c. The general contention of Mr. Moule, the C.P.R. statistical expert, was that all the services in connection with passenger business should be so considered as in effect, since advantage was being taken of the whole passenger service and organization, by the mail service. It was contended for the P. O. Department that there were various items not properly allocatable to the mail service and

that these should be deducted. While objecting to the deductions proposed, he stated that station services, station supplies and some allowance for maintenance of buildings would take off 6.07c, leaving 33.48c, with a proper charge for a margin on common stock as included, or 32.18c if this is not included.

The Quebec Central Ry., in a written submission, stated it had an actual cost of 30.76c a car-mile, and overhead charges of 10.86c, giving a total of 41.44c. The Toronto, Hamilton & Buffalo Ry. said it had direct costs of 47.28c a car-mile. The services on the T., H & B. are in baggage cars entirely, and while its figures are referred to, it does not appear that they can be taken as characteristic.

Reference has already been made to the pending investigation into mail-car payment in the U.S. In a written submission, prior to the hearing, various railways represented that the payments they were then receiving were inadequate, and that in fact other services had to bear, under existing conditions, part of the cost of carrying the mails. Comparisons were made with the rates which were paid in the U.S., and it was pointed out that the Canadian rates were much lower. It does not appear that a finding based on existing U.S. rates can be made. It was stated by counsel for the P. O. Department, as by the Comptroller of Railway Mail Service, that the services performed by railways in Canada and in the United States are not on all fours; and in some particulars this was admitted by counsel for the railways, certain off line delivery service performed by the railways being referred to in this connection. Putting the foregoing figures in summary form the result is—

| | |
|---|---|
| Passenger car-mile cost | 33.10c |
| Deduct lesser charges of maintenance, train supplies and expenses | 2.52c |
| Mail car-mile cost | 30.58c |
| Ratio added for taxes, fixed charges, dividends and margin of 2% on common stock . . | 8.93c |
| | 39.51c |
| If margin of 2% on common stock deducted . . | 1.26c |
| | 38.25c |
| Deducting station services, station supplies and some allowance for maintenance of building (such deduction objected to by railway) | 6.07c |
| | 32.18c |

The Grand Trunk figures for the year ended June, 1918, before the increase under the McAdoo award became effective, showed a computed car-mile cost of 25.48c, and adding to this 3c for overhead charges the result would be 28.48c a car-mile.

The criticism directed against the method of computation used by Mr. Moule, both by counsel for the P. O. Department and by his statistical expert, J. L. Payne, Comptroller of Railway Statistics, was that the element of individual judgment bulked largely in making the allocation. It cannot be said that exception was taken to this, as a principle, by the railways, the differences were as to details. It was frankly admitted by counsel for the P. O. Department that there were many costs common both to passenger and to mail service. It was contended for the P. O. Department that while the mail-car operation was mixed in with passenger train operation, there were certain costs attributable to passenger car operation which did not properly enter into the mail-car service; and it was further contended that the proper way of approaching the matter was to deal with it as if the mail service were handled entirely on mail trains, to ascertain the costs properly applicable thereto, and then make the necessary computations on the car-mile basis. As was pointed out by Mr. Payne, when cross-examined, there is not sufficient business for separate mail trains and, therefore, computations as to costs based on mail-train service proceed from a purely theoretical assumption. Further, he expressed the opinion that operation on a mail train basis would be both unnecessary and impracticable. While in view of what has been stated it does not seem that a computation in regard to a method of service that is not used can be helpful in arriving at a result of value, it may be pointed out that the items of cost which would be deducted in computing on a mail-train basis amount would mean a reduction from 33.10c for passenger mile cost to 24.29c for computed mail-car mile cost on a train movement basis.

Counsel for the P. O. Department had before him, before the hearing, a C.P.R. statement for the year ended June 30, 1918. While the statement for the period Aug. 1, 1918, to Feb. 1, 1919, differed as to totals, this does not change the situation from the standpoint of criticism of the principle involved. The mail-car mile cost as computed for the year ended June, 1918, was 24.83c. For the period Aug., 1918, to Feb. 1, 1919, it was 30.58c, or an increase of 23%. Against this must be remembered the large increases in wage and material costs.

The evidence given on behalf of the P. O. Department by the Comptroller of Railway Statistics, emphasized the element of judgment as a factor of importance in the allocation of costs. From the total cost of $36,617,000, which was allocated to passenger business by the C.P.R., including under this mail-car service for the year ended June, 1918, Mr. Payne made computations to the effect that there should be deductions amounting to $6,803,719. He considered that these should be deducted, before making the various divisions intended, to arrive at mail-car cost. The net effect is that he claimed there should be a deduction of 18.5%.

In connection with the original computations whereby a 16c figure per car-mile was arrived at, it is suggested that a basis of 11½c was taken, and that approximately 40% was added to this, to take care of general charges and an assumed element of profit. That is to say, there was an operating ratio of 60% provided for. Mr. Payne, in his evidence, considered that in order to provide for overhead, etc., an operating ratio of 75% was reasonable. For the years 1914-1917, inclusive, the operating ratio for Canadian railways averaged 72.1%. If Mr. Payne's deductions, averaging 18.5%, are made, the C.P.R.'s cost figure for mail-car service is reduced to 24.92c. For the theoretical mail-train service, the computed cost figure is 24.29c a car mile. At an operating ratio of 75%, the first computation would give a reasonable charge of 33.22c a car mile. On the same basis, the second computation which shows the extreme of what is claimed, but which for reasons set out is not a practical basis, the 75% ratio would give a reasonable charge of 32.38c a car mile. If a 60% ratio is taken, the figures would be 41.53c and 40.48c respectively. On the average of 1914-1917, the resultant figures would be 34.56c and 33.68c respectively.

Giving the consideration to the averages involved, and the element of judgment concerned in dealing with the question as to the proper participation of the mail service in general costs, it would appear not unreasonable that the rate accepted by this board for the kindred express service, in the general express judgment should be adopted, that is, a rate of 34.7c for a full mail-car mile. It would appear also not unreasonable that the charges for the other services set out in the order in council as contained in the reference to the board, should be increased in each case by the same percentage as the 34.7c rate represents over the 15c rate.

On August 29, 1919, Commissioner McLean made the following addition to his report:—Since the draft report was prepared, the matter has been before the other members of the board, who, in agreeing, are of the opinion that the 34.7c rate should be the maximum rate, and subject to all bonus or statutory deductions.

The report is still before the government and up to the time of writing (May 19) no intimation had been given of what action will be taken, though the Postmaster General, as one excuse for raising newspaper postage, said the railways will have to be paid much higher compensation than at present.

## Electrification on Paulista Railway in Brazil.

The Paulista Ry. has given a contract to the International General Electric Co. for the electrification of its line between Jundiahy and Campinas, Brazil, a distance of 45 kilometers, or about 28 miles. As the road is of double track construction, the total mileage, including switches and extra track, is about 76 miles. The project anticipates further extensions, amounting to about 100 additional miles, which may eventually bring the total electrification up to 128 miles, extending between Jundiahy and San Carlos.

The equipment to be supplied by the contractors will consist of 12 locomotives, 8 freight and 4 passenger, material for the transmission line and substation, and a 3,000 volt overhead, of the twin-catenary type construction. The locomotives will be of the geared type, 3,000 volt direct current. The freight locomotives will weigh 100 tons each, all weight on driving axles, and the passenger locomotives 120 tons, equipped with 2 axle guiding trucks at each end. They will be built at the General Electric Co.'s works at Erie, Pa. All of them will be equipped with regenerative braking apparatus. The design of the new equipment will parallel closely that of the Chicago, Milwaukee & St. Paul Ry. electrification, and the locomotives will be almost the duplicates of those used on the Butte, Anaconda & Pacific Ry., except for slightly increased weight and the additional of regenerative braking. Power for the operation of the lines will be supplied by the Sao Paulo Light & Power Co. at 88,000 volts, 60 cycles.

The contract amounts to nearly $2,000,000, and it is expected that it will be completed by July, 1921.

Sleeping and Parlor Car Rates.—The increases in sleeping and parlor car rates which went into force on May 1, between points in the United States, and on international traffic between Canada and the U.S., full particulars of which were given in Canadian Railway and Marine World for May, pg. 249, also went into force between points in Canada on May 15.

# Canadian Pacific Railway Co's Annual Meeting.

The C.P.R. Co.'s shareholders' 39th annual meeting was held at Montreal, May 5, Lord Shaughnessy, Chairman of the company, presiding. E. W. Beatty, President, in moving the adoption of the annual report for the calendar year 1919, as published in Canadian Railway and Marine World for May, said:—The annual report and statements attached, which have been in your possession for some time, reflect very vividly the situation prevailing generally in respect of increased costs of operation. Notwithstanding that the company's gross earnings were the largest in its history, and exceeded those of 1918 by $19,391,362, the net earnings were less by $1,569,351. The large increase in working expenses of $20,960,713, following as it does an increase of $17,191,993 in the working expenses during 1918, or a total increase in 1919 over 1917 of $38,152,706, is a striking example of the effect of the increased cost of wages and material in the operations of a company, even one conservatively and economically administered as are the affairs of your company. While it is a matter of great gratification that, even with these exceptional costs, your company has been able during the past two years to earn its fixed charges and usual dividends, and very moderate surpluses, it is nevertheless important that the relation between earnings and expenses should now receive the most careful consideration. The results of the operations during the past two years show an upward trend in costs, which even extensive increases in gross earnings and effective operating economies, due to heavier loading, larger power and consequent reduced train mileage, have not equalized.

For the past 16 years the freight and passenger rates of all Canadian railways have been subject to review or have been fixed by the Board of Railway Commissioners. The rates have been readjusted from time to time, first being lowered and then increased, but the extent of the increase has not equalled the increased costs which have recently been forced upon all companies, and reductions in which cannot with any confidence be predicted at this time. During the fiscal year ended June, 1914, the working expenses of your company, with a mileage somewhat less than the operated mileage of last year, were $87,388,000, while for 1919 they had climbed to practically $144,000,000, an increase of 64%. Within that period, increases of nominally 40% in freight rates, and 15% in passenger rates have been authorized by the Board of Railway Commissioners. The actual increases owing to the adjustment of rates made by the board were in fact 30% in freight rates and 10% in passenger rates. The result, therefore, has been that during the past five years the percentage increase in operating expenses was double the percentage increase in tolls accorded to the companies.

Owing to the parity of conditions existing between the United States and Canada, the Canadian roads were forced, during the war, to put into effect the high scales made effective under government control of the U.S. roads and they were also compelled to continue operating under tariffs of tolls substantially the same as those in force in the U.S. These tariffs were entirely inadequate, as results in the U.S. clearly demonstrated. By legislation recently enacted, the U.S. carriers are assured of rates which will return a fixed percentage on the value of the undertakings used in the public service, which will mean a reconsideration of, and increase in, the rates now current in that country. No doubt the necessity of rate adjustments in Canada will be given earnest consideration by the government and the Board of Railway Commissioners. While it is not my purpose to anticipate any action which may be taken, it is only proper, I think, to say that a readjustment is amply warranted, both on the ground of the value of the service rendered by the carriers and the cost to them of performing such service.

It is further to be remembered, and I do not anticipate that it will be forgotten that the value of any enterprise to the people it serves depends greatly upon its ability to progress and develop, and on the maintenance of a high credit, without which such development cannot take place. Waste, extragagance and improvidence must be discouraged, but I can imagine nothing more detrimental to Canada than that its railway systems should be unable to keep pace in their own development with the progress of the country, and that they should be unable to aid that progress by the expansion of facilities, the construction of necessary new lines and by meeting the increasing demands of the public in the way of efficiency and comfort in service. Based upon accepted principles in other countries government compensation due to transportation and other public service corporations, the net earnings of your company have always yielded a moderate return upon the capital actually invested in the enterprise. The railway net earnings of the company for 1919 represent only a return of 4% on the actual cash invested in the railway itself. The operations for 1919, after the payment of fixed charges and the usual preference and common stock dividends, showed a nominal surplus of $844,249, which has been placed in reserve to meet the special taxation imposed by the Dominion Government, which special taxation ended in 1919. The company's fixed charges are low, the interest on the preference stock is equally low, and the dividend of 7% payable on common stock from railway earnings is moderate. A factor which seems to be lost sight of in these discussions of the relations between expenses and revenues, is the absolute necessity of reasonable surpluses, in the case of any corporation conducting an enterprise as extensive as that of your company. The company's gross earnings for the year exceeded $176,000,000 and the surplus, after deduction of the moderate fixed charges and dividends, only amounted to less than half of 1% of these earnings. Considering the importance of reasonable provision for working capital annually from the operations of the company if its high credit and ability to progress are to be maintained, it will readily be appreciated that the revenues during the past two years have been, to say the least, inadequate.

In the discussion which has taken place as to the desirability, or otherwise, of increased rates and therefore increased revenues to the Canadian railways, two theories are publicly mentioned. The first, that rates should be increased but that any surplus earnings thereby accruing to your company should be taken back through the medium of special taxes, and the second, that rates should not be increased but that the Government Railways' deficits, if such occur, should be met out of the general revenues of the country. Both theories are, in my opinion, unsound. Rates should be established which represent a fair return for the service rendered, and if, by efficiency and economy, and the character and extent of its equipment and facilities, a company can render its operations under such rates profitable, there is no warrant for the confiscation of those profits, nor can there be anything but doubtful honesty in the proposal that one company's revenue accruing to it from service actually rendered by it, and well performed, should be taken from it to supplement the revenue of a competitor whose operations do not show favorable results. It is scarcely necessary for me to say that the fairness, or otherwise, of any rate basis is not necessarily measured by the strength or resources of a company, or by the lack of them.

The second theory, that rates should not be increased, but that any deficits should be met from the general revenues of the country, is unsound economically and unfair alike to the government-owned and other railways. It is obvious that any system which permits services to shippers and others to be performed at unreasonably low rates is discriminatory in their favor, and discriminatory against the public, whose taxes are increased as a contribution to those who use railway facilities. In my opinion the rates in this country should be determined, having regard to the cost and value of the services rendered by the companies, and to the legitimate needs of the companies, if they are to meet the transportation requirements of the country. No doubt a question so important and far reaching in its effect will be given the careful consideration to which it is entitled, by those in authority and empowered to deal with it. I may say, however, that this company's properties are in excellent condition, and at no time in its history has it been better equipped to perform its important public services or to play its full part in the advancement of the transportation future of this country.

Irrigation.—In the annual report reference has been made to the company's irrigation project in Alberta, the construction of which was undertaken some years ago, and in the earlier progress of which some difficulties were met. The project has now become firmly established, and the success has been so pronounced during the past few years that further reference to this important undertaking is, I think, warranted. An area of 643,526 acres has been brought under irrigation, through the medium of 3,969 miles of irrigation canals and distributing ditches. Of this area 301,382 acres of irrigable land have been sold at an average price of $38.18 an acre. There is still for sale, within the block, 342,144 acres of irrigable land, for which there is at present a very active demand. During the period from the commencement of construction to Dec. 31, 1919, the company has expended in connection with the construction and maintenance of these irrigation works $15,186,348 and in their operation $1,761,268. The introduction of irrigation in Southern Alberta has made it possible to successfully produce, on irrigated land, splendid crops

of alfalfa, corn, small fruits and vegetables, which are not produced with equal success under the dry farming conditions. Careful statistics, covering 11 years, indicate remarkable increases in ordinary crops grown on irrigated land, over those produced on dry land and the wisdom of the decision to undertake this extensive project has been more than justified. We are amply warranted in the belief that the irrigation block will ultimately be a closely settled, intensively cultivated, and a considerable traffic producing area tributary to the company's lines in Southern Alberta. The success of the company's undertaking in this respect, combined with the obvious necessities of that portion of the country will, I hope, lead to the extension of irrigation projects under the auspices of the Dominion or provincial governments, which will, in the end, render the danger of crop failure in these districts practically negligible.

Rolling Stock.—As indicated in the annual report your directors thought it necessary to make provision for the construction of necessary additions to your company's rolling stock. Since the report has been issued arrangements have been concluded for an equipment trust agreement, under which the payments for such equipment are spread over 12 years. The actual amount of the equipment trust issue is $12,000,000. By reason of the conditions existing at the time the transaction was concluded highly favorable interest rates were secured.

Directors.—Since the issuance of the annual report for 1919 your board has considered it desirable to apply for an amendment to the company's charter, which will permit the increase of the number of directors from 15 to 18, should that at any time appear necessary. The statute is purely empowering, and the amending bylaw will be submitted for your approval, in the event of it being considered advisable to increase the directorate. The purpose of any increase will, of course, be to secure a large representation on the board from those portions of Canada in which the company's interests are specially important.

Immigration.—I look forward to immigration to Canada on a large scale and, while a period of retrenchment and financial conservation may conceivably be the part of wisdom, your directors have the same implicit faith in the future growth and prosperity of the country that they have always had, and also the same confidence in the ability of your company to play an important part in its development and prosperity.

The report was unanimously adopted.

Nakusp & Slocan Ry.—A lease to the C.P.R. Co. from the N. & S. Ry. was approved. The lease demises to the C.P.R. Co. for 99 years, the N. & S. Ry. Co.'s railway and undertaking in British Columbia from Nakusp to Three Forks with branches from Three Forks to Sandon, and from Three Forks to Retallack near Whitewater Creek, a distance of 48.47 miles, and all such branches and additions to those railways as the N. & S. Ry. Co. is now or may be hereafter authorized to construct, together with other appurtenances, at an annual rental equal to the interest payable on the outstanding securities issued, or which may be hereafter issued, by the N. & S. Ry. Co. with the C.P.R.'s consent, the total of all such securities unpaid or unredeemed not exceeding at any time $25,000 a mile of the said demised railways, and to bear interest at a rate not exceeding 5% per annum, payable half-yearly, the payment of such interest being guaranteed by the C.P.R. Co.

Branch Line Construction.—It was resolved that whereas it is, in the directors' view, expedient that the following branch lines, and extensions of branch lines, be built in the near future, viz.:

Archive-Wymark Branch, 25 miles.

Rosetown Southerly Branch, 45 miles.

An extension of the Weyburn-Lethbridge Branch, from Altawan to Manyberries, 35 miles.

An extension of the Consul southeasterly section of the Moose Jaw Southwesterly Branch, of which 35 miles have been previously authorized as from Vidora easterly, mile 35 to 60.

An extension of the Moose Jaw Southwesterly Branch from Assiniboia southwesterly, 30 miles.

Leader Southerly Branch, 50 miles.

Duchess or Rosemary Northerly Branch, 34 miles.

Cutknife to Whitford Lake Branch, 40 miles.

An extension of the Swift Current Northwesterly Branch, from Empress northwesterly, 20 miles.

An extension of the Swift Current Northwesterly Branch from Sedgewick to Vegreville, 54 miles,

It is therefore resolved that the directors are authorized to proceed with the construction of the said branch lines, and extensions of branch lines, when in their opinion conditions warrant, and after statutory authority, where any be necessary, shall have been obtained therefor, and that to aid in the construction and equipment of the said branch lines and extensions of branch lines, the directors are hereby authorized to issue and dispose of consolidated debenture stock to such an amount as they may deem expedient, but not exceeding in respect of any of the said lines the amount which the company is or may be empowered by statute to issue.

Freight and Passenger Tariffs.—Bylaw 91 was repealed and the following substituted therefor:—That the Vice President in charge of Traffic, the Freight Traffic Manager, the Assistant Freight Traffic Manager, Eastern Lines, and the Assistant Freight Traffic Manager, Western Lines, are, and each of them is authorized, from time to time, to prepare and issue tariffs of the tolls to be charged, as provided by the Railway Act and amendments thereto, for the carriage of freight traffic upon the railway and vessels owned or operated by the company, and any portion thereof; and the Passenger Traffic Manager is authorized in like manner to prepare and issue tariffs of the tolls to be charged, as above provided, for the carriage of passenger traffic upon the said railways and any portion thereof, and upon the said vessels.

Directors.—Sir John C. Eaton, Grant Hall, Sir Vincent Meredith, and Sir Augustus M. Nanton, whose terms of office had expired, were re-elected directors for four years.

Officers, Etc.—At a meeting of the board held immediately after the shareholders' meeting, Lord Shaughnessy was re-elected Chairman of the company, E. W. Beatty, President, and Grant Hall, Vice President, and the following were appointed the executive committee:—R. B. Angus, E. W. Beatty, Grant Hall, Sir Herbert S. Holt, Sir Edmund B. Osler, Lord Shaughnessy.

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The Canadian National Ex. Co. has opened an office at Bethany, Man.

## Ontario Land Grant to Grand Trunk Pacific Ry.

The Minister of Lands, in answering questions in the Ontario Legislature recently, stated that no action had been taken by the Government to reserve for the province lands awarded to the Grand Trunk Pacific Ry. under 4 Edward 7, chap. 18, sec. 2, which now appear to be the property of the province, but that it is contemplated to take action to recover the subsidy, and the lands, or value thereof, as provided for under the section, which is as follows:—"In case the Government of Canada shall at any time take over at a valuation the line of the G.T.P. Ry. Co., mentioned in sec. 1 of this act, the amount of cash subsidy and the amount or value of the land grant both mentioned in sec. 1 of this act, and which shall have been received by the said G. T. P. Ry. Co., shall be forthwith repaid by the said G.T.P. Ry. Co. to the Treasurer of the Province of Ontario; and an agreement shall be entered into forthwith after the passing of this act between His Majesty and the G.T.P. Ry. Co. embodying and providing for the carrying into execution of the provisions of this section."

Section one of the act provided a cash subsidy of $2,000 a mile and a land grant of 6,000 acres a mile to the G.T.P. Ry. Co. for the construction of a line not exceeding 200 miles from Thunder Bay to the Transcontinental Ry. main line. This was built and is known as the G.T. P. Ry. Lake Superior Branch.

## C.P.R. Mechanical Department Machinery.

The C.P.R. Co.'s annual report for 1919, published in Canadian Railway and Marine World for May, stated that an appropriation of $363,236 had been authorized for mechanical department machinery at various shops. Following is a list of new machinery, etc., ordered for Angus shops, Montreal, for this year.

**Locomotive Shops.**

1 8,000 lb. steam hammer, with furnace.
1 42 in. x 42 in. x 10 ft. planer.
2 30 in. x 30 in. x 4 ft. planer.
1 axle lathe.
3 7 ft. radial drills.
2 2½ in. hexagon turret lathes.
1 alligator shear.
4 special bolt turning lathes
8 engine lathes, various sizes.
1 oxygraph cutting machine.
1 screwing machine.
1 nut facing machine.
1 14 in. slotting machine.
1 5½ in. Southwark flue welding machine.
1 42 in. Bullard vertical turret lathe.
1 5 in. Bardons & Oliver turret lathe.
1 broaching machine.
1 tool grinder.
1 pneumatic rivetter.
1 bulldozer.
1 Besly drumsander.
1 sand mixer for foundry.
4 electric welding units.
1 No. 4 plain milling machine.
1 20 ton travelling crane.

**Car Shops.**

1 axle lathe.
1 300-ton car wheel press.
1 toolmakers lathe.
1 coping punch.
2 bolt cutters.
1 geared power press.
1 10 ft. brake.
1 10 ft. gap shear.
1 pipe threading machine.
1 10-ton travelling crane.
3 pneumatic rivetters
1 14 in. slotting machine.
1 No. 3 plain milling machine.
1 6 ft. radial drilling machine.
1 2 in. flat pressed nut forging machine.
1 1in. flat pressed nut forging machine.
1 2 in. nut tapping machine.
1 spot welder.
1 10 in. foursided moulding machine.
2 gasolene 2½ trucks.
5 electric storage battery trucks.
1 car straightening frame.

# Discussion on Valve Motion.

The paper on valve motion. by F. Williams, Mechanical Designer, Canadian National Rys., Moncton, N.B., which was published in Canadian Railway and Marine World for April, was discussed by Canadian Railway Club members, before whom it was read. Following are the principal remarks:—

**W. A. Booth,** Engineer of Locomotive Construction, G.T.R.:—The paper states that the Stephenson link motion is a back number, and I think we all agree with that. On account of the increased size of the locomotives now being built, it is not likely that any more motion of this type will be applied.

**O. W. Young,** Young Valve Gear:—The dynamic operation of a locomotive steam engine is accomplished by four essential acts; steam admission, expansion, exhaust and compression. Admission is the act of directing steam pressure against a piston. It is the motive agent employed for revolving the wheels. The duration of the admission period must be subject to control by the locomotive man. At his option it should be possible to admit steam to the cylinders during nearly the entire piston stroke, in order to ensure positive starting reliability and maximum power for initial train movement. The maximum cut-off must therefore be late. After starting a train it must then be possible to manually shorten cut-offs (the admission period), because less power is required to keep a train moving than is necessary to start and accelerate it, and because, also, small volumes of steam must be used, on account of difficulty of rapid exhaust after speeds become considerable, and further because it is impracticable to design locomotives with proper ratios between boiler capacity and cylinder volume, to permit the use of full cylinder capacity only at low speeds. In addition, late cut-offs are uneconomical since they preclude effective expansion. The range of duty required by a locomotive in starting, accelerating, attaining and maintaining high speed, is so great that it necessitates a wide range of cut-offs subject to control by a locomotive driver. The admission period must begin as early as the beginning of a piston stroke. It may, and usually does begin before the completion of the piston's return stroke and that portion of its period is called pre-admission. Steam is then admitted against a piston, tending to check movement, and cushion its momentum. The pre-admission period should not commence before the crank pin is practically on a dead center, when working in late cut-offs, and consequently slow speed. But it may, and it is desirable that it should, begin considerably earlier, when in early cut-offs (high speed position), because piston velocity is then greater, and greater cushioning power needed to absorb the shock of checking and reversing the direction of piston movement. It is desirable that during the admission period steam flow should be unobstructed, in order that there may be but little drop in pressure against a piston up to the point of cut-off. Any valve actuating mechanism tending to increase the widths of steam port openings is therefore for that purpose basically sound.

Expansion is the act of prolonging steam pressure against a piston after admission ceases. A mass of steam then in a cylinder cut off from further replenishment from a boiler, continues to expand and propel a piston with decreasing pressure until it is permitted to escape to the atmosphere. All piston movement during this process causes rotative impulse to the driving wheels, without further drain on a boiler, and is in the direction of fuel economy. The expansion period should therefore embrace the greatest practicable portion of piston movement. In all successful valve gears, the relative duration of the expansion period increases with shortened cut-offs. Expansion should be continued as late in the stroke as possible, and any valve gear that permits this, is in this respect desirable, provided it does not introduce objectionable features affecting other events in the cycle.

Exhaust is the act of relieving a cylinder of pressure. Its period may be divided into two stages. First, after expansion has been carried as late in the stroke as practicable, all steam tending to propel a piston should be permitted to escape to the atmosphere. Unobstructed means should be provided for escape to the lowest obtainable pressure by the time a piston has reached the end of a stroke, so as to ensure the least possible initial back pressure during the return stroke. This is particularly desirable at high speed, because it is not only then more difficult to accomplish, but the piston speed is then so great that it precludes material lowering of back pressure ahead of the advancing piston, during this, the second exhaust stage. A valve gear therefore that causes rapid valve opening during the first exhaust stage, and maintains liberal opening during the second stage, not only increases effective cylinder pressure, but the increased power is produced economically because of lower negative pressure.

Compression is the act of building up pressure to cushion a piston at the end of its stroke. Compression, together with pre-admission, serve to fill the clearance space between the piston when at either extreme position its nearest cylinder head and valve. These together ensure high initial pressure. All steam pressure remaining in a cylinder at the beginning of compression, together with 15 lb. atmospheric pressure, are concentrated into smaller space and should then approximate steam chest pressure. Compression and pre-admission blend into a common pressure. Compression costs only to the extent that it retards wheel revolution. Pre-admission costs in addition the amount of steam it draws from a boiler. Therefore, the terminal pressure should be largely caused by compression. That is, terminal compression should be so high that it will require but little if any additional pressure from pre-admission to build up a pressure equal to that in a steam chest. Compression should and does in all successful valve gears begin earlier at high speed (in short cut offs) than at low speeds. But at low speed terminal compression is lower and the influence of pre-admission more pronounced and expensive. At high speed it is difficult to avoid excessive compression, and any valve gear tending to lower initial compression logically accomplishes some economy.

That Mr. Williams knows human nature is most evident when he said in introducing his subject, that he hoped he might get on some of our pet theories. He did. Conceding that "valve motion has today reach a point where it cannot be greatly improved upon" does it follow that we cannot consider the constantly increasing cylinder sizes which demand the rapid handling of greater volumes of steam and, consequently, more liberal means of handling this volume? When 20 in. cylinders were the maximum in service the valve travel was 6 in., which was thought sufficient. An analysis of numerous tests with which I am familiar showed excellent steam distribution in 20 in. cylinders with 6 in. travel and 12 in. piston valves. That combination is therefore used as a basis for the arguments herewith presented.

The first duty required of a locomotive in train operation is the start. To ensure this, it is capable of demonstration by an analysis of main rod angles, and it is further proved by actual experience, that the maximum cut-off must be approximately 88% of the piston stroke. If of less than that percentage, a locomotive will frequently fail to start, even though coupled to a comparatively light train, without first slacking back, and not only reducing the initial load resistance, but also changing the crank and rod angles to more favorable leverages. In order to provide for 88% maximum cut-off, the sum of lap and lead must not exceed 19% of valve travel. A valve setting in the following tables is therefore so arranged, the figures representing inches.

| Cylinder diameters. | Sq. inch piston area | Valve travel. | Lap and lead 19% of travel. | Lap. | Lead. | Valve Diameter. |
|---|---|---|---|---|---|---|
| 20 | 314 | 6 | 1 9-64 | 57-64 | ¼ | 12 |
| 25 | 491 | 7 | 1 21-64 | 1 5-65 | ¼ | 17 |
| 30 | 707 | 7 | 1 21-64 | 1 5-64 | ¼ | 24 |

| Port length. | Port width 25% c.o. | Port area 25% c.o. | Maximum cut-off. |
|---|---|---|---|
| 28.7 | 9-32 | 8 | 88% |
| 42 | 19-64 | 12.3 | 88% |
| 60 | 19-64 | 17.7 | 88% |

It will be noted in the table that for 20 in. cylinders the piston area is 314 sq. in., the valve diameter 12 in. with 28.7 in. port length exclusive of bridges, valve travel 6 in., lap 57/64 in., lead ¼ in., maximum port opening in 25% cut-off, 9/32 in. which causes 8 sq. in. steam port area. This is equal to 1/40 of the piston area. Assuming that a ratio of piston area to port area in 25%, cut-off of 40 to 1 is necessary for rapid steam flow into a cylinder during admission, and assuming that the valve travel for larger cylinders is increased to 7in. with valve lap of 1 5/64 in. and lead ¼ in., then for 25 in. cylinders with 491 sq. in. piston area the port area should be 12.3 sq. in. This would require a valve 17 in. in diameter with ports 42 in. long exclusive of bridges. 30 in. cylinders with 707 sq. in. of piston area, 7 in. valve travel, 17.7 in. port area require valves 24 in. diameter with ports 60 in. long. Twenty-five per cent. is considered in the foregoing, because that is the desired running cut-off, as all valve events then combine to produce the best economy and efficiency.

Valve travel of only 7 in. is mentioned, for the reason that with the Walschaert gear greater travel involves such acute angles in the movement of certain members of the gear that designing engineers have been reluctant to introduce them.

It is clearly shown that so far as the admission period is concerned, cylinders of 25 to 30 in. diameters require valves of 17 in. to 24 in. diameter to produce as free steam flow as 20 in. cylinders re-

ceive with 12 in. valves. When it is considered that 16 in. valves are the maximum now in service and that there are very few in service in passenger locomotives of over 14 in. diameter, it is very evident that the larger cylinders are handicapped by insufficient port areas.

| Cylinder diameter. | Sq. In. piston area | Valve travel. | Lap and lead 19% of travel. | Lap. | Lead. | Valve diameter. |
|---|---|---|---|---|---|---|
| 25 | 491 | 9 | 1 23-32 | 1 11-32 | 3/8 | 11 |
| 30 | 707 | 9 | 1 23-32 | 1 11-32 | 3/8 | 16 |

| Port length. | Port width 25% c.o. | Port area 25% c.o. | Maximum cut-off. |
|---|---|---|---|
| 26 | 15-32 | 12.3 | 88% |
| 38 | 15-32 | 17.7 | 88% |

The table shows that with 9 in. travel 11 in. valves may be used for 25 in. cylinders and 16 in. valves for 30 in. cylinders and still retain a 40 to 1 ratio between piston and steam port areas in 25% cut-offs. A valve gear arranged for 9 in. travel thus not only permits the use of smaller valves, but it may use valves now standard to large locomotives and greatly improve ratios between port and piston areas, and thus ensure very high initial pressure against the piston up to the point of cut-off, even at high speeds. As a result, it consequently has capacity to either haul heavier trains, or attain and maintain unusual speed, or both so far as the influence of admission extends.

If the sum of lap and lead is 19% of travel and the ratio between lap and lead the same, one gear with 7 in. travel and the other with 9 in. the duration in expansion periods in various cut-offs is alike, providing the exhaust setting is line and line in both cases, but more exhaust clearance may be used with increased travel without relatively shortening expansion.

Due to the fact that steam is cut off at higher pressure because of more adequate port openings the piston pressure is higher during expansion period, particularly at high speed, and increasingly so for increased cylinder diameters than is possible with gears causing less valve travel. It is evident, therefore, that increased power induced by improved admission caused by the gear with greater travel continues during the expansion period.

Initial pressure is applied to a piston at the beginning of its stroke. At that position all back pressure should have disappeared. The valve should have then caused the widest possible opening to the atmosphere. As the valve is displaced from its central position, the amount of lap and lead for the above piston position, and assuming that it is designed for line and line exhaust, the width then of exhaust opening is lap plus lead. Reference to the foregoing table shows that this is more than 3/8 of an inch greater in one case then the other, and this additional 3/8 of an inch in width of exhaust port opening, obtains throughout nearly the entire exhaust period and in all cut offs. Due to its greater valve travel, the exhaust port opens more rapidly in one case and it accomplishes decidedly wider openings during both exhaust stages. Increased capacity is thus provided for rapidly expelling large volumes of steam. Rapid valve opening, during the first exhaust stage, vacates the cylinder to an unusually low initial back pressure, and unusual width of exhaust opening, during the return piston stroke, further permits reduction in back pressure. This results in economically increasing effective pressure, and further augments the cylinder power created by improved admission. It logically follows then that with lowered back pressure, the pressure initially subject to compression is lower, and therefore lower terminal compression results, a further augmentation of cylinder power.

If the premise is sound on which this analysis is based, it is confidently submitted that increased valve travel, with proportionately increased lap, economically increases cylinder power. 1. By adequate steam port openings high pressure is maintained up to the point of cut-off. 2. On account of high cut-off pressure, expansive pressure is high. 3. Due to rapid and liberal exhaust port openings, exhaust is early and completely accomplished and low back pressure obtained. 4. Because of low initial compression, terminal compression is low. The improvement accomplished in these four acts cause high positive pressure, low negative pressure, increased mean effective pressure and result in greater draw bar pull. The practical operating benefits are positive reliability in starting; rapid acceleration; great hauling power, particularly at high speeds, capacity for unusually high speed and economical use of coal and water. It is in the hardest service that these benefits are most pronounced and upon the largest locomotives that they attain their maximum valve for these benefits become relatively greater with increasing cylinder diameters.

W. H. Sample, General Superintendent, Motive Power and Car Departments, G.T.R.:—We have quite a few valve motions on the G.T.R. We have some splendid Walschaert valve motion, some splendid Baker motion and also some Young motion. They are all giving good service and I have no partiality to show particularly; but I would like to say, for Mr. Williams' locomotives, that he has some of the best Walschaert motion that I have ever seen. There are other gears besides those mentioned, the Joy, which I had considerable experience with in Costa Rica, and the Southern gear, which is used quite extensively in the United States. The first mentioned, the Joy gear, was applied to locomotives I have references to in Costa Rica in 1885 and 1886, showing that the outside type of gear is not very new, but for some reason or other this type of gear was not adopted generally by Canadian or United States railways until within the last few years; but the dimensions of our locomotives have reached a point now where in my opinion the outside motion should replace the link motion.

T. H. Curtis:—Having had experience with a good many of the different valve motions I was able to follow Mr. Young's remarks very closely. Looking back over some years, the first locomotive I remember had the Hook motion. I do not know if you know what it was, but it had only a cut off at full forward and full back position—you had no intermediate choice whatever. With regard to the link motion; which is said to be a back number, it was a good motion, but as the weight of the locomotives increased and also the diameter of the axles, larger eccentrics were necessary, until we had a 21 in. eccentric with a 63 in. driving wheel, and when the locomotive was making 60 miles an hour the eccentric was slipping one third, or 20 miles an hour in the strap. It was this, and the important matter of lubrication, that put the link motion out of business. The Walschaert gear was used for over 40 years on the European continent before it was put on the market in America and I do not know what was the matter with our mechanical engineers that they did not adopt it before.

Coming to the matter of valve motion, the point is to get the steam into the cylinder, to accelerate the piston, and then get it out, when we are through with it, and the valve that gives the best opening on the fore part of the stroke of the piston is the one that lets it in the best. Some stationary engines have valves of the Corliss type, that shut and open by vacuum means, which gives a quick closure after leaving the valve open a long time, thus giving a good steam line and a free cut-off, and thus permitting of a long expansion, and in expansion there is economy. I am not prepared to speak upon the relative values of the different valve gears. Diagram 1, accompanying Mr. Williams paper (see Canadian Railway and Marine World, April, pg. 168), shows how you can lay off the movement of valves. You can do this in your own locomotive house or shop, by getting a board about 36 in. long for a locomotive with 30 in. stroke. Lay off on this board the steam port of the valve, and then lay off each inch of the stroke on the board; then commence with the engine in dead center and mark on the board the zero point position of the valves; then move the piston 1 in. and lay off the valve position again, and so on until the 30 in. of stroke have been designated and you have a valve diagram at the roundhouse, made to order. It is not the square sound of the exhaust, but it is the steam that gets into the cylinders that makes the good working engine. With your locomotive-house diagram you may then compare one locomotive with another and get a good idea of the relative valve motions of the different locomotives. In service some engines are good and some are poor, and possibly this valve diagram would tell you why some are poor. Mr. Young spoke about the large opening and high speed of a valve, that gives us plenty of steam and that steam is what makes the engine go.

F. Williams:—Mr. Young questioned my statement that as far as economical steam distribution is concerned valve motion design has today reached a point where it cannot be greatly improved upon. I still stand by that statement. If we take a Corliss stationary engine as possessing the nearest approach to a perfect steam distribution, I do not think that a simple engine running non-condensing will do much better than 20 lb. of superheated steam per h.p. hour and we have been able to get this result on locomotives. Mr. Young also spoke of the size of distribution valves necessary with different diameters of cylinder and based his reasoning on a 12 in. valve for a 20 in. cylinder. Is it not just possible that the 12 in. valve is larger than is absolutely necessary for this size of cylinder? We are getting good results from a 14 in. valve on a 24 in. and a 27 in. cylinder. I think Mr. Comley of the Franklin Railway Supply Co. is here, and I believe his company is advocating a smaller valve than we are using, perhaps he can tell us something about it. I think the results obtained in our service, by the use of the Walschaert valve gear, will compare favorably with other gears. Another point is that when a test is to be made the Walschaert gear is not always given a proper show. If any company has a patent gear to sell, and a test is to be made, they send an expert to supervise the application of the gear, and see that it is tuned up to the highest

point of perfection, whereas the Walschaert gear, as often as not, only receives the attention of the locomotive-house valve setter, and, although these men are usually thoroughly competent, the engine is generally turned out without a complete sequence of valve events being taken or recorded.

W. T. Comley, Franklin Railway Supply Co.:—The arrangement referred to by Mr. Williams is known as the Streamline Cylinder Ports. These ports make application of the well known principles governing the flow of gases, principles recognized as fundamental in the design of steam turbines. The steam port around the bushing is so arranged that, during the admission period, as steam issues from the valve it is divided into a number of streams, depending upon the number of bridges in the bushing. These streams are directed by ribs, so that they do not interfere with each other, but join into one smoothly flowing whole when the main passage is reached. During the exhaust stroke, the steam, as it flows from the cylinder to the valve, is divided by the ribs into a number of equal streams, one to each port in the bushing. Absence of all quick turns, and other baffling obstructions, speeds up the flow of steam, and by properly directing the flow of steam to and from the valve every square inch of the bushing port becomes effective. This arrangement permits the use of 8 and 10 in. valves where 14 and 16 in. valves were considered necessary, and at the same time facilitates the flow of steam, to and from the cylinder, to such an extent that the locomotive is noticeably smarter and faster.

O. W. Young:—In answer to Mr. Williams, permit me to say that I merely attempted to point out that, in the proportions that are commonly carried between the smaller and larger locomotives, we are not keeping consistent in the valve sizes and the width of port openings in proportion to the cylinder volumes that are handled. I did not come to this meeting to exploit any particular device, but am merely attempting to give something to think about, with the object of improving the service in the arrangement of steam distribution.

C. P. McGinnis:—One of our men was overseas and brought back a book published by the Belgian State Railways. It dealt particularly with the works of A. Walschaert, who was at that time 21 years old. When 27 years old he was Engineer of the State Railways, and it is interesting to note that in 1839, after experimenting with the Stephenson link motion they were then using on the engines, which were very small, he found that 2% and almost 3% of the tractive effort of the engine was absorbed in operating four large eccentrics which are fundamentally the Stephenson motion. Larger eccentrics were later on necessary and with the shorter valve travel they could cut down the wearing surfaces. His efforts to produce an improved valve motion were along the line of cutting down friction, although in this country we have come to believe that it came because the locomotives were getting bigger, and the larger boxes, frame bracing, etc., made it necessary to go to the use of an outside gear. Walschaert's idea was to reduce friction, and do away with the four large eccentrics, and put on an outside gear that would restore the tractive effort to almost 100% of its accredited efficiency. I only mention this to show that it is odd that we did not adopt the outside valve gear before, in an effort to get away from the friction. I cannot find any difference in the arrangement or size or designs of 1841 as compared with the locomotive of today.

Mr. Williams, in his paper, has outlined some of the fundamental truths of this matter. I remember some time ago in the southwest listening to a paper on valve motion. It was lengthy and many ways were shown that might have been adopted to get the steam in quickly and emit it quickly again, and how that today we do not get a bad starting locomotive because of the constant lead in full gear; and one of the foremost railway men said that as they were spending so much time and money to develop valve gears they should try to get away from the constant lead because it made a bad starting locomotive. I do not think anybody is going to say that about Mr. Williams' paper, because in one paragraph he covered that part of the subject.

I should like to ask Mr. Williams some questions. He says: "Care must be taken that the length of the combination lever adopted will bring the lower end of the lever to the correct level, to connect up with the union link, especially if the union link is connected directly to the wrist pin, which is the practice generally adopted unless the Ripken Kingan main rod arm is used." I should like to ask him if it is not the usual practice, in locomotive construction, that the union link should be horizontal, when the combination link is in vertical position for inside admission valves, and for outside admission valves is it not the practice that the union link should be horizontal at the end of the stroke,—this being necessary to correct inequalities between the front and back ports? I think it was established, some years ago, that, if possible, it was good practice to maintain the union link one sixth the length of the main rod, and if that could be done then all errors could be eliminated.

He also says: "The advantages of this arrangement are that the wear on the link support bearings is diminished, and the link block slip in running position may be kept very small, as the swing link describes an arc which is very similar to the arc struck by a point in the bottom of the link, the concave side of both these arcs being uppermost." On one line in New England I think there are only six locomotives out of some 400 or 500 on which they have not adopted the practice of having the link block at the top of the link in forward gear, and I would like to ask Mr. Williams, if he has not disregarded this practice, if he has not found that he gets better steam distribution by having the link block at the top of the link. A good many roads feel they get better steam distribution, and that one of the best ways to waste coal is to have an unequal steam distribution.

Mr. Williams also says: "We have already seen that reducing the lead will give us a better cut-off in starting position, and have decided, I think, that this is an advantage when starting the load. Reducing the steam lap has the effect of lessening the period of expansion, but by reducing the exhaust clearance the period of expansion is lengthened and thus the ill effects of cutting down the steam lap is neutralized." When you reduce the steam lap and the exhaust, do not both of these changes tend to reduce the opening through which the exhaust must pass? There may be advantages but it seems to me you do these things at the expense of the exhaust opening. If a perfect steam distribution gives perfect exhaust why does a perfect sounding exhaust not give perfect steam distribution? If the exhaust is regular and the valve setting is known to be correct, does it not indicate leaking valve or cylinder packing? I would like to ask Mr. Williams about changing the eccentric crank to give an engine a greater maximum cut-off. I had an experience on one of the western lines, where a number of the passenger locomotives that took the trains out of St. Paul, stalled on a stiff grade, but after they got a crossed lead they made a much better showing in getting over that particular point; they then went a little farther and set a number of the locomotives in the same way, and it worked all right, but on one occasion a locomotive handling a freight train pulled into a passing track to allow a passenger train to go by and had to back out, but it could not do so, the result was that they took off all the crossed lead on locomotives on that road. Later, on one of the western roads in Canada, 11 locomotives in passenger service were set with the crossed lead. I think it made them slightly blind in full gear. It worked out very well as long as they did not have to back out of any siding or were run in one direction only.

F. Williams:—In reply to Mr. McGinnis' question as to the correct level of the bottom of the combination lever to connect up with the union link. When the union link is connected to the wrist pin we have a very short combination lever, and the shorter the lever, the greater is the extreme angularity of the union link. On this account we generally find it advisable to have the bottom connection of the combination lever slightly below the centre line of the wrist pin for inside admission valves, in order to reduce the extreme angularity of the union link, especially if the union link itself is short. When we use a crosshead arm we have more latitude with the length of our combination lever as we can increase or decrease the depth of the crosshead arm to obtain just what we want, but when we make the connection directly to the wrist pin we haven't much choice in the matter.

C. P. McGinnis:—I take it that you do not have reference to locomotives that have the combination lever driven from the crosshead pin?

F. Williams:—They were new locomotives.

C. P. McGinnis:—They were locomotives that had crosshead arms below the level of the guides.

F. Williams:—If we make the union link level, when the combination lever is vertical, we get the maximum angularity when the engine is on dead centers and vice versa, and we have found it advisable to follow the practice I have just outlined in order to reduce the extreme angularity of the union link when using the short combination lever. The rule referred to by Mr. McGinnis was always followed when the long combination lever was in vogue.

C. P. McGinnis:—In the later designs, has it been possible to so locate the valve stem pin and reduce the bar so as to connect the union link one sixth the length of the main rod?

F. Williams:—I have never considered the union link in connection with the main rod, and have never heard anyone mention that subject before. The paragraph in the paper which speaks of reducing the lead has reference to freight locomotives which are generally operated on a long cut-off, and at a slower

speed, and they therefore do not require the same relative exhaust port opening on a 25% cut-off as the passenger locomotives do. That is why it is possible to cut down the lead and lap and eliminate the exhaust clearance.

C. P. McGinnis:—It is seldom used at 25%?

F. Williams:—If they are hauling their full tonnage they are loaded too heavily to run on a 25% cut-off. Mr. McGinnis asks if it is not a fact that a better steam distribution can be obtained with the link block in the top of the link? It may be that on certain locomotives you do get a better steam distribution with the block in the top of the link, but there is no necessity for it. I remember some locomotives we had built with this indirect motion and they had a good steam distribution; on a subsequent duplicate order we specified direct motion, and if we had simply rearranged the power reverse gear and eccentric crank and left the rest of the motion as it was, the steam distribution would have suffered. It was found desirable to change the location of the reverse shaft slightly, in order to eliminate as nearly as possible the link block slip in the new running position, and the locomotives when delivered had as good a steam distribution as the previous order. There is nothing in the idea that a better distribution can be obtained with the link block in the top of the link, but when designing a Walschaert gear, special attention should always be given to the running position in fore gear, whether this is in the top or the bottom of the link, and it would be very poor policy to indiscriminately change direct motion to indirect or vice versa, without first making sure that the steam distribution in running position would not suffer.

In answer to the question: "If a perfect steam distribution gives a perfect exhaust, why does not a perfect sounding exhaust give a perfect steam distribution?" I may say that, in the great majority of cases, a perfect sounding exhaust does indicate a good steam distribution, but it is not absolutely necessary that it should do so. In my own experience I have had occasion to look into the performance of locomotives which were reported as sounding perfectly square, but on being tried over they were found to be considerably out, and yet the combination of valve events gave an even exhaust. Mr. McGinnis' remarks on crossed lead are quite in accordance with my own ideas which were outlined in the paper.

T. H. Curtis:—I would like to mention, in connection with valve motion of locomotives, that when the high pressure steam is at the ends of the piston valve, which is balanced, there is a valve stem having an area of something like 4 sq. in. at one end of the valve chamber, but not at the other end, thus making a pressure of 800 lb. more on the forward end of the valve than on the rear, for 200 lb. steam pressure; this unequal pressure will slip the valve toward the rear, when the inertia of the valve is overcome, thereby causing excessive lead at the front end of the piston stroke which will cause a pound in the driving box, although one may take the valve tram and run over the valves only to find them square." They are square only when the steam pressure is low or off.

Another thing indirectly connected with valve motion; all steam distribution has so-called back pressure, for on the return stroke we do have "back pressure" and the clearance at the end of the stroke is the only place to put this pressure, if we have too little clearance we have a poorly running locomotive and one that is not economical. I hoped that Mr. Williams or someone else would touch upon this matter of proper clearance, as it is a very important item.

# Birthdays of Transportation Men in June.

Many happy returns of the day to:

Jas. Anderson, ex Vice President, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont., born at Ayr, Ont., June 20, 1851.

F. F. Backus, General Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Rochester, N.Y., June 4, 1860.

W. C. Bowles, General Freight Agent, Western Lines, C.P.R., Winnipeg, born at Montreal, June 3, 1875.

J. H. Boyle, Superintendent, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Waterloo, Que., June 26, 1869.

F. P. Brady, General Manager, Eastern Lines, Canadian National Rys., Montreal, born at Haverhill, N.H., June 22, 1853.

H. W. Brodie, General Passenger Agent, lines west of Revelstoke, C.P.R., Vancouver, B.C., born at Fredericton, N. B., June 8, 1874.

G. W. Coburn, Resident Engineer, C. P.R., Brandon, Man., born at Upper Melbourne, Que., June 24, 1877.

E. P. Coleman, General Manager, Dominion Power & Transmission Co., Ltd., Hamilton, Ont., born at Taunton, Mass., June 14, 1867.

W. S. Cookson, General Passenger Agent, G.T.R., Montreal, born at Port Jervis, N.Y., June 12, 1871.

E. L. Cousins, Manager and Chief Engineer, Toronto Harbor Commission, Toronto, born there, June 11, 1883.

A. Craig, City Passenger Agent, C.P.R., Hamilton, Ont., born there, June 5, 1884.

J. M. Davidson, Division Engineer, Canadian National Rys., Winnipeg, born at Glasgow, Scotland, June 4, 1877.

C. P. Disney, Engineer of Bridges, Eastern Lines, Canadian National Rys., Toronto, born at Montreal, June 11, 1887.

A. E. Doucet, Quebec, ex-District Engineer, National Transcontinental Ry., born at Montreal, June 9, 1860.

Knowlson Elliott, City Freight Agent, C.P.R., Calgary, Alta., born at Gorrie, Ont., June 26, 1884.

J. M. R. Fairbairn, Chief Engineer, C.P.R., Montreal, born at Peterborough, Ont., June 30, 1873.

Jas. Ferguson, Trainmaster, Canadian National Rys., Prince Albert, Sask., born at Woodbridge, Ont., June 17, 1878.

W. E. Foster, Solicitor for Ontario, G.T.R., Montreal, born at Belleville, Ont., June 27, 1866.

A. A. Goodchild, General Storekeeper, Eastern Lines, C.P.R., Montreal, born at Peckham, London, Eng., June 3, 1866.

W. C. Guthrie, Superintendent, Schreiber Division, Ontario District, C.P.R., Schreiber, Ont., born at Arnprior, Ont., June 15, 1876.

L. R. Hart, General Agent, Passenger Department, C.P.R., Boston, Mass., born at Fairport, N.Y., June 3, 1877.

J. A. Heaman, Assistant Chief Engineer, Grand Trunk Pacific Ry., Winnipeg, born at Memphis, Tenn., June 3, 1874.

R. B. Jennings, Division Engineer, Canadian National Rys., Toronto, born at Paris, Ont., June 29, 1888.

L. K. Jones, I.S.O., ex-Assistant Deputy Minister, Department of Railways and Canals, Ottawa, born at Port Hope, Ont., June 9, 1849.

M. W. Kirkwood, General Manager, Grand River Ry., and Lake Erie & Northern Ry., Galt, Ont., born at Cheltenham, Ont., June 8, 1877.

L. Lavoie, Assistant General Purchasing Agent, Canadian National Rys., Toronto, born at Rimouski, Que., June 22, 1879.

J. D. McAuley, Commercial Agent, Grand Trunk Pacific Ry., and Grand Trunk Pacific Coast Steamship Co., Ltd., Prince Rupert, B.C., born at Plantagenet, Ont., June 11, 1884.

R. S. McCormick, Chief Engineer and General Superintendent, Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont., born at Quaker City, Ohio, June 22, 1873.

S. J. McLean, Assistant Chief Commissioner, Board of Railway Commissioners, Ottawa, born at Quebec, June 14, 1871.

C. E. McPherson, Assistant Passenger Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Chatham, Ont., June 7, 1861.

W. R. MacInnes, Vice President, Traffis, C.P.R., Montreal, born at Hamilton, Ont., June 7, 1867.

J. R. C. Macredie, Engineer, Saskatchewan District, C.P.R., Moose Jaw, born at St. John, N.B., June 13, 1880.

James Manson, Assistant to the Vice President, C.P.R., Montreal, born at Thurso, Scotland, June 8, 1863.

W. E. Massie, Mechanical Superintendent, Niagara, St. Catharines & Toronto Ry., St. Catharines, born at Elora, Ont., Ont., June 5, 1880.

J. D. Morton, General Auditor, Canadian National Rys., Toronto, born at London, Ont., June 15, 1857.

L. Mulkern, Division Freight Agent, C.P.R., St. John, N.B., born at London, Ont., June 18, 1871.

R. P. Ormsby, Secretary, Canadian National Rys., Toronto, born at Arklow, Ireland, June 26, 1869.

J. E. Pinault, General Superintendent Canada & Gulf Terminal Ry., Matane, Que., born at Rimouski, Que., June 24, 1884.

F. R. Porter, Assistant General Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., June 13, 1875.

F. Price, Superintendent of Car Service, G.T.R., Montreal, born there, June 11, 1864.

Allan Purvis, ex-General Superintendent, Ontario District, C.P.R., Toronto, born at Batavia, Java, June 29, 1878.

L. J. Reycraft, Solicitor, Manitoba and Saskatchewan Districts, C.P.R., Winnipeg, born in Orford Tp., Kent County, Ont., June 20, 1868.

W. F. Sawyer, Assistant Superintendent, Division 5, Quebec District, Canadian National Rys., Edmundston, N.B., born at Drummondville, Que., June 13, 1883.

J. R. Shaw, Passenger Agent, Canadian Pacific Ocean Services, Ltd., Manila, Phillipine Islands, born at Montreal, June 28, 1871.

J. L. Simpson, agent, C.P.R., Port McNicoll, Ont., born at Mount Forest, Ont., June 9, 1866.

H. H. Smith, Car Accountant, Canadian National Rys., Toronto, born at Quebec, Que., June 14, 1872.

N. Van Wyck, Purchasing Agent, Can-

# Appointment of Managing Committee for Grand Trunk Railway System.

The agreement entered into between the Dominion Government and the G.T. R. Co. of Canada, on Mar. 8, 1920, providing for the acquisition of the G.T.R. Co., and its subsidiaries, by the government, and which was ratified by the Dominion Parliament, contains the following section:—

"4. Committee of Management. — Forthwith after the ratification of this agreement, as provided in the said act, a committee of management of the Grand Trunk System shall be formed, consisting of five persons, two to be appointed by the Grand Trunk, two by the government, and the fifth by the four so appointed. The functions of the Managing Committee shall be to ensure the operation of the Grand Trunk System (in so far as it is possible to do so) in harmony with the Canadian National Railways, the two systems being treated, in the public interest, as nearly as possible as one system. No contract or agreement shall be made by the Grand Trunk, or by any company comprised in the Grand Trunk System and controlled by the Grand Trunk, other than such as are necessary for the usual and ordinary business of the system, except with the concurrence of the Managing Committee and the approval of the Governor in council. The Managing Committee may, with the consent of the Governor in council, borrow from the government on Grand Trunk notes, or other obligations or securities approved of by the Governor in council. for the carrying on of the operation or improvement of the Grand Trunk System. The committee shall continue to act until the preference and common stocks are transferred to or vested in the government, when it shall be discharged."

The preference and common stocks will not be transferred to the government until their value, if any, has been decided by arbitration, by Sir Walter Cassels, Judge of the Exchequer Court, as chairman, and two others appointed by the Dominion Government, and two by the G.T.R., so that the Managing Committee will act until after the arbitration, and the transfer of the preference and common stocks to the government.

The government has appointed as its representatives on the committee, C. A. Hayes, Vice President in charge of Traffic, Canadian National Rys., and S. J. Hungerford, Assistant Vice President, Operation and Maintenance, Canadian National Rys. The G.T.R. has appointed as its representatives, Frank Scott, Vice President and Treasurer, G.T.R., and W. D. Robb, Vice President, Transportation and Maintenance, G.T.R. These four officials held a preliminary meeting in Montreal, May 21, and elected Howard G. Kelley, President G.T.R. and G. T. Pacific Ry., as the fifth member of the committee and its chairman.

Some of the daily newspapers have published a lot of nonsense in connection with this matter, the Toronto Globe, for instance, stated that Messrs. Kelley, Robb and Scott had been appointed members of the Canadian National Rys. board, which, of course, was absurd. The managing committee's duties and powers are clearly set forth in the section from the agreement reproduced above. They are entirely confined to the G.T.R. System, and none of its members as such have anything to do with the management of the Canadian National Rys.

H. G. Kelley,
President, Grand Trunk Railway and Grand Trunk Pacific Railway.

C. A. Hayes,
Vice President, Traffic, Canadian National Railways.

S. J. Hungerford,
Assistant Vice President, Operating, Canadian National Railways.

Charles A. Hayes, Vice President, Traffic, Canadian National Rys., Toronto, was born at West Springfield, Mass., Mar. 10, 1865, and entered railway service in 1882, since when he has been, to 1884, clerk, Freight Auditor's office, Connecticut River Rd., now Boston & Maine Rd.; 1884 to Oct., 1887, similar position, Boston & Lowell Ry., Boston, Mass.; Oct. 1887, to Nov., 1890, clerk, General Freight Agent's office, Boston & Lowell Ry., and its successor, Boston & Maine Rd.; Nov., 1890, to June, 1892, General Freight and Passenger Agent, Central New England & Western Ry., Poughkeepsie, N.Y.; June to Oct., 1892, Division Freight Agent, Philadelphia & Reading Rd., while it had control of the C.N.E. & W.R., Hartford, Conn.; Oct., 1892, to June, 1896, New England Agent, National Despatch Line, Boston, Mass.; June, 1896, to July, 1899, New England Agent and acting General Manager, National Despatch Line, Boston, Mass.; July, 1899, to May, 1903, Manager, National Despatch-Great Eastern Line, Buffalo, N.Y.; May, 1903, to Apr., 1908, Assistant General Freight Agent, G.T.R., Chicago, Ill.; Apr., 1908, to Oct. 16, 1911, General Freight Agent, G.T.R., Montreal; Oct. 16, 1911, to June, 1913, Freight Traffic Manager, G.T.R., Montreal; June, 1913, to June 1, 1917, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B.; June 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, Canadian Government Railways, Moncton, N.B.; and since Dec. 1, 1918, Vice President, Traffic, Canadian National Rys., Toronto.

Samuel J. Hungerford, Assistant Vice President, Operating, Canadian National Rys., Toronto, was born near Bedford, Que., July 16, 1872, and entered railway service in May, 1886, since when he has been, to Feb., 1891, machinist apprentice, South Eastern Ry., and C.P.R., Farnham, Que.; May, 1891, to Aug., 1894, machinist, at various points in Quebec, Ontario and Vermont; Sept., 1894, to Aug., 1897, charge man, C.P.R., Windsor St., Montreal; Aug., 1897, to Apr., 1900, Assistant Foreman, C.P.R., Farnham, Que.; Apr., 1900, to Feb., 1901, Locomotive Foreman, C.P.R., Megantic, Que.; Feb. to Sept., 1901, General Foreman, C.P.R., Cranbrook, B.C.; Feb., 1903, to Jan., 1904, Master Mechanic, C.P.R., Western Division, C.P.R., Calgary, Alta.; Jan., 1904, to Dec., 1907, Superintendent, Locomo-

tive Shops, C.P.R., Winnipeg; Jan., 1908, to Feb., 1910, Superintendent of Shops, C.P.R., Winnipeg, Man.; Mar., 1910, to Apr., 1915, Superintendent of Rolling Stock, Canadian Northern Ry., Winnipeg, May, 1915, to Nov. 1, 1917, Superintendent of Rolling Stock, C.N.R., Toronto; Nov. 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, C.N.R., Toronto, and since Dec. 1, 1918, Assistant Vice President, Canadian National Rys., Toronto.

Howard G. Kelley, President, G.T.R., and Grand Trunk Pacific Ry., Montreal, was born at Philadelphia, Pa., Jan. 12, 1853, and entered railway service in 1881, since when he has been, to 1884, Assistant Engineer on location, construction and bridge construction, Western and Pacific Divisions, Northern Pacific Ry.; 1884 to 1887, engaged in mining; 1887 to Jan., 1860, Resident Engineer and Superintendent of Bridges and Buildings, St. Louis Southwestern Ry. System, including St. Louis South Western Ry. of Texas; Jan., 1890, to Mar., 1898, Chief Engineer, same road; Mar., 1898, to July, 1907, Chief Engineer, Minneapolis & St. Louis Rd.; July. 1900, to July, 1907, also Chief Engineer, Iowa Central Ry.; Mar., 1898, to Mar., 1899, also Consulting Engineer, St. Louis South Western Ry.; July, 1907, to Oct. 2, 1911, Chief Engineer, G.T.R., Montreal; Oct. 2, 1911, to Sept. 1, 1917, Vice President in charge of construction, transportation and maintenance, G.T.R., Montreal, and since Sept. 1, 1917, President, G.T.R. and Grand Trunk Pacific Ry. He is also director and Chairman of the Board, Central Vermont Ry. He is a C.E. of the Pennsylvania Polytechnic College, a member of the Institution of Civil Engineers of Great Britain, of the Engineering Institute of Canada and of the American Society of Civil Engineers, and was President of the American Railway Engineering and Maintenance of Way Association for two terms.

W. D. Robb, Vice President, Transportation and Maintenance, G.T.R., Montreal, was born at Longueuil, Que., Sept. 21, 1857, and entered G.T.R. service in 1873, since when he has been, to July, 1882, machinist apprentice, Montreal; July, 1882, to Jan., 1883, charge hand, Montreal; Jan. to Aug., 1883, night locomotive house foreman, Montreal; Aug., 1883, to Jan., 1897, Locomotive Foreman, Belleville, Ont.; Jan., 1897, to July, 1901, Master Mechanic, Toronto; July, 1901, to Sept. 1, 1917, Superintendent of Motive Power, Montreal, and since Sept. 1, 1917, Vice President, Transportation and Maintenance, Montreal.

Frank Scott, Vice President and Treasurer, G.T.R., Montreal, entered G.T.R. service in 1879, in the Audit Department, and passed through all the stages in that department, from that of junior clerk. He was appointed Treasurer in 1901, and in 1906 was appointed also Treasurer of the Grand Trunk Pacific Ry. In 1914 he was also appointed Vice President, G.T.R., and its subsidiary companies.

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**Central Ry. Co. of Canada Liquidation.** In connection with this liquidation, a hearing was given by the referee in the Exchequer Court of Canada at Ottawa, May 10, to the claim of Senator James Domville for $20,000 as compensation for raising a loan for the company in 1906. He claims that he visited London, Eng., in the company's interests in that year and secured a loan of £40,000,000. The company has a charter to build a railway between Montreal and Midland, Ont.

## Excess of Canadian Railway Cars in the United States.

The Minister of Railways, Hon. J. D. Reid, was asked in the House of Commons recently how many Canadian railway cars were then in the United States and how

Frank Scott,
Vice President and Treasurer, Grand Trunk Railway.

W. D. Robb,
Vice President, Transportation and Maintenance, Grand Trunk Railway.

many U.S. cars were in Canada. He replied:—Up to Mar. 1, 1920, the following Canadian railway cars were on U.S. railways: Box cars, 42,347; auto cars, 3,502; refrigerator cars, 883; open top cars, 5,781; stock cars, 1,751; flat cars, 4,428; other cars, 1,024. Total, 59,716. Up to Mar. 1 the following U.S. railway cars were on Canadian lines: Box cars, 24,151; auto cars, 1,380; refrigerator cars, 1,388; open top cars, 11,934; stock cars, 187; flat cars, 1,454; other cars, 138. Total, 40,632. This showed that U.S. railways had 19,084 more Canadian cars, than there were U.S. cars on Canadian railways.

The Minister, in answer to another question on April 7, said that the 59,716 Canadian cars in the U.S. on Mar. 1 were owned as follows:—Canadian National Rys., 10,840; C.P.R., 15,482; G.T.R., 21,028; other Canadian railways, 12,366.

The Interstate Commerce Commission issued the following circular April 20:—"The following communication has been received by the Interstate Commerce Commission from the American Railroad Association Commission on Car Service: During the past week the press throughout the country has quite generally carried the following statement dated Ottawa, April 7: 'In the House of Commons today, the Minister of Railways informed Mr. Archambault that of the 59,716 Canadian cars in the United States, 10,840 belonged to the Canadian National Railways, 15,482 to the C.P.R., 21,028 to the G.T.R., and 12,366 to other Canadian railways.'

"In our opinion, the statement that there are 59,716 Canadian cars in the U.S. is misleading, as it seems to invite the inference that the Canadian lines have suffered a depletion of car supply to the extent of 59,716 cars. The fact is that at the last date for which complete reports are available, April 1, although 54,401 Canadian cars were on U.S. lines, 36,245 U.S. cars were on Canadian lines. The net balance against the Canadian lines was therefore 18,156 cars. Further than this the situation varies on the different lines. In the case of some of the Canadian roads they have on line more cars than they own, and the excess usually represents a surplus of equipment from U.S. lines. Also, the situation as to Canadian lines on April 1 was practically a normal one, that is to say, while the Canadian lines, as producers of box car freight, had less than their ownership of box cars, as non-producers and consumers of coal and other open top car freight, they had a surplus above ownership of open top cars."

Canadian Railway and Marine World is advised by the Railway Association of Canada, that its reports at April 1 do not agree with the U.S. Car Service Commission's statement, as they show that at that date there were 63,783 Canadian cars on U.S. lines, and 42,415 U. S. cars on Canadian lines, a balance of 21,368 against Canada.

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**C.P.R. Station Garden Operations.**—A recent report gave some information as to gardening operations carried on by C.P.R. station agents under the direction of its horticultural department. Over 500 station agents and section men are interested in the work, and are reported to have put in requisitions for 150,000 annuals for planting, besides taking advantage of the general distribution of standard packages of seeds. Provision has been made for the planting of 20,000 perennial plants, 10,000 shrubs and 5,000 shade trees by those taking part in the work along the lines. A correspondence school in gardening has been started for the benefit of the men engaged in the work. The usual prizes for the best kept plots will be awarded this year.

# Canadian Pacific Railway Construction, Betterments, Etc.

St. John, N.B., Bridge.—A decision is expected to be announced shortly as to the site for the construction of a new bridge across the St. John River's reversible falls, St. John. A press report states that the probable site is about 20 ft. above the present cantilever bridge.

The mayor of St. John and the city commissioner are reported to have inspected the locality recently with a view of the possibility of having the level crossing at Douglas Ave. done away with in connection with the building of the new bridge. It is stated that there are no serious engineering obstacles in the way of carrying the highway over the railway tracks at this point, and that the city engineer will meet C.P.R. engineers to discuss the matter.

Angus Shops, Montreal.—Daily press reports that these shops are to be doubled in size are exaggerated. We are officially advised that the extensions will provide an additional floor area of 223,550 sq. ft. and will cost approximately $1,000,000. Following are particulars of the extensions:—

LOCOMOTIVE SHOP.—An addition will be built at each end of the present shop, to give an additional floor area of 58,000 sq. ft. The construction will be steel frame, concrete foundation, brick walls. Mastic floor will be placed on the west end extension, and wood block floor, on concrete, in the east end extension. The east shop extension is to be used as a running shed, and for this reason pits, with mill type smoke jacks will be installed. All of the skylights will be constructed in wood, as metal has been found to deteriorate very rapidly, and for the same reason mill type ventilators will be used throughout this shop.

FREIGHT CAR SHOP.—An extension to the present building at the west end, 106 x 400 ft., to give an additional floor area of 42,400 sq. ft. The construction will be steel frame, concrete foundation, brick wall, wood floor and roof similar to present building.

THE PATTERN STORAGE will be extended at the west end 75 x 50 ft., giving an additional floor area of 3,750 sq. ft. It is a 3-floor fire proof building. The construction will be steel frame, concrete foundation, brick walls, steel sash, concrete roof and floors.

PASSENGER CAR SHOPS.—An extension of 102 x 161 ft. between shops 2 and 4, and 137 x 161 ft. between shops 1 and 3; and 137 x 239 ft. east end extension of shop 3, giving a total increased area of 71,000 sq. ft. The construction will be concrete foundation, brick walls, mill type roof, concrete and mastic floors.

These shops will be all served from the present transfer table, the pit of which is being extended.

THE CAR ELECTRICAL SHOP will be a new building 62 x 362 ft., with a floor area of 23,000 sq. ft. The construction will be steel frame, concrete foundations, with brick walls and acid proof mastic floor.

A PLANING MILL SHELTER, 126 x 144 ft. will be built on the west end of the present planing mill to keep material under cover as a weather protection and will have an area of 18,000 sq. ft. for this purpose.

DRY KILN.—Four stalls will be added to the present west dry kiln, increasing the area by 7,400 sq. ft. The construction will be special, with ventilating ducts in walls, built in brick, and concrete foundation.

TRACK SCALE.—A heavy service tapered floor track scale will be installed at the west end, of capacity large enough to weigh locomotives. The construction will be of the most modern type, with self registering beam, scale shelter and concrete pit. The floor of the scale will be steel beams and stands, with a mastic scale platform.

YARDS.—A number of track changes and additions will be made at both ends of the yard, to provide extra car capacity. There will also be installed a 50-ton mechanical coaling plant, as well as a standpipe for switching engines.

St. Denis St. Viaduct, Montreal. — A press report states that the company has acceded to the Montreal Administrative Commission's request not to exercise its contract right to increase the number of its tracks over the St. Denis St., Montreal, viaduct, which is being widened.

Timiskaming-Des Quinze River Branch. A Haileybury, Ont., press report of May 13 stated that J. M. R. Fairbairn, City Engineer, and other C.P.R. officials had arrived at South Timiskaming and proceeded by steamboat to Ville Marie, Que., to look over the territory through which the proposed line to the Des Quinze River Falls would pass. The C.P.R. has in operation a branch line from Mattawa, Ont., to the foot of Lake Timiskaming, at the point formerly known as Lumsden's Mills, Que., and a branch line therefrom to Kipawa, Que., and under the Interprovincial & James Bay Ry. charter has built 10 miles of line from Kipawa to Mercier Y. Surveys have been completed for the extension of this line to Kipawa River, and we were recently officially advised recently that H. Roberts, Assistant Engineer, was in charge of a party making a survey of the Des Quinze River at approximately mile 66 from Kipawa. This is the line for which the Quebec Legislature recently voted a special subsidy of $6,400 a mile (over and above a cash subsidy of $1,600 a mile), in case the Dominion Parliament did not grant a Dominion subsidy in aid of its construction.

New Station at Moose Jaw, Sask., Canadian Pacific Railway.

Peterborough Station.—A. D. MacTier, Vice President Eastern Lines, J. M. R. Fairbairn, Chief Engineer, and H. C. Grout, General Superintendent Ontario District, are reported to have had a conference recently with the Mayor of Peterborough, Ont., and city officials regarding the construction of a union station there. The C.P.R. and the G.T.R. stations are a considerable distance apart across the citiy from each other.

West Moncton Station.—A press report states that the company proposes to build a new station at West Moncton, Ont., on its Guelph and Goderich line.

Woodstock-Zorra Second Track. — We are officially advised that there is no intention of doing any second track construction between Woodstock and Zorra,

Ont., at present, as stated in a daily press report.

**Windsor Freight Yards.**—E. W. Beatty, President, is reported to have informed the Windsor, Ont., Chamber of Commerce on his visit to that city May 13, that it is proposed to lay out new local freight yards there.

**London to Sarnia.**—E. W. Beatty, President; Grant Hall, Vice President; H. C. Grout, General Superintendent Ontario District, and other C.P.R. officials visited Sarnia, Ont., May 13, to obtain information as to its railway necessities, and the traffic possibilities of a line from London to Sarnia. The party was received by the mayor, and other representatives of the City Council and of the Chamber of Commerce, who presented maps of the district, and information as to the population, trade, etc., of the district. Mr. Beatty is reported to have stated that there had been a charter for a C.P.R. line from London to Sarnia, but this had lapsed and there was no assurance that the Dominion Government would revive it in view of the fact that the G.T. is to be taken over. He referred to the several plans proposed—Chatham to Sarnia over the Pere Marquette route, Chatham to Sarnia via Dresden, Wallaceburg and Petrolea, and the proposed electric feeders—which would serve a section of country scarcely opened up by railway lines and asked that the company be supplied with all material possible on the subject.

Prior to reaching Sarnia, the party visited Chatham and Wallaceburg, where considerable information was gathered, particularly in connection with the proposal that the C.P.R. should acquire the Chatham, Wallaceburg & Lake Erie Ry. in connection with the carrying out of the proposal.

It is reported that Grant Hall and H. C. Grout crossed over to the Michigan side of the river on May 14 and visited Marysville. A suggestion has been made that connection be established between the Ontario and the Michigan shores by a tunnel, and that Marysville be the site of the Michigan approach.

**Western Branch Lines.**—The Dominion Parliament has authorized the company to build the following lines:—

From the Pheasant Hills Branch at or near Asquith in Tp. 36, ranges 9 or 10, west of the third meridian, northerly to the Wilkie Northwesterly Branch at or near Cloan in Tp. 42, range 20, west of the third meridian, Saskatchewan.

From the Moose Jaw Northwesterly Branch at or near Rosetown in Tp. 30, range 15, west of the third meridian, northerly and northeasterly to the Pheasant Hills Branch at or near Keppel in Tp. 35, ranges 12 or 13, west of the third meridian.

From near Kelfield, on the Wilkie-Anglia Branch in Tp. 34, range 19, west of the third meridian, easterly direction to Tps. 32 or 33, range 14, west of the third meridian, Saskatchewan.

From the Weyburn-Stirling Branch at or near Amulet in Tp. 8, ranges 20 or 21, west of the second meridian, westerly and northwesterly to the Moose Jaw Southwesterly Branch at or near Dunkirk in Tp. 12, range 28, west of the second meridian, Saskatchewan.

From the Crowsnest Subdivision at or near Kipp in Tp. 9, range 22, west of the fourth meridian, easterly and northeasterly to the Suffield-Blackie Branch at or near Retlaw in Tp. 13, range 17, west of the fourth meridian.

These lines are to be commenced within two years of the passing of the act, and to be completed within five years.

The company has also been granted an extension of time for five years for building a line from Tps. 6, 7, 8 or 9, range 30, west of the second meridian, westerly to the Alberta Ry. & Irrigation Co.'s railway at or near Stirling.

**Moose Jaw Heating Plant.**—Tenders were received to May 15 for the construction of a heating plant building at Moose Jaw, Sask.

**The Moose Jaw Southwesterly Branch** is already in operation to Assiniboia on the Weyburn-Lethbridge line, and we are officially advised that no decision has been reached as to when the first 30 miles, which a recent press report stated was to be built this year, will be put under contract. The extension from Assiniboia will connect with the Weyburn-Lethbridge line at Consul, Sask. A contract for the first 35 miles southeasterly from Consul was let in 1919, and grading is in progress. A recent press report stated that a further stretch of 25 miles was to be put under contract this year, but we are officially advised that no decision has been reached.

**Swift Current Northwesterly Branch.** We are officially advised that no decision has been reached as to when a start will be made on building the projected branch line from Sedgewick to Vegreville, Alta., 54 miles. This will be a branch of the Saskatoon-Wetaskiwin line, will cross the Grand Trunk Pacific Ry. near Viking, and reach Vegreville, which is a Canadian Northern Ry. junction point.

**Swift Current-Empress-Bassano Line.** We are officially advised that it has been decided to proceed with the proposed improvements on this line during this year, to bring it up to main line standard so that the overflow through freight traffic can be diverted to that route instead of taking it through Medicine Hat, Alta. This line is eight miles shorter between Swift Current and Bassano than the main line and has superior gradients. It is intended to take advantage of these conditions and to relieve congestion on the main line, where, during autumn and winter, traffic is exceptionally heavy. The capacity of the main line is further limited by the impracticability of making any considerable extension to the terminal facilities at Medicine Hat. The improvements involve the establishement of a terminal at Bassano, Alta.; the replacement of 65 lb. rails by 85 lb. rails; some slight grade revision between Swift Current and Cabri, and the installation of pipe lines and pumping plants to get water from the Red Deer and South Saskatchewan Rivers to suppl ywater stations.

**Leader, Sask., Southerly Branch.**—We are officially advised that no decision has been reached with regard to the placing under contract of 25 miles of grading in extension of the contract for the first 25 miles of grading, which was let in 1919.

**Weyburn-Lethbridge Line Extension.**—We are officially advised that a contract has been let to W. A. Dutton, Winnipeg, for grading 18 miles westerly from Altaman, on the Saskatchewan-Alberta boundary, on the extension of the line to meet the line from Stirling, Alta., which is in operation to Manyberries, Alta. It is expected that the grading will be completed this year, but it is not likely that the company will be able to go on with tracklaying until the spring of 1921.

**Acme to Drumheller.**—D. C. Coleman, Vice President Western Lines, is reported to have stated recently that the construction on the line from Acme to Drumheller, Alta., had been proceeding very favorably during the winter. In connection with the construction of this line a recent Calgary report stated that construction would be started at an early date on a line on a branch line from Duchess or Rosemary, on the main transcontinentay line, into the coa l mining areas, to connect with the Acme-Drumheller line. We are officially advised that while a charter for the construction of this line was obtained in 1919 no decision has been reached as to when construction will be started.

**Vancouver Pier.**—Dredging is proceeding at the site of the new pier at Vancouver, F. F. Busteed being in charge. (May, pg. 246.)

## Grand Trunk Railway Construction, Betterments, Etc.

**Ottawa Cross Town Tracks.**—In connection with the project for removing the G.T.R. cross town tracks in Ottawa, a suggestion has been made for the elimination of all the tracks, with one exception, such a line to have short spurs to business plants, and short sidings betweetn certain streets. This, it is contended, would obviate the long haul which would result from the removal of all tracks. The one through track would, it is proposed, be operated by electricity.

**The G.T.R. and the Hamilton Highway.** The problem of the Toronto Hamilton highway entrance into Hamilton is receiving consideration. A recent press report states that N. Cauchon, who has made several surveys in connection with the railway situation in the city, suggests that the city exchange rights of way with the railway. This would involve the use of the G.T.R. right of way for highway purposes, the G.T.R. being changed over to another route. The suggestion is to divert the highway at a point near the Kings Road to the G.T.R. right of way, the highway would then swing right into the city without the necessity of either bridge or fill, a saving, it is claimed, of something like $2,500,000 of the cost of the route at present suggested. The G.T.R. would be diverted to what is described as the 0.4 grade, laid out on one of the suggested routes on the Tye-Cauchon map. The whole question rests on the G.T.R.'s willingness to make the exchange.

**Hamilton Bridges.**—The Hamilton, Ont., City Council's railway committee is reported to have refused the company's application for permission to raise the overhead bridges at Macnab, John, Catharine and Mary Streets, Hamilton. The committee held that if the bridges are not high enough now, the proper remedy would be to lower the roadbed, as recommended in the Tye-Cauchon report on the railway situation in the city.

**Hamilton-Sarnia Telephone Dispatching.**—A press report states a contract will be let shortly for the installation of a telephone dispatching system between Hamilton and Sarnia, Ont.

**London Division Track Relaying.**—A press report states that seven miles of the track between Paris and London, Ont., have been relaid with new heavy rails and that the reballasting is being gone on with. New rails for other parts of the track in the division which is to be reliad are being delivered.

**London Division Stations.**—A press report states that new stations will be built this summer at Hawtrey, Ont., on the Stratford-Port Dover line, and at Clandeboye, on the London-Wingham line, the latter replacing the one destroyed by fire in 1919. (May, pg. 239.)

# Railway Rolling Stock Orders and Deliveries.

Canadian National Rys. have received 11 mail cars out of an order of 20, placed in 1919 with Canadian Car & Foundry Co.

The C.P.R., between Mar. 16 and May 18, ordered 11 vans and 3 ballast spreaders, and received 4 vans, 3 Pacific locomotives and 2 freight locomotives from its Angus shops, Montreal.

Canadian Locomotive Co. has delivered four 12-wheel (4-8-0) locomotives to Jamaica Government Railways, completing an order for 7 placed in January. The chief details of these locomotives were given in our February issue, page 69.

The Timiskaming & Northern Ontario Ry., in addition to the 4 Mikado locomotives ordered from Canadian Locomotive Co., details of which are given on this page, has ordered 2 eight-wheel switching locomotives from Montreal Locomotive Works.

The G.T.R. has arranged for the overhauling and reinforcing of 240 freight cars at its London, Ont., shops. It is probable that another 500 will be dealt with there. Similar work is being undertaken to a number of 30 ton freight cars at its Montreal shops.

Canadian National Rys. have ordered 12 light Pacific type (4-6-2) locomotives from Montreal Locomotive Works, for the western lines. The specification is the same as that of the 10 heavy Pacific type locomotives given in our April issue, page 182, except that Young valve gear will be used.

The Canadian Car & Foundry Co. has made the following shipments of rolling stock since Apr. 15: 2 dining cars, 2 steel mail cars, from Montreal, for the G.T.R.; 440 repaired box cars from Fort William, Ont., for the Grand Trunk Pacific Ry.; 20 steel mail cars from Montreal, for Canadian National Rys.; 3 tank cars from Montreal, for Imperial Oil Ltd.

Steel Mail Car, Canadian National Railways.

Canadian National Rys. have ordered 50 steel underframe express refrigerator cars, 30 tons capacity, from National Steel Car Corporation. They will be 45 ft. long over end sills, 8 ft. 11 in. wide over side sills, and will have Commonwealth trucks and Miner friction draft gear. Of these cars, 20 are for use on the Canadian National Rys., and 30 on the Grand Trunk Pacific Ry.

The C.P.R.'s 500 refrigerator cars which are being built at its Angus shops, Montreal, as stated in our last issue, will be duplicates of those built last autumn, and fully described and illustrated in our Nov., 1919 issue, page 585. They are designed with special reference to the transportation of fruit, and have proved entirely satisfactory for this service. In the lot now under construction it is the intention to fit up one or two with slightly different arrangements, for experimental purposes.

The G.T.R. 10 horse express cars ordered from the Osgood Bradley Car Co. will be 73½ ft. long, and of the same type of construction as the 60 ft. baggage cars, details of which are given in this issue, except that the Commonwealth six wheel cast steel truck will be used. The cars will be equipped with partitions for either 18 or 24 horses, with modern feeding troughs and overhead water tanks.

The G.T.R. flat cars, 1,000 of which have been ordered from the National Steel Car Corporation, will be of 100,000 lb. capacity, 40 ft. long between sills, and 9 ft. wide over floor. They will have fish belly type end sills, with center sills

Steel Dining Car, Canadian National Railways.

of usual design, M.C.B. type D couplers, Farlow draft gear attachment, Miner draft gear, cast steel truck bolsters, Miner roller rocker side bearings, four point brake beam suspension, Barber lateral motion roller bearing and U.S.R.A. arch bar type truck.

The G.T.R. baggage cars, of which the Canadian Car & Foundry Co. is building 50, will be 60 ft. long, of the G.T.R. standard composite construction, with steel underframe, steel side framing and wood exterior and interior, and wood roof cov-

ered with canvas. The equipment includes Commonwealth cast steel, 4-wheel truck, and Simplex clasp brake, Miner buffer, friction draft gear, roller side bearing and ideal hand brake, Coleman locking device, Utility ventilators, Vapor Car Heating Co.'s vapor heating system, Safety Car Heating & Lighting Co. and Stone-Franklin electric equipment, and Fowler upper buffer spring in connection with the diaphragm.

The G.T.R. automobile cars, 1,000 of which have been ordered from Canadian Car & Foundry Co., and 2,000 from American Car & Foundry Co., will be single sheathed steel frame, 80,000 lb. capacity, with arch bar trucks, Simplex bolster, U.S.R.A. standard fish belly type underframe, M.C.B. type D coupler, Farlow draft gear attachment, Miner friction draft gear, Simplex truck, Barber lateral motion roller bearing, Miner rocker roller bearing, steel ends, Camel door fixtures, Hutchins all steel flexible roof, Miner ideal staff type hand brake, four point brake beam suspension, etc. The chief dimensions will be:—

| | |
|---|---|
| Length inside | 40 ft. 6 in. |
| Length over striking plate | 42 ft. 1½ in. |
| Height inside clear | 9 ft. |
| Width inside clear | 8 ft. 6 in. |
| Height over running board | 13 ft. 7½ in. |

The Timiskaming & Northern Ontario Ry. has ordered 4 mikado (2-8-2) locomotives from Canadian Locomotive Co. Following are the chief details:—

| | |
|---|---|
| Weight on drivers | 197,000 lb. |
| Weight, total | 258,000 lb. |
| Wheel base of engine, rigid | 16 ft. 6 in. |
| Wheel base of engine, total | 34 ft. 8 in. |
| Heating surface, firebox | 208 sq. ft. |
| Heating surface, tubes | 3,1016 sq. ft. |
| Heating surface, total | 3,259 sq. ft. |
| Driving wheels, diar. | 63 in. |
| Driving wheel centers | Cast steel |
| Driving journals, diar and length | Main 10 x 13 in. Others 9 x 13 in. |
| Cylinders, diar. and stroke | 25 by 30 in. |
| Boiler, type | Radial stayed |
| Boiler pressure | 180 lb. |
| Tubes, no. and diar. | 202 2 in.; 32 5⅜ in. |
| Tubes, length | 20 ft. |
| Brakes | Westinghouse |
| Superheater, Locomotive Superheater Co.'s type A | |
| Weight of tender loaded | 143,000 lb. |
| Water capacity | 6,500 imp. gal. |
| Coal capacity | 12 tons. |
| Tender truck, type | 4 wheel equalized |
| Wheel, type | Rolled steel |
| Wheel, diar. | 33 in. |
| Journal, diar. and length | M.C.B. 5½ by 10 in. |
| Brake beam | Trussed type. |

The G.T.R. passenger refrigerator cars, 15 of which are being built by Canadian Car & Foundry Co., will be equipped with 4-wheel Commonwealth passenger car trucks, with 7 ft. wheel centers, fish belly type underframe, and superstructure of wood, portable rack frames and brine tanks, the latter so built that the car can be ventilated through the hatches in summer, and in winter a charcoal heater will be lowered into the brine tanks from the hatches. By opening the hand hole cover in the bottom of the tank, the air will be drawn through and heated by a charcoal heater, and pass into the body of the car through a screened opening at the top of the car through a screened opening at the top of the tank. Other equipment includes Gould friction buffer, Miner friction draft gear, M.C.B. type D coupler, cast steel yoke, Miner roller side bearings and ideal type staff hand brake, Miner refrigerator door fastenings, Laflare door insulation, inside metal roof, Ureco hand hole for brine tanks, Keystone insulation for side and roof, and Tuco insulation for floor.

The G.T.R. eight-wheel switching locomotives which are being built by Canadian Locomotive Co., as mentioned in a previous issue, and 25 of the same type locomotives ordered from Lima Locomotive Corporation for Western Lines operation, will have the following chief dimensions, with special equipment as in the case of the 6-wheel switching locomotives, which the G.T.R. is building at its Point St. Charles shops, except that they will have Commonwealth tender frame, instead of steel channel construction frame, and Miner type D coupler with cast steel yoke and key, instead of stub coupler casting with short shank coupler:—

| | |
|---|---|
| Weight of engine loaded | 240,000 lb. |
| Weight of tender loaded | 166,360 lb. |
| Wheel base of engine | 15 ft. 6 in. |
| Wheel base, engine and tender | 52 ft. 5¾ ft. |
| Length, total | 69 ft. 7½ in. |
| Heating surface, firebox | 235 sq. ft. |
| Heating surface, tubes | 2,497 sq. ft. |
| Grate area | 56.6 sq. ft. |
| Tubes, no. and diar. | 228 2 in.; 32 5⅜ in. |
| Tubes, length | 15 ft. |
| Cylinders, diar. and stroke | 26 by 30 in. |
| Driving wheel diar. | 56 in. |
| Water capacity | 9,000 gal. |
| Coal capacity | 12 tons. |

The G.T.R. 6-wheel switching locomotives, which it has under construction at its Point St. Charles shops, as mentioned in a previous issue, will have the following chief details:—

| | |
|---|---|
| Weight of engine loaded | 164,000 lb. |
| Weight of tender loaded | 130,000 lb. |
| Wheel base of engine | 11 ft. 6 in. |
| Wheel base, engine and tender | 45 ft. 9½ in. |
| Length, total | 62 ft. 6¾ in. |
| Heating surface, firebox | 168 sq. ft. |
| Heating surface, tubes | 1,751 sq. ft. |
| Heating surface, arch tubes | 26 sq. ft. |
| Grate area | 50.62 sq. ft. |
| Tubes, no. and diar. | 178 2 in.; 28 5⅜ in. |
| Tubes, length | 12 ft. 4 in. |
| Cylinders, diar. and stroke | 22 by 26 in. |
| Driving wheel diar. | 51 in. |
| Water capacity | 6,000 gal. |
| Coal capacity | 9 tons. |
| Staybolts | Tate, Flannery Bolt Co. |
| Fire door | Franklin Railway Supply Co. |
| Lubricator | Detroit 42 |
| Piston and cylinder rings and bushes | Hunt Spiller Mfg. Corp. |
| Reverse gear | Ragonnet |
| Automatic grease cellars | Franklin |
| Air brake | Westinghouse E.T. |
| Superheater | Schmidt, Locomotive Superheater Co. |
| Unions and joints | Barco |
| Steam heat equipment | Vapor Car Heating Co. |
| Lagging | Johns-Manville |
| Nuts | Canada Grip Nut Co. |
| Brake beams | Huntoon |
| Axle boxes | McCord |
| Turbo generator | Pyle National Co. |

The C.P.R.'s 5 Santa Fe (2-10-2) locomotives, which are being built at its Angus shops, Montreal, as mentioned in a previous issue, will be similar to those completed there recently, except that they will be equipped to burn both coal and oil as fuel. They will be equipped with Locomotive Superheater Co.'s type A superheater, Ragonnet reverse gears, Cole main driving boxes, automatic fire doors, double drawbars between engine and tender and Vaughan trailing truck, which will have a cast steel frame, and they will also be fitted with the company's standard vestibule cab. Following are the chief details:—

| | |
|---|---|
| Cylinders | 26½ x 32 in. |
| Driving wheels, diar. | 58 in. |
| Boiler pressure | 200 lbs. |
| Tractive effort | 65,870 lbs. |
| Weight on drivers | 275,600 lbs. |
| Weight of engine, total | 354,600 lbs. |
| Firebox, dimensions | 120⅛ x 88⅞ in. |
| Grate area | 74.2 sq. ft. |
| Tubes, no. and diar. | 219 2¼. 43 5½ in. |
| Tubes, length | 20 ft. 6 in. |
| Tubes, heating surface | 2,632.28 sq. ft. |
| Flues, heating surface | 1,263.47 sq. ft. |
| Arch tubes, heating surface | 43.75 sq. ft. |
| Fire box, heating surface | 316.50 sq. ft. |
| Superheater, heating surface | 1,015.00 sq. ft. |
| Total equivalent heating surface | 5,778.60 sq. ft. |

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**New Brunswick Public Utilities Commission.**—A press report states that A. B. Connell, K.C., Woodstock, N.B., who was appointed a member of the Commission in 1912, has now been appointed chairman, in succession to the late G. O. Dickson Otty, K.C., and that J. D. P. Lewin, barrister, St. John, has been appointed a member of the board to fill the vacancy.

## Railway Finance, Meetings, Etc.

**Algoma Central & Hudson Bay Ry.**—The Dominion Parliament is being asked to pass an act to confirm an arrangement for the adjustment of relations between the A. C. & H. B. Ry. Co., the Algoma Central Terminals Ltd., and the Lake Superior Corporation as set forth in an agreement between the several companies, whereby the rights of the bondholders and stockholders of the railway company and the terminals company respectively are defined, and authorizing the several parties to give full effect to the agreement.

A special general meeting of shareholders has been called to be held at Sault Ste. Marie, Ont., June 7, to assent to the scheme of arrangement referred to above, to approve of the directors' actions taken in the matter up to the time of the meeting, and to authorize the directors to do all that is necessary in connection with the carrying out of the arrangement.

**Canadian National Rys.**—A New York press report of May 17 states that William A. Read & Co. are placing on the market $15,000,000 of 7% 15 year Canadian National Rys. sinking fund equipment trust certificates. The sinking fund will be used to buy up certificates in the open market every half year, so as to retire the entire issue by May 1, 1935.

**Canadian Pacific Ry.**—The directors have declared a dividend of 2½% on the common stock for the quarter ended Mar. 31, being at the rate of 7% per annum from revenue and 3% per annum from special income account, payable June 30 to shareholders of record June 1.

**The Kettle Valley Ry. Co.**'s annual meeting was held at Montreal, May 5, and at a subsequent meeting of directors, J. J. Warren, Toronto, heretofore President, was elected Chairman of the Board, and D. C. Coleman, Vice President, Western Lines, C.P.R., Winnipeg, was elected President. The other directors are: I. G. Ogden, Grant Hall, W. R. MacInnes and A. D. MacTier, Vice Presidents, C.P.R., Montreal, and A. C. Flumerfelt, Victoria, B.C. H. C. Oswald is Secretary.

**New Brunswick Ry. Co.**—A meeting of shareholders has been called to be held at St. John, N.B., June 1, to consider a recommendation of the directors concerning the sale of the company's properties, and to authorize the directors to sell or dispose of all or any part of the same. The N.B. Legislature passed two acts recently affecting the company's land holdings in the province.

**New York Central Rd. Co.**—There has been deposited with the Secretary of State at Ottawa, copy of an agreement dated April 15, between J. Carstensen, M. S. Barge rand H. G. Snelling, vendors, the Guaranty Trust Co. of New York, trustee, and the New York Central Rd. Co.

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The Board of Railway Commissioners is reported to have decided May 17 that an application to compel the G.T.R. to operate six trains a day between Cote St. Paul and Bonaventure station, Montreal, be dismissed. The service was cut off in 1917, owing to continued deficits in the operation and the necessity for economy during war time. When the fare on the Montreal Tramways Co. averaged about 3c. the people travelled between Cote St. Paul and Montreal that way, but when the M. T. Co.'s fare was raised to 7c. they wanted to get the 5c. railway service back again.

# Mainly About Railway People Throughout Canada.

**Edward Greig Bowie**, who has been appointed Master Mechanic, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., was born at Winnipeg, Aug. 20, 1892, and entered C.P.R. service in May, 1907, since when he has been, to Aug., 1912, machinist apprentice, Winnipeg; May, 1912, to Sept., 1914, machinist, Winnipeg, and on Western Lines; Oct., 1914, to Apr., 1915, Master Mechanic's clerk, Calgary, Alta.; Apr. to July, 1915, machinist, Angus shops, Montreal; July to Oct., 1915, dynamometer car operator, Eastern Lines; Oct., 1915, to Apr., 1916, Assistant Locomotive Foreman, Ottawa; Apr. to Nov., 1916, Assistant Foreman and Locomotive Foreman, Outremont, Que.; Nov., 1916, to May, 1917, Locomotive Foreman, Sherbrooke, Que.; May, 1917, to June, 1918, Locomotive Foreman, Smiths Falls, Ont.; June, 1918, to Apr. 24, 1920, General Foreman, McAdam Jct., N.B.

**F. S. Brown**, Trainmaster, Michigan Central Rd., Detroit, Mich., and formerly of St. Thomas, Ont., died at Detroit, May 4, aged 52, from pneumonia.

**J. A. Burnett**, electrical engineer, of Smart & Burnett, consulting engineers, Montreal, has been appointed by the G.T.R. to assist in the appraisal of the electrical equipment of the St. Clair River tunnel, Montreal & Southern Counties Ry., and Oshawa Electric Ry., in connection with the pending acquisition of the G.T.R. by the Dominion Government.

**John Robert Caswell**, whose appointment as Division Engineer, Sudbury Division, Ontario District, C.P.R., Sudbury, Ont., was announced in our last issue, was born at Coldwater, Ont., Apr. 13, 1892, and entered railway service in 1908, since when he has been, during the summers of 1908 and 1909, chainman, C.P.R., Coldwater and Toronto; Apr. to Sept., 1910, chainman, C.P.R., Toronto; Sept., 1910, to Aug., 1912, rodman and chainman, C.P.R., Coldwater and Guelph Jct., Ont.; Aug., 1912, to Jan., 1915, transitman, C.P.R., Guelph Jct. and Montreal; Jan. to Oct., 1915, transitman, Lake Erie & Northern Ry., Simcoe, Ont.; Oct., 1915, to Oct., 1916, Assistant Engineer, Westinghouse Church Kerr & Co., and Aetna Chemical Co., Drummondville, Que.; Oct., 1916, to Jan., 1917, party chief, Foundation Co., Port Colborne, Ont.; Jan. to Apr., 1917, transitman, Hydro Electric Power Commission of Ontario, Niagara Falls, Ont.; Apr., 1917, to Jan., 1918, senior transitman, C.P.R., London, Ont.; Jan. to Sept., 1918, transitman, H. E. P. C. of Ontario, Niagara Falls, Ont.; Sept., 1918, to Apr. 1920, Division Engineer, London Division, Ontario District, C.P.R., London, Ont.

**James Coleman**, who has been appointed Assistant to General Superintendent, Motive Power and Car Department, G. T.R., Montreal, was born at Port Huron, Mich., and started work with the G.T.R. as a car department apprentice in 1873. He worked at Port Huron until 1889, when he was appointed foreman at Chicago, remaining in that position until 1899, when he was appointed Master Car Builder, Central Vermont Ry., at St. Albans, Vt. In 1905 he entered the Canada Car Co.'s service at Montreal, taking charge of the manufacturing department, and in 1906 returned to his former position with the Central Vermont. In Jan., 1908, he was appointed Superintendent, Car Department, G.T.R., at Montreal, and on May 1, 1920, was appointed to his present position, his former one being abolished. He was second Vice President of the Master Car Builders Association for the year 1916-17, and has been nominated as Vice Chairman, American Railroad Association, Section 3, Mechanical, the election for which will take place at Atlantic City in June.

**J. Coleman**, Assistant to General Superintendent Motive Power and Car Departments, G.T.R., Montreal, has been nominated as Vice Chairman, American Railroad Association, Section 3, Mechanical, to serve until June, 1922. The election will take place at the annual meeting in Atlantic City in June.

**W. R. Davidson**, General Superintendent, Western Lines, G.T.R., Chicago, Ill., was entertained at dinner, and presented with a diamond scarf pin by his associates at the end of April, at Montreal,

H. C. Grout,
General Superintendent, Ontario District, Canadian Pacific Railway.

where he was General Superintendent, Eastern Lines, on leaving the district for Chicago, to take up his new duties.

**Mathew Cochran Dickson**, who died at Hamilton, Ont., May 1, after a long illness, was born at Juniper Green, near Edinburgh, Scotland, Apr. 23, 1846, and was brought to Canada when quite young. He was for a number of years, up to June 30, 1885, Assistant General Freight and Passenger Agent, Northern & North Western Ry. (now part of G.T.R.), Toronto; July 1, 1885, to Feb. 28, 1888, Travelling Passenger Agent, Missouri Pacific Ry., Chicago, Ill.; Mar. 1, 1888, to Aug. 7, 1890, General Freight and Passenger Agent, Erie & Huron Ry., Sarnia, Ont.; Aug. 7, 1890, to May 31, 1902, District Passenger Agent, G.T.R., Toronto; June 1, to July 16, agent, Transportation Department, G.T.R., Wingham, Ont.; July 16, 1902, to Oct. 23, 1909, agent, G.T.R., Woodstock, Ont.; Oct. 23, 1909, to May 1, 1911 Agent G.T.R. Brantford. On May 1, 1911, he retired on pension and moved to Hamilton, where he for some years, as long as his health permitted, conducted a steamship ticket agency.

**R. H. Fish**, General Superintendent, Eastern Lines, G.T.R., Montreal, was entertained Apr. 30, by a number of friends and associates at Stratford, Ont., where he was Superintendent for a number of years, and presented with a silver tea service and cabinet of silver, on leaving Stratford to take up his new duties at Montreal. The presentation was made by W. White, Trainmaster, G.T.R., Palmerston, Ont.

**W. R. Fitzmaurice**, whose appointment as Superintendent, New Glasgow Division, Maritime District, Canadian National Rys., New Glasgow, N.S., was announced in our last issue, was presented with a travelling bag, May 7, by the staff at Campbellton, N.B., where he had been Superintendent, prior to leaving to enter on his new duties.

**Timothy Foley**, railway contractor, etc., died at St. Paul, Minn., May 25, after an illness of several months. He was born in Lanark County, Ont., in 1838.

**Mrs. T. A. Garland**, mother of Mrs. D. B. Hanna, wife of the President of the Canadian National Rys., died at Portage la Prairie, Man., May 11. Mrs. Hanna was there at the time, and Mr. Hanna went from Toronto for the funeral.

**Gordon Grant**, whose appointment as Chief Engineer, Dominion Highways Commission, was announced in our last issue, was born at Dufftown, Banffshire, Scotland, Jan. 2, 1865, and is a son of the late Peter Grant, a member of Sir Sandford Fleming's staff on the construction of the Intercolonial Ry. and the C.P.R. He was educated at Ottawa, and went to the Argentine Republic in 1881 with his uncle, W. B. Grant, Chief Engineer, Buenos Aires Southern Ry., and remained there for six years. On his return to Canada in 1887, he was engaged, until 1890, on Intercolonial Ry. construction in Cape Breton, N.S.; from 1890 to 1893, on C.P.R. survey work east of Montreal; 1893 to 1897, on construction on the Flagler roads in the U.S.; 1897 to 1900, on construction, Crowsnest Pass line and Kootenay and Arrowhead Ry. for the C. P.R.; 1900 to 1903, chief draftsman, Construction Department, C.P.R., Montreal; May, 1904, to Feb., 1905, on location work, C.P.R., in British Columbia; Feb., 1905, to Sept.. 1906, on location work northwest of Quebec, Que., National Transcontinental Ry.; Sept., 1906, to May, 1907, Assistant District Engineer, National Transcontinental Ry., Quebec, Que.; May, 1907, to Aug., 1909, Inspecting Engineer, N.T.R. Commission; Aug., 1909, to 1917, Chief Engineer, National Transcontinental Ry.; 1917 to Jan., 1919, Chief Engineer, Quebec & Saguenay Ry.; Jan., 1919, to April, 1920, Consulting Engineer, Department of Railways and Canals.

**Phelps Johnson, G. H. Duggan and G. F. Porter** were recipients recently of the Gzowski Medal, presented this year for the first time in triplicate, as collaborators of a brochure entitled "The Design, Manufacture and Erection of the Superstructure of the Quebec Bridge," considered by the Engineering Institute of Canada to be the most valuable contribution to engineering literature during the year.

**Dr. Thomas Wilson Lambert**, who is stated in a press report to have been formerly at St. Thomas Hospital, London,

Eng., and afterwards "in medical charge of the western section, C.P.R.," died in London, Eng., recently. He is referred to as having been well known in British Columbia, as a fine shot and an expert salmon fisher. He was born in Hull, Eng., and we are officially advised that between 1890 and 1900 he served as medical officer between North Bend and Sicamous, on the British Columbia District C.P.R., with headquarters at Kamloops.

**Herbert J. Lambkin**, whose appointment as District Commissary Agent, Sleeping, Dining and Parlor Car Department, Canadian National Rys., Winnipeg, was announced in our last issue, was born at Quebec, Que., July 25, 1881, and entered transportation service in August, 1906, since when he has been, to May 1, 1909, sleeping car conductor, C.P.R., Montreal; June, 1909, to Oct., 1917, Train Agent and Travelling Passenger Agent, Grand Trunk Pacific Ry., Winnipeg; Nov. 1917, to Apr., 1920, Inspector, Sleeping, Dining and Parlor Car Service, Canadian Northern Ry., and Canadian National Rys., Winnipeg.

F. S. MacDonald, Trainmaster, North Shore Section, Pacific Great Eastern Ry., Vaucouver, B.C., died recently. This is a local line of 12 miles, operated by gasoline cars.

**M. H. MacLeod**, Vice President, Operation and Maintenance, Canadian National Rys., Toronto, who, as stated in Canadian Railway and Marine World for May, was spending some time in Victoria, B.C., for the benefit of his health, went to Winnipeg towards the end of May. He will spend some time on the western lines, on business, and is expected to return to Toronto late in June.

George R. Mash, a former Assistant General Purchasing Agent, G.T.R., died at Montreal, May 21, aged 83. He was born at Toronto, educated in Upper Canada College and graduated as a civil engineer. He entered railway service as private secretary to General Manager, Great Western Ry. (now part of G.T.R.), Hamilton, Ont. Later he was on the engineering staff on the construction of the Hoosac Tunnel near North Adam, Mass., and was subsequently appointed General Manager, Detroit, New Haven & Milwaukee Rd., Detroit, Mich., and when that railway was taken over by the G.T.R. in 1884 he was appointed Assistant General Purchasing Agent, G.T.R., at Montreal, which position he held until his retirement in 1890.

**W. T. Moodie**, Superintendent, Canadian National Rys., Port Arthur, is spending a vacation at Vancouver, B.C., with his wife and family.

**Charles R. Moore**, who has been appointed General Superintendent of Car Service, G.T.R., Montreal, was born at Hamilton, Ont., Oct. 12, 1867, and entered G.T.R. service in 1883, since when he has been, successively, junior clerk, Mechanical Accountant's office, Hamilton, Ont.; and in the Motive Power, Car, Maintenance of Way and Transportation Departments, Montreal, and at various terminals on the system. In 1911, being then chief clerk to Superintendent, Toronto, he was appointed chief clerk to the then Vice President (H. G. Kelley), and in May, 1916, he was appointed Assistant to Vice President, Construction,, Operation and Maintenance (H. G. Kelley), and in Sept., 1917, Assistant to Vice President in charge of Motive Power, Car Equipment and Machinery (W. D. Robb), which position he held at his present appointment.

**Reginald Frederick Nicholson**, whose appointment as Assistant Engineer, Portland Division, Eastern Lines, G.T.R., Portland, Me., was announced in our last issue, was born in London, Eng., July 2, 1892, and entered railway service in Aug. 1911, since when he has been, to Feb., 1913, rodman, C.P.R., Vancouver, B.C.; Feb. to Oct., 1913, rodman, Esquimalt & Nanaimo Ry., Union Bay, B.C.; July to Dec., 1914, draftsman, Pacific Great Eastern Ry., Lillooet, B.C.; July, 1916, to Dec., 1917, mining surveyor, Prestea, Gold Coast, West Africa.

J. T. Peer, who died at Indianapolis, Ind., at the end of April, after a short illness, aged 37, was for a number of years in C.P.R. service at Toronto, and for the past few years was in service of the United Grain Growers Ltd., Winnipeg.

**Jos. Quinlan**, who recently retired from the position of District Passenger Agent, G.T.R., Montreal, under the pension fund rules, after 43 years with the company, was entertained by a number of his friends and former associates at Montreal, May 4, and presented with a set of diamond studed gold cuff links and a purse of money.

W. J. Uren,
Assistant General Superintendent, Quebec District, Canadian Pacific Railway.

**Hon. J. D. Reid**, Minister of Railways and Canals, has been elected a member of the Old Time Telegraphers' and Historical Association.

**Dr. A. Gordon Rice**, Divisional Surgeon, G.T.R., Toronto, died there, May 20, aged 36, after a long illness. He was appointed to the G.T.R. position in 1914.

**J. G. Rutherford**, C.M.G., one of the members of the Board of Railway Commissioners, will receive the honorary degree of Doctor of Veterinary Science, of the University of Toronto, in June.

**Lord Shaughnessy**, Chairman, C.P.R. Co., and **Sir John Kennedy**, Consulting Engineer, Montreal Harbor Commissioners, were presented with gold badges as honorary members of the Engineering Institute of Canada, at a recent meeting of the Montreal branch. The badges are replicas of the one especially struck for the institute for presentation to the Prince of Wales, on his installation as an honorary member, during his recent Canadian tour.

**Mrs. Sutherland**, wife of Hugh Sutherland, of Winnipeg, formerly Executive Agent, Canadian Northern Ry., and now President, Western Dominion Collieries, and one of the Winnipeg Electric Ry. directors, died on May 9, at St. Paul, Minn., where she was taken ill, on her way home, after spending some time in Florida.

**Charles Henry Worby**, whose appointment as Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, Canadian National Rys., Winnipeg, was announced in our last issue, was born at London, Ont., May 18, 1883, and entered transportation service in July, 1899, since when he has been, to Aug. 15, 1900, booking clerk, Royal Albert Dock Ry., London, Eng.; Aug. 16, 1900, to Sept. 14, 1906, chief clerk, Central London Ry., London, Eng.; July 2 to Sept. 30, 1913, store clerk, Canadian Northern Ry., Winnipeg, Man.; Oct. 1, 1913, to May 31, 1915, Inspector, Sleeping and Dining Cars, same road, Winnipeg; June 1, 1915, to Apr. 30, 1917, Agent, Sleeping and Dining Car Department, same road, Saskatoon, Sask.; May 1 to Oct. 31, 1917, Agent, Sleeping and Dining Car Department, same road, Winnipeg; Nov. 1, 1917, to May 31, 1918, District Commissary Agent, Sleeping and Dining Car Department, same road, Winnipeg; June 1, to Sept. 16, 1918, acting Assistant Superintendent, same road, Winnipeg; Sept. 17, 1918, to Apr. 30, 1920, District Commissary Agent, Sleeping and Dining Car Department, Canadian National Rys., Winnipeg.

**John Anderson Wright**, whose appointment as Assistant Foreign Freight Agent, G.T.R., Montreal, was announced in our last issue, was born at Peterborough, Ont., Oct. 27, 1881, and entered G.T.R. service May 1, 1899, since when he has been, to Dec. 31, 1899, junior 1900, to Feb. 28, 1901, stenographer, clerk, General Freight Office; Jan. 1, same office; Jan. 1, 1903, to Sept. 22, 1904, stenographer, Foreign Freight Agent's office; Sept. 23, 1904, to July 31, 1907, stenographer, General Freight Agent's office; Aug. 1, 1907, to May 31, 1915, clerk, Foreign Freight Office; June 1, 1915, to Mar. 31, 1917, chief clerk, same office; Mar. 1, 1917, to Apr. 25, 1920, Grain Agent, Foreign Freight office, all at Montreal.

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**The Winnipeg Railway Clerk's Association** has been incorporated for mutual protection, against loss of wages through illness or accident; the promotion of social, physical and mental welfare of the members; the appointment of a committee to negotiate with employers as to wages, etc., and other purposes connected with the members' interests. The incorporators are:—W. Bone, C. T. Brindle, J. McRoberts, H. O. Hughes, W. B. Marsden, J. Jack, G. A. Winks, L. P. Rosson, H. T. Rinnick, and Miss E. G. Hunter, all described as railway clerks.

**Sir Robert Reid's Will.**—The action brought by Miss Reid, against other members of the family, the Reid Newfoundland Co., Lord Shaughnessy and others, with respect to the late Sir Robert Reid's will came before the Probate Court in Montreal May 7 on an amended plea filed by Miss Reid, and was adjourned for a month, owing to the absence of some of the parties in Newfoundland and in Europe.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Burrard Inlet Tunnel & Bridge Co.**—The Dominion Parliament has extended for two years the time within which the company may commence the construction of a tunnel under the first narrows of Burrard Inlet, and a bridge over the second narrows for railway and general traffic purposes, with approaches and railways connecting with existing lines of railway. The charter is owned by the cities of Vancouver and North Vancouver and surrounding municipalities. (Jan. pg. 18.)

**Canadian Niagara Bridge Co.**—A meeting of shareholders will be held at the Toronto, Hamilton & Buffalo Ry. offices, Hamilton, Ont., June 2, to elect officers and transact other business. E. D. Cahill is Secretary of the provisional directors. This is the company which proposes to build a new bridge across the Niagara River near Welland, Ont.

**Dolly Varden Mines Ry.**—A press report states that an agreement has been reached between the Dolly Varden Mines Co. and Taylor Engineering Co. of Vancouver under which all matters in dispute have been settled, actions withdrawn, and the application to the Dominion Government to declare the British Columbia legislation, under which the Taylor Engineering Co. obtained a title to the property, declared ultra vires, abandoned. (May, pg. 245.)

**Esquimalt & Nanaimo Ry.**—The Dominion Parliament has authorized the company to build a line from near the present terminus at Courtenay, on Vancouver Island, B.C., northerly and northeasterly to Duncans Bay, on the east coast of the island. (May, pg. 235.)

**The Flinflon Mining Proposition and the projected railway.**—A press report says that J. E. Hammell, one of the owners of the Flinflon mine in northern Manitoba, stated recently that $250,000 will be expended in development work during this year, and that before a return on the money invested can be obtained the total expenditure will amount to $10,000,000. The company will be in a position to guarantee an output of at least 2,000 tons if not 5,000 tons a day within three years. This guarantee will be forwarded to the Manitoba Government, which has promised to build a railway to the property at a cost of $2,700,000, the railway to be operated by Canadian National Rys. (April, pg. 177.)

**Grand Trunk Pacific Ry.**—We are officially advised that it is intended to invite tenders at an early date for the gravel fill into which the piling for the erection of the wharf for Salmon handling at Prince Rupert, B.C., will be driven; and for the construction of the dock, exclusive of the warehouse. The building of the warehouse is being held in abeyance at present. The dock will have a length of 860 ft. along the waterfront, and a width of 173 ft. It is to be built of creosoted piling, where piling is subject to the toredo, and of green piling on the shore side of the wharf, where piling is safe from marine borers. There will be a railway track along the front of the wharf, and two depressed tracks along the shore front. It is intended to provide for the accommodation of two Barlow elevators and for a gantry crane.

The warehouse will be 820 x 146 ft., within which will be a suspended office 58 ft. 4 in. bq 30 ft. 10 in. The warehouse will have a capacity of 350,000 cases of salmon, leaving a passage of 26 ft. in the centre, and two of 16 ft. each at the sides, or a capacity of 12,000 tons of ocean traffic, leaving similar passage ways. (April, pg. 175.)

**Great Northern Ry.**—A press report states that the company proposes to build a permanent station at Crescent Beach, B.C. A number of improvements to the highway approaches to the station site, including a subway under the tracks, were reported to be in progress May 6. (May, pg. 235.)

**Hudson Bay Ry.**—The Minister of Railways informed the House of Commons recently that the department had been advised by the Canadian National Rys. management that it is intended to renew a large number of ties, to do some surface ballasting, and other work on the line between Pas and the Kettle Rapids of the Nelson River, in order to continue operation on the line. (May, pg. 235.)

**Kettle Valley Ry.**—The Dominion Parliament has extended for five years the time within which the company may build the previously authorized line from near Grand Forks, B.C., to 50 miles up the north fork of the Kettle River; and from near Otter Summit to the Aspen Grove mineral district, 30 miles. The act also authorizes the company to build a line from near Coalmount on the joint section operated by the K. V. Ry. Co. and the Vancouver, Victoria & Eastern Ry. & Navigation Co., southerly to the Granite Creek coal areas, 12 miles. (May, pg. 235.)

**Montreal Central Terminal Co.**—A bill providing for an extension for five years of the time within which the company may build its projected tunnels or bridge or tunnel, under or over the St. Lawrence River, and lay out its projected terminals in Montreal, was read a second time in the Senate, May 10, and referred for consideration to the railway committee. On May 11 Hon. R. Dandurand called attention to the fact that on a former occasion the company's bill had failed to pass the railway committee on account of opposition raised by the Minister of Railways, and that he had been informed lately that the government had changed its attitude on the bill and would not now oppose it. Sir James Lougheed promised to ascertain what was the government's attitude to the bill, so as to be able to inform the committee in due time, but he had no knowledge that the government had altered its opinion on the bill since it was last before the Senate's railway committee. (Sept., 1919, pg. 432.)

**Montreal, Joliette & Transcontinental Jct. Ry.**—The Dominion Parliament has extended for five years the time within which the company may build its projected railway from Maisonneuve, Que., northerly through Hochelaga, L'Assomption and Montcalm counties in Joliette, thence north by northwest to St. Michel des Saints, and thence to Parent on the National Transcontinental Ry., 180 miles. (April, pg. 175.)

**Northern Light Rys. Co.**—The Ontario Legislature has passed an act incorporating this company. We are officially advised by the Canadian Light Rys. Construction Co., which is behind the project, that it is the intention to proceed immediately with building a 36 in. gauge railway from Elk Lake to Gowganda; Gowganda to Fort Mechewan; and also from Swastika through Kirkland Lake to Larder Lake, in Skead and Boston Tps. The line will have a 3% gradient as the maximum, 30 lb. rails and oil burning steam locomotives will be used. The surveys for the line between Elk Lake and Gowganda have been completed. J. K. McDonald is Chief Engineer, with office at Elk Lake, Ont. (May, pg. 235.)

**Pabos, Amqui & Edmundston Ry.**—The House of Commons railway committee reported April 29 that it was not in the public interest to proceed with a bill providing for the incorporation of the Pabos, Amqui & Edmundston Ry. Co. to build a railway from Pabos, Gaspe County, Que., to the Canadian National Rys. at Amqui, thence to Edmundston, N.B., with a branch from some point on the main line to Grand Valle, a seaport on the St. Lawrence River. The committee's report was adopted.

The promoters of the proposed company are all local men, and it was claimed that the projected railway would open up for development a large area of the Gaspe peninsula not now reached by railway or other means of transportation. The Minister of Railways objected to the passage of the bill on the ground that the line could not be built and maintained by an independent company, and that the government would inevitably have to take it over or to subsidize it. He thought that the day of subsidies had passed, and that if such railways were to be built the provinces interested should make themselves responsible for them as a factor in the development of natural resources. The General Manager of the Atlantic, Quebec & Western Ry. and the Quebec Oriental Ry. opposed the project on the ground that it would take traffic from his lines, as well as from the Canadian National Rys. His lines represent an investment of $8,000,000 of British capital, and are in danger of having to go into liquidation. Hon Rodolphe Lemieux and others supported the project, and it was alleged that the main opposition to the bill came from Robin & Co., a Jersey Island concern, which is "a replica on the Gaspe peninsula of the Hudson's Bay Co. in the west," and which seeks to control the country as the H. B. Co. did in the old days. The bill was defeated in the railway committee, April 29, by 31 votes to 29. (May, pg. 235.)

**Pacific Great Eastern Ry.**—A press report states that the British Columbia Government is arranging to put an engineering party in the field during the summer to make surveys for an extension of the line from the present projected terminus at Prince George, B.C., into the Peace River country. The original proposal was that the line should connect at the British Columbia-Alberta boundary with the Edmonton, Dunvegan & British Columbia Ry.

We are advised that the Canadian Bridge Co., Walkerville, Ont., has been given a contract for the steel work on the bridge across Deep Creek. It will consist of a deck plate girder viaduct of spans from 60 to 100 ft. long, on vents to a maximum height of about 255 ft. from the top of masonry to track level. A description of the bridge was given in Canadian Railway and Marine World, Dec., 1919, pg. 654. It is expected to begin during June and to have it completed by the autumn. (May, pg. 235.)

**Quebec Central Ry.**—We are officially advised that a contract has been let to J. T. and J. F. Davis, Montreal, for grading and masonry work on the line to be

built from Scotts on the main line, to a junction with the Canadian National Rys. about two miles west of St. Isidore. The length of the new line will be eight miles; work is to be started forthwith; the ballasting and tracklaying will be done by the company's own forces, and it is expected to have the line in operation by the autumn. The object of the construction is to give the company an entrance into Quebec City over the Canadian National Rys. and the Quebec Bridge. The construction work will be in charge of J. T. Morkill, Chief Engineer, Sherbrooke, Que., with F. H. Hibbard as Resident Engineer at Scotts.

We are further advised that no decision has been arrived at with regard to any further extension of the Chaudiere Valley branch from Lake Frontier to St. Pamphille, and that it is not likely that anything will be done for another year. (May, pg. 236.)

St. John & Quebec Ry. — The New Bruuswick Legislature has extended the time for the construction of the uncompleted northern section of this railway, and has provided for the granting of further aid towards the cost of construction. When these bills came before the committee of the legislature the Premier stated that the railway had been practically completed between Westfield and Centerville, except for some little finishing up work. An agreement had been made with the C.P.R. for running rights between Westfield and St. John, and Canadian National Rys. trains were being operated over the St. J. & Q. Ry. into St. John. With regard to the extension northerly from Centerville, the Premier stated that the Dominion Government was projecting a line from Meductic to the International Boundary, to connect with the Maine Central Rd., and if this were done the New Brunswick Government would no doubt extend the St. J & Q. Ry. from Centerville to Andover and ultimatedly to Grand Falls. In regard to the bill to provide further aid for the railway the Premier explained that it was to provide for expenditures not yet funded. (April, pg. 176.)

Timiskaming & Northern Ontario Ry. The Premier of Ontario, in introducing a bill to provide for the extension of the T. & N. O. Ry. in the legislature recently explained that it was simply to give the government power to proceed with construction when the opportune time comes. It was really intended as a notification to Quebec that it was the Ontario Government's intention to build the line, and as a guarantee to those who explore in the territory that the line will be built when the proper time comes.

The bill authorizes the T. & N. O. R. Commission to build and operate an extension of the railway from the present northern terminus at Cochrane northerly to James Bay, with such spurs and branches as may be necessary; the location of the extension and its branches to be subject to the approval of the Lieutenant Governor in council; the cost of the works authorized to be paid out of such sums as may from time to time be appropriated by the legislature. On the bill coming up for the second reading May 5, the Premier is reported to have said he was strongly of opinion that the T. & N. O. Ry. must ultimately find an outlet to James Bay, for if an Ontario railway does not reach the Bay a Quebec one will. The railway is at present a loss to the province, and two courses are open to the government, the first to make the line pay and the second to sell it to the Dominion Government. He did not agree with the second suggestion, but was in favor of retaining the line and so develop it as to make it a paying proposition.

Toronto, Hamilton & Buffalo Ry.—The Hamilton, Ont., City Council's railway committee is reported to have recommended the refusal of the company's application for permission to move its tracks northerly at the corner of John and Hunter Streets. (April, pg. 176.)

## Prepayment of Freight from United States to Canada.

The New York Central Rd. (line Buffalo, N.Y., Clearfield, Pa., and east) and the West Shore Rd.'s Freight Traffic Department issued the following notice in April:

"Owing to the existing rate of exchange, prepayment of freight charges, including advance charges, if any, on all shipments of freight destined to points in Canada, will be required by the New York Central Rd. (line Buffalo, N.Y., Clearfield, Pa., and east) and West Shore Rd. on and after May 1, except that prepayment of freight charges will not be required on freight originating in the United States, in transit April 30."

All other railways in eastern U.S. territory issued similar notices.

The Delaware & Hudson Co. issued the following circular May 10:—"Because of the existing rate of exchange all freight and other charges must be prepaid, as follows, on all freight shipments consigned to Canadian destinations on and after May 1, 1920:

"All freight and other charges must be prepaid on shipments originating at points in the United States on and after May 1, 1920, to waybill destinations in Canada where joint rate from point of origin to such destination in Canada is applicable.

"All freight and other charges must be prepaid to Canadian gateway points (such as Rouses Point, Noyan Junction, Delson Junction, Buffalo, East Buffalo, Black Rock, Suspension Bridge, etc.), when combination rates based upon proportional rates or local rates from points of origin to such gateway points are applicable, except shipments routed via Grand Trunk Railway, on which all freight and other charges from point of origin to Canadian destination must be prepaid, regardless of how rates are based.

"Shipments originally consigned to points in the United States and reconsigned to points in Canada are subject to payment at time of reconsignment of all freight and other charges accruing between point of origin and Canadian destination or gateway as described in rules 1 and 2.

"Agents will refuse to accept shipments for transportation consigned to Canadian destinations unless above instructions are complied with. Agents at junction points will refuse to accept from connecting lines all shipments waybilled on and after May 1, 1920, unless all freight and other charges have been prepaid as outlined herein. Full report of such refused shipments must be immediately forwarded by wire to the General Freight Agent (Merchandise Freight), or to the Coal Freight Agent (Coal and Coke). This information should be given wide distribution among shippers and copy posted in a conspicuous place in each freight station."

The Interstate Commerce Commission issued the following at Washington May 18:—"Conference Ruling 207, which reads as follows: 'Payment for Transportation.—Nothing but money can be lawfully received or accepted in payment for transportation subject to the act, whether of passengers or property, or for any service in connection therewith, it being the opinion of the commission that the prohibition against charging or collecting a greater or less of different compensation than the established rates or fares in effect at the time, precludes the acceptance of services, property, or other payment in lieu of the amount of money specified in the published schedules,' is amended by adding at the end thereof the following: 'The existing difference in exchange value between the monies of the United States and Canada, while continuing to bear the same denomination, has been productive of confusion and uncertainy as to the construction to be placed upon tariff schedules, division sheets, and accounts in respect of traffic crossing the International Boundary. We are of opinion that where transportation of persons, or property, or transmission of intelligence by wire or wireless, takes place partly within the United States and partly within Canada, the tariff charges or divisions thereof accruing for the past which takes place within the United States are payable only in lawful money of the United States, irrespective of the money in which tariff charges or divisions thereof accruing for the part which takes place in Canada may be payable under the laws there in force. Adjustment should be made in accordance herewith, by carriers subject to the act, in settling their accounts with connecting carriers. Appropriate rules or regulations to give effect to this ruling may also be included by such carriers in their tariff schedules, if they so desire. The practice, which has grown up since development of said difference in exchange values, of requiring prepayment of charges in cases where not customarily required theretofore, tends to embarrass shippers and impede foreign commerce. Carriers subject to the act will be expected to refrain from such unusual requirements in cases where they are not justified by other considerations.'"

## Grain Inspected at Western Points.

The following figures compiled by the Dominion Bureau of Statistics' Internal Trade Division, show the number of cars of grain inspected at Winnipeg and other points on the western division during April and during 8 months ended Apr. 30, 1920, and Apr. 30, 1919.

| | Apr. 1920 | 8 mos. to Apr. 30, 1920 | 8 mos. to Apr. 30, 1919 |
|---|---|---|---|
| Canadian National Rys. | 5,764 | 44,981 | 42,188 |
| Canadian Pacific Ry..... | 4,109 | 63,032 | 58,770 |
| Grand Trunk Pacific Ry.. | 1,303 | 18,367 | 13,675 |
| Great Northern Ry. (Duluth) . . ..... | 4 | 495 | 760 |
| Totals . . ..... | 11,180 | 126,875 | 115,393 |

**The C.P.R. Club, Limited**, has been incorporated under the Quebec Companies Acts with authorized capital of $10,000 and office in Montreal, to establish and maintain a club. The provisional directors are J. Beaudoin, J. E. Boisvert, E. Griot, A. Loiseau, J. Nadeau, and T. Barretta.

Bridgeburg-Buffalo Fares.—A press report states that the Bridgeburg, Ont., Town Council has appealed to the Board of Railway Commissioners against an increase of fares on the dummy motor car running between Bridgeburg, Ont., and Buffalo, N.Y. The commutation rate has been increased from 55c. to 75c. for a 10-trip ticket.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canada Steamship Lines Ltd.—J. H. EDWARDS, heretofore chief clerk, Freight Claims Department, has been appointed Assistant Freight Claims Agent, C.S.L., and Northern Navigation Co. Office, Montreal.

E. S. SMILEY has been appointed Western Claims Agent, C.S.L. and Northern Navigation Co. and will handle all claims on traffic originating in, or destined to, points west of Sault Ste. Marie, Ont. Office, Winnipeg.

Canadian Pacific Ocean Services Ltd. A. W. SNELL, heretofore acting European Freight Agent, Montreal, has been appointed European Freight Agent. there. Office, Board of Trade Building.

Canadian National Rys.—S. D. DULMAGE has been appointed Sleeping and Dining Car Agent, Montreal, vice A. T. Landry, transferred.

J. B. JACKSON, heretofore dining car storekeeper, has been appointed sleeping and dining car agent, Calgary, Alta.

J. M. KERR, heretofore Assistant Master Mechanic, Montreal Division, Eastern Lines, Montreal, has been appointed Assistant Master Mechanic, Saguenay Division, Eastern Lines, vice T. S. Lowe, transferred. Office, Quebec, Que.

R. KING, heretofore relieving Superintendent, Kamloops, B.C., has been appointed acting Superintendent at Port Arthur, during the absence on leave of W. T. Moodie.

A. T. LANDRY, heretofore Sleeping and Dining Car Agent, Montreal, has been appointed Inspector, Sleeping, Dining and Parlor Cars there.

T. S. LOWE, heretofore Assistant Master Mechanic, Saguenay Division, Eastern Lines, Quebec, Que., has been appointed Assistant Master Mechanic, Montreal Division, Eastern Lines, vice J. M. Kerr, transferred. Office, Montreal.

J. F. McGUIRE has been appointed acting General Agent, Seattle, Wash., with territory covering Washington and Oregon States, reporting to Assistant General Freight and Passenger Agent, Vancouver, B.C.

W. L. STITT, heretofore Sleeping and Dining Car Inspector, has been appointed acting Sleeping and Dining Car Agent, Ottawa, Ont., C. H. Parr, Sleeping and Dining Car Agent there, having resigned to manage his father's hotel in Southport, Eng.

Owing to a mistake in makeup in our May issue the appointments of W. M. Neal, J. K. Savage, W. J. Uren and A. Williams were classified under Canadian National Rys., instead of under Canadian Pacific Ry. They are repeated under their proper heading in this issue.

Canadian Pacific Ry.—E. A. BARNWELL, heretofore Locomotive Foreman, Calgary, Alta., has been appointed Locomotive Foreman, Kamloops, B.C., vice J. W. Jackson transferred.

E. BOWIE, heretofore General Foreman, McAdam Jct., N.B., has been appointed Master Mechanic, Brownville Division, New Bruswick District, vice W. Wright, transferred. Office, Brownville Jct., Me.

G. D. BROPHY has been appointed District Passenger Agent, Banff, Alta., vice A. L. Powell, resigned.

A. E. EDWARDS has been appointed Locomotive Foreman, McAdam, N.B., vice R. A. Miller, promoted.

JOHN HALSTEAD, Division Freight Agent, Calgary, Alta., has been appointed Division Freight Agent, Winnipeg, vice A. T. McKean, transferred.

J. W. JACKSON, heretofore Locomotive Foreman, Kamloops, B.C., has been appointed Locomotive Foreman, Calgary, Alta., vice E. A. Barnwell, transferred.

W. McILROY, heretofore chief clerk, District Passenger Agent's office, Toronto, has been appointed General Agent, Passenger Department, Detroit, Mich., vice M. G. Murphy, resigned to enter private business.

A. T. McKEAN, Division Freight Agent, Winnipeg, has been appointed Division Freight Agent, Calgary, Alta., vice John Halstead, transferred.

John R. Caswell,
Division Engineer, C.P.R., Sudbury, Ont.

R. A. MILLER, heretofore Locomotive Foreman, McAdam, N.B., has been appointed General Foreman there, vice E. Bowie, promoted.

W. M. NEAL, heretofore Assistant General Superintendent, Quebec District, Montreal, has been appointed Assistant General Superintendent, Ontario District, vice J. K. Savage, promoted. Office, Toronto. Through an error in make-up this appointment appeared under Canadian National Rys. in the May issue.

B. J. QUILTY has been appointed Assistant Superintendent, Sudbury Division, Ontario District, vice R. B. Girouard, transferred. Office, Sudbury, Ont.

J. K. SAVAGE, heretofore Assistant General Superintendent, Ontario District, Toronto, has been appointed General Superintendent, Quebec District, vice J. M. Woodman, transferred. Office, Montreal.

W. J. UREN, heretofore Superintendent, Farnham Division, Quebec District, Farnham, Que., has been appointed Assistant General Superintendent, Quebec District, vice W. M. Neal, transferred. Office, Montreal. Through an error in make-up, this appointment appeared under Canadian National Rys. in the May issue.

A. WILLIAMS, heretofore Superintendent, London Division, Ontario Distract, London, Ont., has been appointed Superintendent, Farnham Division, Quebec District, vice W. J. Uren, promoted. Office, Farnham, Que. Through an error in make-up this appointment appeared under Canadian National Rys. in the May issue.

J. H. WILSON has been appointed Locomotive Foreman, John St., Toronto, vice R. V. Carleton, transferred.

Delaware & Hudson Co.—Consequent on the U.S. Government's control having ceased, the company has appointed officers for its railway, including, among others, the following:—

F. P. GUTELIUS, Vice President in Charge of Operation and Traffic, Albany, N.Y.

C. S. SIMS, Resident Vice President, Montreal.

The officials named occupied similar positions up to the time the railway was taken over by the U.S. Railroad Administration.

Grand Trunk Ry.—J. COLEMAN, heretofore Superintendent, Car Department, has been appointed Assistant to General Superintendent, Motive Power and Car Department, and his former position has been abolished. Office, Montreal.

F. FOUSE, heretofore Master Car Builder, London shops, Ont., has been appointed Master Car Builder, Montreal shops, vice W. A. Pitt, promoted.

T. M. HYMAN, heretofore Assistant Foreman, Montreal shops, has been appointed Master Car Builder, London, Ont., shops, vice F. Fouse, transferred.

C. R. MOORE, heretofore Assistant to Vice President, has been appointed General Superintendent of Car Service, vice J. E. Duval, deceased. Office, Montreal.

C. F. NEEDHAM, heretofore Mechanical and Electrical Engineer, has been appointed Assistant to General Superintendent, Motive Power and Car Department. Office, Montreal.

W. A. PITT, heretofore Master Car Builder, Montreal shops, has been appointed General Master Car Builder, and has also assumed the duties heretofore performed by the Superintendent, Car Department, which position has been abolished. Office, Montreal.

Grand Trunk Pacific Ry.—F. CLARK, heretofore Locomotive Foreman, Melville, Sask., has been appointed Locomotive Foreman, Prince George, B.C., vice A. T. Hannah, transferred.

A. T. HANNAH, heretofore Locomotive Foreman, Prince George, B.C., has been appointed Locomotive Foreman, Melville, Sask.

J. A. C. KELMAN, heretofore circuit manager, has been appointed telegraph supervisor, Central and Western Divisions, vice R. M. MacMillan, promoted. Office, Winnipeg.

R. M. MacMILLAN, heretofore Telegraph Traffic Supervisor, Central and Western Divisions, has been appointed Divisional Superintendent of Telegraphs, and Superintendent of Time Service, Central Division, with jurisdiction over all matters appertaining to construction and maintenance of telegraph and telephone lines, operation of railway and commercial telegraphs and of time service, vice

F. T. Caldwell, resigned to enter other service. Office, Winnipeg.

**Great Northern Ry.**—F. A. LEYFIELD, formerly in Northern Pacific Ry. service, Vancouver, and in military service overseas, and latterly in Pacific Great Eastern Ry. service, has been appointed Contracting Freight Agent, G.N.R., Vancouver, B.C.

**Greater Winnipeg Water District Ry.** J. H. ASHDOWN, one of the commissioners of the Greater Winnipeg Water District, is acting as chairman of the commission, which, among its other activities, owns and operates the Greater Winnipeg Water District Ry., the former chairman, R. D. Waugh, having gone to France as a member of the Saar Valley Commission, appointed by the allied powers; his position being Commissioner in charge of finance and supplies.

**Kettle Valley Ry.**—J. J. WARREN, having resigned as President, has been elected Chairman of the Board.

D. C. COLEMAN, Vice President, Western Lines, C.P.R., Winnipeg, has also been elected President, K.V.R., succeeding J. J. Warren, resigned on account of pressure of other business.

**Michigan Central Rd.**—A. J. MITCHENER, heretofore General Foreman, passenger car shop, St. Thomas, Ont., has been appointed Divisional General Car Foreman, Canada Southern Division, vice E. H. Wood, promoted. Office, St. Thomas, Ont.

E. H. WOOD, heretofore Division General Car Foreman, Canada Southern Division, St. Thomas, Ont., has been appointed Master Car Builder, Detroit, Mich., vice J. T. Downs, promoted.

**Pacific Great Eastern Ry.**—ROBERT WILSON, Auditor, has been acting as General Manager, since G. E. MacDonald's resignation, which was mentioned in Canadian Railway and Marine World for May.

**Rutland Rd.**—T. M. FALLOM has been appointed City Passenger Agent, Montreal.

S. LEBORVEAU has been appointed Canadian Passenger Agent, Montreal.

# Canadian National Railways Construction, Betterments, Etc.

Sydney Dry Dock Spur.—We were officially advised May 7 that construction would start in the near future on the spur line to the site of the projected dry dock at Sydney, N.S., and that the spur will be completed in the autumn. The track to be built, including the main spur and sidings, will be 5,300 ft. The siding is to be built on the usual standard siding agreement basis, the lesee being the Sydney Foundry & Machine Co.

New Glasgow Station.—Tenders were received to May 31 for the extension of and alterations to New Glasgow, N.S., station.

Salt Springs Station.—Tenders were received to May 24 for the erection of a frame station building and platforms at Salt Springs, N.S.

St. John Station and Yards.—A press report states that the St. John, N.B., City Council has been advised that an appropriation of $1,000,000 has been made for preliminary work on the new station and extension of yards at St. John, N.B. The station plans have not been submitted, but it is said that the layout will provide for eight new tracks at the present grade, and a viaduct on Mill St., to carry the electric railway and general traffic over the railway approach. The present station building will be used until the new building is sufficiently advanced to permit the old one to be taken down. The yards are to be considerably extended, and it is stated a large area of land has been expropriated for the purpose.

Fredericton Improvements.—A press report states that C.N.R.. officials discussed with Fredericton, N.B., city officials recently plans for the construction of a new bridge across the St. John River, a new location of the tracks through the city and other improvements. The new bridge will, it is said, be about 50 ft. south of the present structure, and the approach will be so arranged as to permit of the present station being used. A subway will be provided under the approach near the junction of Queens and Brunswick Streets with Waterloo and University Ave. It is expected that work on the bridge will be started this year, and that it will be ready for use by the end of 1921. The estimated cost of bridge and approaches is said to be approximately $2,000,000.

McGivney Jct. to Fredericton, N.B.—Tenders were received up to May 25 for grading near Taymouth, mile 89.94 to 92.80; and naer Durham, mile 95.32 to 96.51. Taymouth and Durham are stations about four miles apart on the old Canada Eastern Ry., running from Newcastle to Fredericton, N.B., and on the Fredericton side of McGivney Jct., where the National Transcontinental Ry. crosses. The section of line from McGivney Jct. to Fredericton is being improved in order to carry the increasing through traffic from the N. T. Ry. over the St. John & Quebec Ry. to St. John.

Railway Section Dwellings. — Tenders were received to May 26 for the erection of railway section dwellings at the following points on the National Transcontinental Ry. in Quebec:—La Tuque Subdivision—Gouin, Fitzpatrick. Fitzpatrick Subdivision—Cressman, Joybert, Weymount, Crespel, Ferguson, Casey. Parent Subdivision—Greening, Langdale, Monet, Bolger. Doucet Subdivision — Doucet, Fisher, Uniacke.

Branch Line to Oka, Que. — Senator Boyer enquired in the Senate May 5:—"Did any officials of the Railways Department or of the Canadian National Rys. attend, during 1919, a banquet at the Trappist monastery at Oka and promise that a branch line of the National Ry. would be built from the Freniere station to the monastery?" Sir James Lougheed answed: "No."

Ontario District Concrete Work.—We are officially advised that the following are the various concrete works in the Ontario District for which tenders were invited recently:—Pembroke Subdivision—Abutments and pedestals, mile 82.4. North Bay Subdivision—Two 10 x 15 ft. f. t. culverts; mile 100.9, abutments and pedestals. Sudbury Subdivision — Mile 7.6, 10 x 15 ft. f. t. culverts; mile 115.6, 6 x 7 ft. f. t. culverts; mile 120.5, two 5 x 15 ft. f. t. culverts. Ruel Subdivision—Mile 6.2, 5 x 12 ft. f. t. culvert; mile 94.7, 10 x 15 ft. f. t. culvert; mile 126.5, two 8 x 12 ft. f. t. culverts. Long Lake Subdivision—Mile 17.9, 4 x 12 ft. f. t. culvert; mile 111.7, abutments. Nipigon Subdivision—Mile 21.4, abutments; mile 21.9, 10 x 15 ft. f. t. culvert; mile 45.2, two 5 x 15 ft. f. t. culverts; mile 79.8, abutments.

Port Arthur Station.—Tenders have been invited for the construction of an express building at Port Arthur, Ont. A press report states that the new structure will probably be erected at the west end of the station and that it will be 80 or 100 ft. long.

Western Lines Buildings, Etc.—Tenders were received to May 25 for the construction of the following works:—

Port Arthur, Ont.—Express building; standard 75 ft. ash pit.

Rainy River, Ont.—Standard 75 ft. ash pit.

Winnipeg.—Office extension to store building, west yard.

Transcona, Man.—Alterations and additions to coach paint shop.

Dauphin, Man.—Turntable foundation.

Swan River, Man.—Standard 5-stall engine house.

Kamsack, Sask.—Two standard 75 ft. ash pits; turntable foundation.

Humboldt, Sask.—Standard 75 ft. ash pit; turntable foundation.

Prince Albert, Sask.—Extension to station building; 3-stall addition to engine house.

North Battleford, Sask.—Standard 75 ft. ash pit.

Hanna, Alta.—Standard 75 ft. ash pit.

Tenders were received recently for the erection of 225 track miles of wire fencing; for reinforced concrete culverts near Winnipeg, on the Regina, Saskatoon and Kindersley Subdivisions, Sask., and on the Hanna Subdivision, Alta.; and for the construction of a subway at Athabasca St., Moose Jaw, Sask.

Lampman Coal Fields.—A press report states that it is expected construction will be started at an early date on a line from Lampman coal fields just across the Saskatchewan-Manitoba boundary.

Bengough-Fife Lake Extension. — A press report states that it is expected to build about 12 miles of the projected extension of the Bengough line towards Fife Lake, Sask., this year, and that an engineering party was in the field all winter making surveys.

Western Lines Construction.—Tenders will be received to June 1 for grading and culverts on the following lines:—Prince Albert, Sask., northeasterly extension; Tuurtleford - Meeting Lake extension, Sask.; Maryfield, Sask., extension; Acadia Valley extension, Alta.

Pacific Coast Terminals.—A press report states that at a recent conference of representative of Vancouver and other points with the Minister of Railways regarding the Canadian National Rys. terminals at Vancouver, the Minister stated that it was intended to proceed with the plans for the railway terminals at a cost of several million dollars and that the plans had been under consideration for some time. It is said that in connection with the carrying out of the plans there will be a revision of the agreement entered into between the city and the Canadian Northern Ry. (May, pg. 226.)

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**Calgary C.P.R. Employes Local Club.** The following officers were elected at the annual meeting, May 11: President, A. P. Thompson; Vice President, I. Harrison; General Secretary, V. Cawley; Financial Secretary, H. B. Bridges; Athletic Secretary, J. McRoberts; Treasurer, G. H. Carter. An executive committee of the different departments was appointed.

# The C.P.R. Refused Permission to build to Birch Lake.

The C.P.R. Co. made application to the Dominion Parliament recently for an act to authorize a number of branch lines in Saskatchewan and Alberta, including one from a point on the Pheasant Hills branch at or near Cory, in Tp. 36, ranges 5 or 6, west of the third meridian, northwesterly to at or near Birch Lake in Tps. 51 and 52, ranges 15 and 16, west of the third Meridian, Saskatchewan.

When the bill came before the House of Commons railway committee, April 20, the Minister of Railways announced that the Canadian National Railways had completed plans for a line over the same territory as that proposed to be served by the line projected by the C.P.R. from Cory to Birch Lake, and that provision had been made in the estimates for construction to be started this summer. There was, according to reports of the discussion in the committee, no doubt as to the necessity for the construction of the line in question, and both the Minister of Railways and D. C. Coleman, Vice President Western Lines, C.P.R., agreed that there was not room for two lines through the territory. It therefore became a question which of the two should be authorized. Hon. George Langley, Minister of Municipal Affairs for Saskatchewan, made a strong appeal for granting the power asked for, and when the matter came before the committee April 27 the Minister of Railways stated that $100,000, which was in the estimates for this year, would be spent in grading on the line, and that track would be laid in 1921. D. B. Hanna, President Canadian National Rys., stated that the construction of this line was a pre war promise, and was on the C.N.R. programme long before the C.P.R. had contemplated going there. The C.N.R. management was strongly opposed to any other company serving the territory when all plans had been laid. The C.P.R. might be much better employed attending to other territories where a government owned road was not contemplated. The C.P.R. had waited in the Drumheller district until the C.N.R. had developed the area, and then wanted to reap the fruits of another company's labors. D. C. Coleman is reported to have said that the C.P.R. would have gone ahead with work on this line last year but for the serious labor troubles in Winnipeg. The company proposed to go ahead with all lines for which powers were asked, as fast as possible. After a lengthened discussion the committee, by a vote of 40 to 29, struck the section out of the bill.

On returning to Winnipeg from Ottawa, after the House of Commons railway committee had refused to pass a portion of the C.P.R.'s bill to authorize it to build certain branch lines, D. C. Coleman, Vice President Western Lines, is reported to have said: "The news dispatches sent out from Ottawa at the suggestion of interested parties gave an altogether wrong impression as to the issues involved. The C.P.R. asked for the right to build a railway from Saskatoon to Birch Lake, in northern Saskatchewan. There was no request for a subsidy or assistance of any kind. All that we desired was the charter to construct. This proposed line does not parallel any existing lines of the Canadian National Rys. It does not parallel any proposed lines of the Canadian National Rys. for which it holds charters. It crosses the two lines the Canadian National had constructed and the one line for which it holds a charter at almost right angles. However, it apparently did conflict with plans of future construction which Canadian National officers had been thinking about, but as they had made no announcement whatever previous to the application, the settlers who were asking for our line and the C.P.R. may be pardoned for assuming that these plans were hastily conceived, after it was announced that the C.P.R. proposed to go into the territory.

"It was argued that as the Canadian National had been operating the only lines north of the North Saskatchewan River in Saskatchewan all the country north of the river should be regarded as Canadian National territory, and that the competing railway should not be allowed to build in, even though it was established that the Canadian National had left large tracts of country altogether unserved and neglected. The C.P.R. will not voluntarily subscribe to any principle of division of territory. The Canadian National Rys. has every right to built into territory in southern Saskatchewan and southern Alberta, which has in the past been exclusively served by the C.P.R., and as a matter of fact has been and is now exercising that right. We do not ask, and will not ask, for authority to construct lines paralleling other railway lines, but we do claim that in ordinary fairness we should be allowed to build into the territory north of our existing lines, providing that it can be established that such lines are necessary to provide service to settlers and to promote further settlement and development.

"The C.P.R. is willing to provide the capital to construct such branch lines, is quite content that there should be every protection against wasteful parallel construction, and submits that it is not fair and not reasonable to deny it the right to build merely because the officers of a competing railway feel that at some future time, when the financial condition of the country justifies it, they may desire to build lines with which the C.P.R. construction plans might possibly conflict. The construction policy of both companies should be to promote production, to increase the population and to avoid waste and the C.P.R. is willing that its programme should at all times conform to such a policy."

## Timiskaming & Northern Ontario Railway Commission Estimates.

Further supplementary estimates for the year ending Oct. 31, 1920, submitted to the Ontario Legislature recently, contained the following items:—

| | |
|---|---|
| General surveys and investigations (re-vote) | $25,000.00 |
| Change of line for reduction of grade and curvature (re-vote) | 10,000.00 |
| Widening cuts and fills | 10,000.00 |
| Additional weight of rail and improved fastenings | 45,000.00 |
| Additional track material (re-vote $12,000) | 100,000.00 |
| Replacing timber bridges and culverts (re-vote $34,008.52) | 75,000.00 |
| Public and private road crossings (re-vote $2,800) | 3,000.00 |
| Additional yard tracks (re-vote $20,523.87) | 40,000.00 |
| New sidings and spur tracks (re-vote $34,500) | 60,000.00 |
| Roadway machinery and tools (re-vote $3,000) | 10,000.00 |
| Fencing right of way (re-vote) | 25,073.05 |
| North Bay maintenance of way, general repair and carpenter shops (re-vote $2,000) | 6,000.00 |
| Employes' dwellings (re-vote $13,435.02) | 20,000.00 |
| Cochrane—Baggage and express buildings, platforms, etc. (re-vote $10,440.05) | 15,500.00 |
| Heating, plumbing and electric lighting in existing dwellings and stations (re-vote $3,500) | 9,200.00 |
| North Bay extensions and alterations, stores, buildings | 35,000.00 |
| North Bay—Freight car repair shed (re-vote | 10,000.00 |
| New Liskeard—Freight shed | 20,000.00 |
| Swastika—Completion station | 4,000.00 |
| Dane—Extension station | 1,000.00 |
| Elk Lake, Timmins, Iroquois Falls—Ice houses | 5,000.00 |
| Station buildings to provide accommodation at settlements without such facilities | 4 500.00 |
| Water stations, additions and improvements (re-vote) | 20,000.00 |
| Improvements—Station grounds | 2,000.00 |
| Fire protection—Iroquois Falls | 4,000.00 |
| North Bay and Englehart coaling plants (re-vote $30,000) | 60,000.00 |
| North Bay—Shop tools | 45,000.00 |
| Live Stock pens—locations not specified | 2,500.00 |
| Snow fences | 3,500.00 |
| Additional telephone circuits between North Bay and New Liskeard | 20,000.00 |
| Renewing telegraph and telephone pole line equipment and stringing circuit, Matheson to Porquis Junction | 5,000.00 |
| Five metallic telephone circuits—Swastika to Kirkland Lake | 2,500.00 |
| Telephone line—Cobalt to Porquis Jct.... | 25,834.60 |
| Additional locomotives | 225,000.00 |
| Locomotives—Superheaters, coal boxes, etc. (re-vote $25,000) | 69,500.00 |
| Passenger train cars—betterments (re-vote $600) | 5,000.00 |
| Freight train cars, betterments | 10,000.00 |
| Work equipment—additional and betterments (re-vote) | 14,500.00 |
| Nipissing Central Ry.—Car barn enlargement (re-vote) | 2,000.00 |
| Nipissing Central Ry.—Haileybury harbor, increased facilities( re-vote) | 8,165.18 |
| | $1,057,772.83 |

## Canadian Railway Club's Officers, Etc.

The Canadian Railway Club, at its annual meeting in Montreal, May 13, elected the following officers:—

President—W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., Montreal. First Vice President—C. H. N. Connell, District Engineer, Canadian National Rys., Quebec, Que. Second Vice President, W. H. Sample, General Superintendent Motive Power and Car Departments, G.T.R., Montreal. Executive Committee—A. Crumpton, Valuation Engineer, G.T.R.; E. R. Battley, Superintendent Motive Power, Eastern Lines, G.T.R.; R. A. Pyne, Superintendent Motive Power, C.P.R.; H. R. Naylor, Assistant Works Manager, Angus Shops, C.P.R.; B. F. Shortley, Superintendent Terminals, Canadian National Rys.; C. P. Price, Electrical Superintendent Canadian National Rys., Montreal.

Secretary—W. A. Booth, Engineer Locomotive Construction, G.T.R., Montreal. Treasurer—E. E. Lloyd, Auditor of Disbursements, C.P.R., Montreal.

**Indian Aerial Tramways.**—Projects for the construction of aerial tramways of ropeways, for public traffic in India, are under consideration by the Government Railways Board. In the board's report for 1919 it is stated that this system of transportation is well established in India, for mining and other private industrial enterprises, but has not been used for public service. It is considered that experience in other countries has proved this system suitable for the opening up of mountainous districts, where the cost of railways and roads would be prohibitive, and there is a wide field for its employment for this purpose in India. As there is difficulty in securing engineers, with experience in this line of work, the board is arranging to have an officer trained specially in aerial tramway construction.

# Freight and Passenger Traffic Notes.

The Reid Newfoundland Co.'s regular tri-weekly train service between St. John's and Port Aux Basques, Nfld., is reported to have been resumed May 12.

Representatives of seven railway companies doing business on the British Columbia coast, and a representative of the British Columbia Electric Ry., forming a sub-committee of the Railway Association of Canada, met in Vancouver, B.C., May 14, with F. W. Peters, C.P.R., as chairman.

The Minister of Railways stated in the House of Commons recently that there was no truth whatever in the report that train service on the Hudson Bay Ry. from Pas, Man., was to be discontinued. About 214 miles of the line had been in operation up to that time and it was intended to operate trains on this mileage the same as last year.

The Edmonton, Dunvegan & British Columbia Ry. Co. is reported to have applied to the Board of Railway Commissioners for authority to increase its passenger and freight rates. It is asked that the railway be treated as a colonization railway; and that the rates be fixed sufficiently high to enable operation and fixed charges to be met. It is stated that the increase asked is to be temporary, and that rates will be lowered from time to time as traffic increases.

The C.P.R. will operate three through trains between Quebec and Montreal in each direction, beginning June 6, the new trains being known as the Frontenac Limited and the Viger Limited, and will run daily during the summer season, while the third train will be run on week days only. Trains will leave Palais station, Quebec, at 7.50 a.m., except Sunday, 2 p.m. daily, and 10.45 p.m. daily, and will leave Montreal at 7.50 a.m., except Sunday; 4.10 p.m., daily; and 10.45 p.m. daily.

The Canadian National Rys. put in operation on May 3 the summer schedule for the operation of traffic via the car ferry between New Brunswick and Prince Edward Island. The car ferry leaves Borden, P.E.I., at 9.30 a.m., and 5.05 p.m. daily except Sundays, reaching Tormentine, N.B., at 10.20 a.m. and 6 p.m. The ferry leaves Tormentine at 3 p.m., and 7.40 p.m., arriving at Borden at 3.50 p.m. and 8.30, thus making two round trips a day. Trains leaving St. John, N.B., at 7.10 a.m. and 1.15 a.m. connect at Sackville at 12.28 p.m. and 5.50 p.m. with trains for Tormentine, as also do the 9.25 a.m. and 7 p.m. trains from Montreal. The ferry train from Tormentine connects at Sackville with trains for Moncton, St. John and Montreal. Trains are also run on Prince Edward Island in connection with the ferry service.

The Quebec Court of King's Bench, sitting at Montreal, delivered judgment April 26, in an appeal of the G.T.R. against a decision of the Superior Court giving the Central Fruit Auction Co. $5,150.21 said to be due under certain traffic arrangements and a lease of certain G.T.R. premises in Montreal, and ordering the G.T.R. to execute a draft agreement, embodying the verbal understanding arrived at. The G.T.R. appealed against the decision on the ground that the employes who were alleged to have made the agreement had no authority to conclude any agreement, and were merely negotiating an agreement which had to be accepted and executed before it became binding; that the draft agreement had been rejected by the company's executive officers, and that therefore there was no contract or agreement. The Superior Court found that the G.T.R. having acted on the verbal understanding arrived at and set forth in the draft agreement constituted an adoption and notification. The King's Bench Court, after hearing arguments, held that there had not been a ratification or adoption of the verbal understanding by the G.T.R. that would bind it to a 10 years contract, and that the G.T.R. was justified in putting an end to the payment of any allowance for train track traffic. The G.T.R. gave notice, Aug. 30, 1916, that the payment would cease from and after Oct. 1 of this year, and tendered an amount up to that date. The G.T.R.'s appeal was maintained, the Superior Court's judgment was reversed, and the amount of the tender was declared to be sufficient.

## Railway and Steamship Terminal for Sydney, N.S.

Canadian Railway and Marine World for May contained on pg. 232 some information in regard to work to be done by the Dominion Public Works Department at Sydney, N.S. We have since been favored by the department with the following information:—The proposed work will be situated near the old railway pier, at Barrack Point. The wharf will be 540 x 74 ft., with a berth on each side 30 ft. deep at low tide, and 100 ft. wide by 350 ft. long. There will also be a berth on each side, at the inner end, 20 ft. deep at low tide and 100 ft. wide by 150 ft. long. The wharf shed will be 450 x 40 ft., with a 4 ft. platform on each side at the same level as the freight car floor. There will be a railway track on each side of the wharf, with 3 ft. clear way between a box car and the outside edge. The wharf will consist of 13 concrete cribs, filled in with earth, and the approach from the shore will be an earth embankment 74 ft. wide. Two railway tracks will extend out over the embankment to each side of the wharf, and a wagon road will lead from the wharf along the shore to George St. There will be a connection with the city water supply and a hydrant at the end of wharf.

## Electric Railways Transferred to Canadian National Railways.

Hon. J. A. Calder gave the following information in the House of Commons recently, in answer to questions:—

The actual paid up capital of the Toronto Eastern Ry., on Sept. 27, 1918, was $250,000.00. The provisional officers were: President, W. H. Moore; Vice President, A. J. Mitchell; other directors: R. G. O. Thompson, H. S. Gausby, and E. R. Gossett. As the railway was not in operation there was no general manager. As the Canadian Northern Ry. acquired all the company's assets, by assuming the cost of construction, there was no actual cash transaction between the companies.

The actual paid up capital of the Toronto Suburban Ry., on Sept. 27, 1918, was $1,500,000.00. The officers were:—President, Sir Wm. Mackenzie; other directors: L. W. Mitchell, F. H. Phippen, and G. C. Royce; General Manager, G. C. Royce. As the Canadian Northern Ry. acquired all the company's assets, by assuming its liabilities, there was no actual cash transaction between the companies.

## United States Railway Notes.

The American Railroad Association's Committee on car service reported May 13 that 235,000 freight cars were tied up or delayed in transit, of which 85,000 were at junction points, with no labor to transfer them.

The U.S. Senate Interstate Commerce Committee agreed, on May 12, on legislation designed to aid railways and shippers in the car shortage situation, by extending the $300,000,000 revolving fund from 5 to 15 years and also by amending the law in other respects.

W. D. Hines, ex Director General of Railways, U.S. Railroad Administration, has been designated by President Wilson, as U.S. representative in Europe, to enforce the terms of the peace treaty, relating to waterways of various signatory countries.

## Canadian National Railways Earnings.

| | 1920 | 1919 |
|---|---|---|
| January | $ 7,726,562 | $ 6,787,517 |
| February | 6,516,059 | 6,265,562 |
| March | 7,761,326 | 7,160,036 |
| April | 8,207,478 | 6,936,635 |
| | $29,752,425 | $27,149,750 |

Approximate earnings for 3 weeks ended May 21, $5,915,971, against $5,405,541 for same period 1919.

## Canadian Northern Railway System.

| | 1920 | 1919 |
|---|---|---|
| January | $4,200,700 | $4,026,000 |
| February | 3,862,300 | 3,363,800 |
| March | 4,587,700 | 3,554,350 |
| | $12.650,700 | $10,944,150 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan... | $13,914,569 | $13,328,628 | $585,941 | *$967,571 |
| Feb... | 13,557,104 | 12,843,231 | 713,873 | *267,242 |
| Mar... | 15,715,937 | 13,758,173 | 1,957,764 | 418,721 |
| | $43,187,610 | $39,930,032 | $3,257,578 | *$816,092 |
| Inc. | 6,720,933 | 7,537,025 | ..... | ..... |
| Decr. | ..... | ..... | $816,092 | ..... |

Approximate earnings for April, $15,586,000, and for two weeks ended May 14, $7,096,000, against $12,780,000 and $5,815,000 for same period 1919.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Deficit | Increase |
|---|---|---|---|---|
| Jan. | $ 5,054,034 | $ 5,867,445 | $ 813,411 | $ 97,406 |
| Feb. | 4,660,831 | 5,159,742 | 498,911 | 188,987 |
| Mar. | 5,756,372 | 5,491,293 | 265,079 | 575,215 |
| | $15,471,237 | $16,518,480 | $1,047,245 | $ 861,608 |
| Incr... | 1,467,387 | 2,328,995 | 861,608 | ..... |

Approximate earnings for April, $5,478,080, and for three weeks ended May 21, $4,625,569, against $5,357,537, and $4,413,626 for same periods 1919.

**Sir Donald Mann Had No Private Car.** P. F. Casgrain, M.P. for Charlevoix-Montmorency, Que., asked in the House of Commons recently:—"1. Did Sir Donald Mann have a private car? 2. If so, was it taken over by the government when it bought the Canadian Northern Ry.? 3. If not, why?" The Minister of Railways answered the first question, "No."

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TORONTO, CANADA, JUNE, 1920.

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## Canadian National Railways Receipts and Expenditures.

Sir James Lougheed gave the following information in the Senate May 7, in answer to questions by Senator McSweeney. The receipts of the Intercolonial Ry. for the year ended Mar. 31, 1920, were $28,104,733.66, and the operating expenses were $30,908,505.18.

The receipts of the National Transcontinental Ry. between Moncton and Winnipeg for the year ended Mar. 31, 1920, were $11,592,718.72, and the operating expenses were $14,584,250.06.

The receipts of the Canadian Northern Ry. System for the year ended Mar. 31, 1920, were $53,562,177.57, and the operating expenses were $60,034,023.92.

The receipts of the Grand Trunk Pacific Ry., now in the hands of a receiver, were, for the calendar year 1919, $12,251,462.13, and the operating expenses were $17,587,567.37. The figures from Jan. to Mar., 1920, had not been ascertained up to May 7.

## Grand Trunk Railway Acquisition Act Passed.

Assent was given in the Senate, May 11, to a number of acts passed by the Dominion Parliament, including the one for the confirmation of an agreement dated Mar. 8, 1920, for the acquisition by the Dominion Government of the G. T.R. capital stock, excepting the 4% guaranteed stock. The act consists of two sections, the first correcting in two details the agreement, and the second ratifying and confirming the agreement as so amended, and a schedule containing the agreement. The two sections were given in full in Canadian Railway and Marine World for May, pg. 251. The bill passed its final stage in the Senate May 7, there being only a formal discussion with reference to undisclosed claims and the position of employes who went on strike in 1910 with regard to the Pension fund.

## D. B. Hanna Sues F. S. Cahill for Slander.

A civil action in which D. B. Hanna, President Canadian National Rys., asks for $50,000 for slander, alleged to have been contained in the remarks of F. S. Cahill, M.P., before the Reform Club of Montreal, in April, has been commenced, and Mr. Cahill has been served with notice of the suit.

The statement of claim in connection with the action has arrived in the city. It sets forth that, by the remarks of Mr. Cahill, it was indicated that Mr. Hanna had acted in a fraudulent manner and in violation of his mandate and duty to the public and Dominion of Canada. It also sets forth that the remarks of Mr. Cahill were false, malicious and defamatory, and constituted a slander of the most damaging character, reflecting on Mr. Hanna's character and integrity and subjecting him to the loss of public confidence. Mr. Hanna's claim is for $50,000 and interest and costs of the action, and he asks that, in default of payment, Mr. Cahill be subjected to coercive imprisonment.

The statement of claim is a bulky document, and contains reports of Mr. Cahill's remarks in several daily papers, which assert that Mr. Cahill said that Mr. Hanna was putting the Canadian National Rys. into the hands of Sir William Mackenzie and Sir Donald Mann, that Sir William and Sir Donald were selling coal, ties and other supplies to the C.N.R. and that the government had been "stung" for $140,000,000 in connection with the Canadian National Rys. The statement of claim says: "The said charges imply a dereliction of duty on the part of the plaintiff as director and President of the C.N.R., and as operating and managing the Canadian National Rys."

Bisaillon & Beique, Montreal, are acting for Mr. Hanna.

## Mechanical Conventions at Atlantic City.

The annual meeting of American Railroad Association, Section 3 ,Mechanical, formerly American Railway Master Mechanics Association and Master Car Builders Association, will be held at Atlantic City, N.J., June 9 to 16, both inclusive. The reports of committees investigating locomotive matters will be received and discussed on June 9 to 11, both inclusive, and reports of committees investigating car matters will be received and discussed on June 14 to 16, both inclusive.

W. H. Winterrowd, Chief Mechanical Engineer C.P.R., Montreal, will read a paper on June 10, on snow fighting apparatus.

The general committee for the convention includes J. Coleman, Assistant to General Superintendent, Motive Power and Car Department, G.T.R., Montreal, who is Vice Chairman, and W. H. Winterrowd, Chief Mechanical Engineer, C. P.R., Montreal. Mr. Coleman, whose term of office expires June, 1920, has been re-nominated to serve until June, 1922. The election will take place on June 14.

The following officials of Canadian railways, and their subsidiaries are members of the committees named:—

I. N. Clark, Master Car Builder G.T.R., revision of passenger car rules of interchange.

J. Coleman, Assistant General Superintendent Motive Power and Car Department, G.T.R., arbitration, arrangements, car construction.

W. H. Flynn, Superintendent Motive Power Michigan Central Rd., fuel economy and smoke prevention.

A. R. Kipp, Mechanical Superintendent, Minneapolis, St. Paul & Sault Ste. Marie Ry., standards and recommended practice.

E. J. Robertson, Superintendent Car Department, Minneapolis, St. Paul & Sault Ste. Marie Ry., loading rules.

W. J. Robider, General Master Car Builder, C.P.R., car construction, repair shop layouts.

W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., car wheels.

**Canadian Northern Railway Indebtedness.**—The Minister of Immigration stated in the House of Commons recently, in answer to a question, that the total indebtedness of the Canadian Northern Ry. as of Dec. 31, 1919, including funded debt, equipment securities, land securities, advances made by the Dominion Government, and all other liabilities outstanding, was $566,097,468.10.

**Standard time on C.P.R.**—The C.P.R. has not made any change in its standard of time, either on the road or in its general or subordinate offices, in connection with daylight saving. Clocks in all the company's offices and buildings remain at standard time and trains are being operated by this time.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 292. Apr. 22.—Approving tariffs of Canadian National Rys., C.P.R., Dominion Atlantic Ry., Esquimalt & Nanaimo Ry., G.T.R., Grand Trunk Pacific Ry., Kettle Valley Ry., Maine Central Rd., Michigan Central Rd., Napierville Jct. Ry., New York Central Rd., and Toronto, Hamilton & Buffalo Ry., increasing tolls for sleeping and parlor cars. See May issue, pg. 247.

General order 292-A. Apr. 27.—Amending general order 292, Apr. 22, re sleeping and parlor car tolls, by adding Quebec Central Ry.

General order 292B. May 5.—Amending general order 292 re standard tariff of maximum sleeping and parlor car tolls by adding "Boston & Maine Rd. C.R.C. no. S-4."

General order 292-C. May 10.—Amending general order 292. Apr. 22, re standard tariff of maximum sleeping and parlor car tolls by adding "Edmonton, Dunvegan & British Columbia Ry. C.R.C. no. S-3."

General order 292-D. May 11.—Amending general order 292, Apr. 22, re increase in standard tariff of maximum sleeping and parlor car tolls by adding "Wabash Ry. C.R.C. no. S-5."

General order 293. Apr. 26.—Ordering that all locomotives of railway companies subject to board's jurisdiction be equipped with seat for the brakeman, of a comfortable design, and where practicable equipped with back and window arm rest; to be provided by May 1, 1921. See May issue, p. 244.

General order 294. Apr. 30.—Authorizing allowances for doors for grain cars.

General order 295. May 5.—Dismissing complain of Montreal Board of Trade, Candaian Manufacturers Association, Toronto Board of Trade et al, against regulations of railway companies effective Mar. 1, ordering their agents not to accept prepayment of charges from shippers on freight from Canada to U.S. points, except on traffic on which freight classification or tariff requires prepayment.

29,551. Apr. 13.—Approving Westmount, Que., bylaw prohibiting ringing of bells and blowing of whistles on any locomotive within city limits and imposing fine therefor.

29,552. Apr. 20.—Authorizing C.P.R. to build overhead highway crossing at mile 21.3, Shawinigan Falls, Que.

29,553. Apr. 20.—Authorizing Grand Trunk Pacific Ry. to build highway crossing over its track at Cedarvale, B.C.

29,554. Apr. 19.—Authorizing G.T.R. to operate trains over siding serving Weddell & Saunders, Ashbridges Bay District, Toronto.

29,555. Apr. 19.—Authorizing Canadian National Rys. to build spur for Imperial Oil, Ltd., at Fort Frances, Ont.

29,556. Apr. 20.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for Bituminous Collieries, Ltd., at mile 52, Alberta Coal Branch, in s.e. ¼ Sec. 19, Tp. 47, Range 19, west 5th meridian, Alta.

29,557. Apr. 20.—Approving agreement, Apr. 29, 1915, between Bell Telephone Co. and Manse Grove Telephone Association, Victoria County, Ont.

29,558. Apr. 10.—Authorizing Grand River Ry. to open for traffic, grade revision from Preston to Lot 9, Con. 2, Waterloo Tp., Ont., 2.01 miles.

29,559. Apr. 22.—Extending to June 15 time within which Humboldt rural municipality 370, Sask., may divert road and make highway crossing over Canadian National Rys. in Secs. 22 and 27, Tp. 37, Range 23, west 2nd meridian, authorized by order 29,320, Jan. 29.

29,560. Apr. 21.—Authorizing Elk Valley Lumber Co. to build railway track across the Crowsnest Southern Ry. at grade, at Fernie, B.C.

29,561. Apr. 22.—Approving location and details of building for Canadian Express Co. at G.T.R. station, Paris, Ont.

29,562. Apr. 21.—Authorizing G.T.R. to build siding and spur for Dunlop Tire & Rubber Goods Co., Toronto.

29,563. Apr. 23.—Rescinding order 29,368, Feb. 10, which required G.T.R. to maintain watchmen at crossings of Metcalfe and Caradoc Sts., Stratbroy, Ont., and continuing order 10,769, June 1, 1910, in effect, but amended to provide that G.T.R. be liable to a penalty of $25 for every failure to comply with its requirements.

29,564. Apr. 24.—Authorizing Montreal & Southern Counties Ry. to file tariffs making increase of 20% in its passenger fares, tariffs to be effective within seven days from date. See also order 29,571.

29,565. Apr. 23.—Permitting railway companies to issue free transportation in certain cases. This order was given in full in May issue, pg. 247.

29,566. Apr. 21.—Authorizing C.P.R. to divert Calgary-Banff Road near Kananaskis, Alta., and carry it at grade across spur tracks in Sec. 25.

29,567. Apr. 24.—Autborizing Canadian National Rys. to rebuild bridge over Bayonne River, St. Elizabeth Parish, Joliette County, Que., mile 133.29 from Quebec.

29,568. Apr. 24.—Ordering Grand Trunk Pacific Ry. to build farm crossing for A. G. Foote, Edmonton, Alta., on n.e. ¼ Sec. 13, Tp. 53, Range 24, west 4th meridian.

29,569. Apr. 23.—Recommending to Governor in council for sanction G.T.R. bylaw forbidding any person to ride or drive any animal or vehicle over or upon roadway on Victoria Jubilee Bridge, at a greater speed than 12 miles an hour, and imposing penalty not exceeding $40 on every person who violates such bylaw.

29,570. Apr. 24.—Extending to June 30 time within which Canadian National Rys. shall install half interlocking plant at crossings of Fort William Municipal Ry. at Victoria Ave., Vickers St., and Franklin St., Fort William, Ont.

29,571. Apr. 26.—Authorizing Montreal & Southern Counties Ry. to file tariffs providing increase of 20% in passenger fares; to become effective when standard tariffs are published with notice of approval in Canada Gazette, and rescinding order 29,564, Apr. 24. See May issue, pg. 253.

29,572. Apr. 23.—Extending to June 30, time within which C.P.R. shall complete additions and alterations to station building at Kamsack, Sask.

29,573. Apr. 23.—Authorizing Assistant Chief Commissioner to approve plan showing location of C.P.R. Swift Current Northwesterly Branch (Sedgewick northerly), mile 284.80 to 334.30; also authorizing C.P.R. to build at grade across 36 highways.

29,574. Apr. 24.—Approving agreement, Mar. 31, between Bell Telephone Co. and Notre Dame de Ham Telephone Co., Wolfe County, Que.

29,575. Apr. 26.—Dismissing application of Red Deer Valley Coal Operators Association for reduction in rates on coal from mines in Alberta to eastern Saskatchewan and Manitoba points.

29,576. Apr. 26.—Authorizing Canadian National Rys. to rebuild bridge over Beaver Creek, mile 90.96 from Picton, Ont.

29,577. Apr. 26.—Authorizing C.P.R. to rebuild bridge over Brokenhead River, mile 94.1, Keewatin Subdivision, Man.

29,578. Apr. 26.—Authorizing Canadian National Rys. to rebuild bridge over Pike Creek, at Weir, Que.

29,579. Apr. 26.—Authorizing C.P.R. to rebuild superstructure by bridge over McVicar's Creek, at mile 0.41, Fort William Terminals, Ont.

29,580. Apr. 28.—Approving Montreal & Southern Counties Ry. standard tariff of maximum passenger tolls, C.R.C. 24.

29,581. Apr. 27.—Approving Supplement 2 to Express Classification for Canada 4, containing certain increased and additional ratings; supplement having originally been submitted as Supplement H to Express Classification for Canada 3. This is given in full on another page, under "Among the Express Companies."

29,582. Apr. 27.—Apportioning cost of overhead bridges or viaducts at Hastings, Pender and Keefer Sts., Vancouver, B.C., over Vancouver, Victoria & Eastern Ry.

29,583. Apr. 27.—Approving agreement Mar. 29, between Bell Telephone Co. and Pioneer Telephone Co., Oxford County, Ont.

29,584. Apr. 27.—Refusing Canadian National Rys. application for order directing N. M. Paterson & Co., Fort William, Ont., to bear all costs of installation and maintenance of crossing of King and Queen Sts., with spur on Montreal St.

29,585. Apr. 16.—Approving Supplement 13 to Canadian Freight Classification 16.

29,586. Apr. 28.—Ordering Canadian National Rys. to appoint station agent at Libau, Man., for six months, from Oct. 1.

29,587. May 4.—Approving C.P.R. local standard passenger tariff C.R.C. 189, containing tolls for special train movements in connection with special events, effective May 17.

29,588. May 3.—Ordering Canadian National Rys. to build third class station at Fork River, Man.; to be completed by Oct. 1.

29,589. May 3.—Authorizing G.T.R. to operate over bridge across Richelieu River at Beloeil, Que.

29,590. Apr. 29.—Authorizing C.P.R. to make highway crossing over its track in Sec. 30, Tp. 11, Range 26, west 4th meridian, Alta.

29,591. Apr. 30.—Approving plan of automatic electric bell to be installed by Lake Erie & Northern Ry. at crossing of Victoria St., Simcoe, Ont.

29,592. May 1.—Approving location of Canadian National Rys. Saskatoon-Calgary Branch, mile 161.28 to 181.50 and 302.57 to 322.79.

29,593. May 1.—Authorizing Canadian National to build spur for Staples Lumber Co., near Norva, Man.

29,594. Apr. 30.—Authorizing G.T.R. to rebuild bridge carrying Brock St., Whitby, Ont., over its tracks.

29,595 to 29,597. Apr. 29.—Authorizing C.P.R. to rebuild bridges 26.6 over Yale Creek, Cascade Subdivision, B.C.; 40.1 over Madawaska River, Chalk River Subdivision, Ont., and 9.3, Carleton Place Section, Ont.

29,598. May 5.—Authorizing C.P.R. to build spur for Ross-Saskatoon Lumber Co., Waldo, B.C.

29,599. May 4.—Authorizing C.P.R. to build spurs for Nicola Pine Mills Co., Merritt, B.C.

29,600. May 4.—Authorizing C.P.R. to build extension for Wood Vallance & Adams, Calgary, Alta.

29,601. May 3.—Approving route map of Quebec Central Ry. extension from Scotts to connection with Canadian National Rys. 2½ miles west of St. Isidore, Que.

29,602. May 3.—Authorizing C.P.R. to build its Rosetown Southeasterly Branch at mile 28.9, across Canadian National Rys. MacRorie Westerly Branch overhead in S.E. ¼ Sec. 16, Tp. 26, Range 16, west 3rd meridian.

29,603. May 3.—Authorizing Canadian National Rys. to cross and divert highway in the n.w. Sec. 5, Tp. 21, Range 1, Chatfield, Man.

29,604 to 29,606. Apr. 30.—Approving Bell Telephone Co. agreements, Apr. 19, with Bobcaygeon Rural Telephone Co., Victoria and Peterborough Counties; Apr. 10, with Ingleside Telephone Co., Oxford County, and Apr. 10, with Spring Creek Telephone Co., Oxford County, Ont.

29,607. May 4.—Approving revised location of C.P.R. Rosetown Southeasterly Branch, from mile 44.76 to 45.50, and mile 45.50 to 67.10; also authorizing cross ing of 18 highways.

29,608. May 6.—Ordering that, pending building of new high level bridge at Hunter St., Peterborough, Ont., C.P.R. spurs for Quaker Oats Co. at Simcoe St. be protected by watchmen.

29,609. May 6.—Authorizing Saskatchewan Government to make highway crossing at west end of C.P.R. station grounds at Elstow.

29,610. May 6.—Extending to July 31, 1921, time within which Canada National Rys. may erect gates at crossings of C.N.R. and C.P.R. at Bay Bridge Road, Belleville, Ont.

29,611. May 6.—Authorizing Grand Trunk Pacific Ry. to discontinue station agent at Reford, Sask., caretaker to be appointed to see that station is kept clean, heated and lighted.

29,612. May 6.—Authorizing G.T.R. to build spur for Crane Limited, Toronto.

29,613. May 6.—Approving location and details of G.T.R. station at Holmesville, Ont.

29,614. May 6.—Ordering Canadian National Rys. to appoint station agent at Deepdale, Man., by Sept. 1.

29,415. May 5.—Amending order 22,524, Sept. 9, 1914, re crossing of G.T.R. by Erie & Ontario Ry. in Moulton Tp., Ont.

29,416. May 5.—Amending order 22,466, Aug. 27, 1914, re Erie & Ontario Ry. grade crossing of G.T.R. in Dunville, Ont.

29,617. May 6.—Ordering Grand Trunk Pacific Ry. to build siding and warehouse facilities at Telkwa station, B.C., by June 30.

29,618. May 6.—Dismissing application of E. Guss Porter, M.P., that railway companies operating at Belleville, Ont., be required to publish rates on coal from Belleville harbor, ex vessel from Oswego, N.Y., to mid-Ontario destinations, lower than rates of special local mileage tariffs lawfully in force to same destinations.

29,619. May 10.—Approving spur for L. A. Johnson at mile 1123.15, Lot 7221, Cariboo District, B.C.

29,620. May 12.—Approving Woodstock, Thames Valley and Ingersoll Electric Ro. standard passenger tariff C.R.C. 1, effective May 24.

29,621, 29,622. May 10.—Authorizing C.P.R. to build spur for Wood, Vallance, Ltd., Regina, Sask., and extension to spur for Douglas Fuel Co., Winnipeg.

29,623. May 10.—Approving location and details of new station at Digby, N.S.

29,624, 29,625. May 6.—Approving Bell Telephone agreements, Apr. 17, with Jackson Telephone Co., Grey County, Ont., and Mar. 20, with Molesworth Independent Telephone Co., in Perth and Huron Counties, Ont.

29,626. May 11.—Relieving Canadian National Rys. from providing further protection at highway crossing at Dablon, Que.

29,627. May 11.—Dismissing complaint of H. M. Shaw, M.P., on behalf of town of Nanton, Alta., re C.P.R. train service between Calgary and Macleod, Alta.

29,628. May 11.—Authorizing Canadian Northern Ontario Ry. to open for traffic its line from mile 89.22 to 90.47, North Orillia Tp., Ont.

29,629, 29,230. May 10.—Approving Bell Telephone agreements, Apr. 26, with Central Dufferin Telephone Association, Dufferin County, Ont., and Apr. 24, with Penhurst Telephone Co., Oxford County, Ont.

29,631. May 11.—Relieving Pere Marquette Rd. from providing further protection at first public road crossing west of Blenheim station, Ont.

29,632. May 12.—Approving location and details of C.P.R. station at Cardston, Alta.

29,633. May 10.—Authorizing Canadian National Rys. to rebuild bridge over William St., Parry Sound, Ont.

29,634. May 12.—Ordering Grand Trunk Pacific Ry. to appoint station agent at Duff, Sask.

29,635. May 11.—Approving new location of tracks at G.T.R. locomotive house, London, Ont.

29,636. May 12.—Ordering Grand Trunk Pacific Ry. to appoint station agent at Kingman, Alta.

29,637. May 14.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur at mile 71.21 from Welland, Ont., for Scanlon & Moyer, Ltd.

29,638. May 12.—Authorizing C.P.R. to re[illegible] station agent at Hitchcock, Sask.

# Traffic Orders by Board of Railway Commissioners.

**Boston & Maine Rd. Sleeping and Parlor Car Fares.**

General order 292 B. May 5.—Re application of Boston & Maine Rd. for approval of increases in its Standard Tariff of Maximum Sleeping and Parlor Car Tolls; and of general order 292, April 22, 1920, approving increased Standard Tariffs of Maximum Sleeping and Parlor Car Tolls of various railways. The applicant company's showing increases in its maximum sleeping and parlor car tolls, on the same basis as those approved under the general order 292 having been filed for the board's approval, it is ordered that general order 292, as amended by general order 292-A, April 27, 1920, be further amended by adding thereto, at the end of the order, the words, "Boston & Maine Rd., C.R.C. S-4."

G. 292C, May 10.—Further amending order G. 292 April 22, by adding, at the end thereof the words "Edmonton, Dunvegan & British Columbia Ry. C.R.C. no. S. 3."

G. 292 D, May 11.—Further amending order G. 292, April 22, by adding, at the end thereof, the words:—"Wabash Ry. C.R.C. no. S. 3."

**Temporary Doors for Cars Loaded with Grain.**

General order 294. April 30.—Re complaints of D. Campbell, Winnipeg; United Grain Growers, Ltd., Calgary; J. B. Stringer & Co., Chatham; and Elliott & Co., Ridgetown, against allowances provided by general order 50, Dec. 10, 1909, as amended by general order 184, Mar. 22, 1917, to shippers who are compelled to furnish temporary doors to cars loaded with grain: Upon hearing the complaints at Winnipeg, Nov. 15, 1919, and Ottawa, Dec. 18, 1919, in the presence of D. Campbell, counsel for, and representatives of the Canadian Pacific, Grand Trunk, Grand Trunk Pacific and Canadian National Railways, Michigan Central Rd., and Montreal Board of Trade, and what was alleged; and upon reading the submissions filed, and the report and recommendation of the board's Chief Traffic Officer, it is ordered as follows:

1. That general order 50, as amended by general order 184, requiring that where shippers upon all or any railways subject to the jurisdiction of the Parliament of Canada are compelled to furnish car doors to enable cars to be used for traffic, allowance therefor to such shippers be made upon the following basis:

| | |
|---|---|
| (a) At and west of Port Arthur, lower doors, each | $1.50 |
| lower doors, each | .75 |
| (b) East of Port Arthur, lower doors, each | .50 |
| upper doors, each | .50 |

be amended to provide that the said allowances for doors so furnished to enable cars to be used for grain, be increased as follows, viz.:

| | |
|---|---|
| (a) At and west of Port Arthur— | |
| For doorways 5 ft. wide: lower doors | $2.25 each |
| upper doors | .75 each |
| For doorways 6 ft. wide: lower doors | 2.60 each |
| upper doors | .90 each |
| (b) East of Port Arthur— | |
| For doorways 5 ft. wide: lower doors | $1.25 each |
| upper doors | .75 each |
| For doorways 6 ft wide: lower doors | 1.35 each |
| upper doors | .90 each |

**Prepayment of Freight to United States Refused.**

General order 295. May 5.—Re complaints of Montreal Board of Trade, Canadian Manufacturers' Association, Toronto Board of Trade et al, against regulation of railway companies, effective Mar. 1st, 1920, directing their agents not to accept prepayment of charges from shippers on freight traffic from Canada to the United States, except on traffic on which the freight classification or tariff requires prepayment. Upon hearing the complaints at Toronto, Mar. 6, and Ottawa, Mar. 16 and 17, the complainants, the Montreal Corn Exchange, certain manufacturers in the Province of Quebec, the Riordon Pulp & Paper Co., the Canadian Lumbermen's Association, the apple and potato shippers of Nova Scotia, the Border Chamber of Commerce, the Ford Motor Co., certain pulpwood industries, the J. B. Belanger Mining Co., the Canadian Carbide Co., F. E. Smith, Limited, Canadian Traffic Agency, Wm. Davies Co., Harris Abattoir Co., the Canadian Pacific, Grand Trunk, and Canadian National Railways, and the Michigan Central Railroad being represented at the hearing and upon reading the submissions filed, it is ordered that, for want of jurisdiction over the subject matter thereof, the complaints be dismissed.

**Inclusion of Automobile Springs with Mixed Hardware.**

April 10. In the case of J. H. Ashdown Hardware Co. vs. Canadian Freight Association, the board's Chief Traffic Officer, J. Hardwell, made the following report April 9:—Complainants desire to include automobile springs with general hardware, in mixed carloads, at the carload 5th-class rate, under the general mixing rule of the classification. The Canadian Freight Association take the ground that this is not authorized by the classification. Item 88, page 98, in the hardware trade list, includes "vehicle parts (except vehicles and vehicle bodies), as per pages 131 and 132," as changed or added to from time to time being, of course, understood. At pages 131 and 132 of the unamended classification no. 16, the list is headed simply "vehicle parts." In supplement 5, page 14, this heading was changed to read "vehicle parts: not self-propelling vehicle parts," and at pages 7 and 8 a section was added with the heading "vehicle parts: self-propelling." These changes would have limited the hardware list to "vehicle parts: other than self-propelling," had that item also been changed, but it was not changed, and the result, in my judgment, is that the hardware list literally includes all vehicle parts (except vehicles and vehicle bodies), whether qualified as self-propelling or otherwise. The board is asked to interpret the classification literally and not as to intention. In my opinion, the ruling should be in favor of the applicants.

Assistant Chief Commissioner McLean gave the following ruling April 10:—As tariffs and classifications are to be construed strictly against the railway or railways concerned, the language and not the intention of the framers or the practice of the railways being the controlling factor (Pacific Coast Biscuit Company v. S. P. & S. R. Co., et al, 20 I.C.C. 546), I am of opinion that Mr. Hardwell's report should issue as the board's judgment. The Chief Commissioner concurred.

**Coal rates from Alberta to Saskatchewan and Manitoba.**

29,575. April 26.—Re application of Red Deer Valley Coal Operator's Association for a reduction in existing rates on coal from mines in Alberta to destinations in Eastern Saskatchewan and in Manitoba. Upon hearing the application at Winnipeg, Mar. 3 and 4, 1919, the applicant, the Canadian National and the Canadian Pacific Railways being represented, and upon reading the submissions filed, it is ordered that the application be dismissed.

**Supplement to Express Classification.**

29,581. April 27.—This order is given in full under "Among the Express Companies," on another page of this issue.

**Supplement 13 to Canadian Freight Classification 16.**

29,585. April 16.—Re application of Canadian Freight Association, on behalf of railway companies under sec. 322 of the Railway Act, 1919, for approval of a proposed Supplement 13 to Canadian Freight Classification 16, containing certain increased, reduced, and additional ratings. Notice having been given by the railway companies in The Canada Gazette, as required by sec. 322 of the Railway Act, 1919, and to the mercantile organizations enumerated in general order 271, Sept. 10, 1919, and the proposed supplement having been reviewed at a conference of representatives of the Grand Trunk, Canadian Pacific, and Canadian National Railways, the Canadian Manufacturers' Association, and the Montreal and Toronto Boards of Trade, the Board of Railway Commissioners being also represented, held at Montreal, Feb. 19, 1920, when various objections filed with the board were considered, and the proposed changes and additions agreed to, modified, or eliminated; and upon the consideration of what has been filed, and upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the proposed supplement, as finally revised and submitted for approval by the Chairman of the Canadian Freight Association, by letter dated April 10, 1920, be approved; subject to the omission therefrom of the proposed ratings under the general heading of polishing compounds.

And it is also ordered that general order 190, May 25, 1917, be rescinded. And it is further ordered that order 11,866, Oct. 4, 1910, be amended in so far as rule 6 is concerned, by the addition of the following:—

"A box or stock car, as referred to herein, is one whose dimensions do not exceed 36½ ft. in length by 8½ ft. in width by 8 ft. in height (inside measurement), the centre side doorway of which does not exceed 6 ft. in width, by 7½ ft. in height."

**C.P.R. Tariff for Special Train Movements.**

29,587. May 4.—Re application of Canadian Pacific Ry., under sec. 334 of the Railway Act, 1919, for approval of its Local Standard Passenger Tariff, C.R.C. 189, containing tolls for special train movements in connection with special events, effective May 17, 1920: Upon the recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff be approved; the said tariff, with reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

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The Reid Newfoundland Co. is reported to have insured its employes under the group insurance plan. The policies cover disability or death, and remain in force during the time the holder is in the company's employ.

## The Chief Railway Commissioner Speaks at London.

Hon. F. B. Carvell, Chief Railway Commissioner, who was in London, Ont., on May 3, in connection with grade separation, was a guest at a luncheon of the Canadian and Rotary Clubs. Following are extracts from his remarks, as reported in local papers:—He did not hope for much improvement in the grade separation question in the very near future, in spite of the fact that the work must be carried out and that there was no place in Canada where the condition of affairs was as bad as in London, unless it was in some of the prairie towns of the west. He pointed out that the more one examines the great transportation system of the Dominion, the more one realizes the great difficulties of ordering expensive work to be done. This is due to the great and complete economic revolution of the last five years. Prior to the war there was no difficulty in ordering the roads to make large expenditures, but this period had passed. He and the Mayor had gone carefully over the matter and there was no doubt that the work must be carried out. He watched the traffic at one of the G.T.R. crossings near the down town district and said that he wondered that people were not hit oftener than was the case. It has always been his practice to visit the scene of needed changes, and he said that there was scarcely an occasion on which he did not learn something new about the business. He thought it would be a great deal better if more public men would do likewise.

He said that the G.T.R. is passing through a period that to a great many people is little less than a tragedy, but if the company is unable to pay the interest on its bonds it has no one to blame but itself.

There are great possibilities for the system of publicly owned roads in Canada. The Canadian Northern is the best situated road in the west, with the G.T.R. the best in Ontario and Quebec. The two put together should become a splendid system. "This road will never succeed under heaven, however," he continued, "if the politicians do not keep their hands out. Unless they let D. B. Hanna alone and let him run them there will be the greatest tragedy in the history of Canada. With an admitted indebtedness of $47,000,000 it must be run on a cold business basis. I have lived along side the Intercolonial Ry., which has been a political football, and I have seen the results. If the railway is run as a railway there is no reason why the system should not be a huge success. I believe that there is a great future for railroading in Canada. The only qualification is that there must be sufficient revenue to pay the way."

Declaring that he had no special reference to the local street railway situation, as he did not know the particulars of the trouble, he said that the people must realize that they cannot get something for nothing and that it is not possible to get the kind of transportation wanted for the same prices as formerly. He pointed out that the prices of shoes and clothes and practically every necessity of life have doubled in five years, and there is not nearly as much an objection raised as when a man is asked to pay a little more for transportation.

He continued:—"If this applies to the City of London, take it. I don't know anything about the matter, but I suppose it is in connection with wages. You must face the situation and realize that you are coming to the time when you must pay a little more for transportation than in the past."

He pointed out that there had been an increase of 15% in passenger transportation and 25% in freight rates, and that during the past five years the cost of labor, which he said was about 70% of the cost of operation, had increased more than 100%.

"I don't know how they have done it. I suppose it can be attributed to the fact that Canada is prosperous and that the railways have been carrying enough more passengers and freight to make a profit. The C.P.R. has continued to pay 10%, but it is getting near the point where it must call on outside investments to continue this dividend."

**Hamilton East End Incline Ry.**—The question of the operation of the incline railway in the east end of Hamilton, Ont., is being negotiated between the company, of which E. Webb is President, and the city council. The railway is reported to have started operations on May 7, after a stoppage on account of wages troubles. The Hamilton City Council is taking legal advice as to whether the railway is a public utility and under the jurisdiction of the Ontario Railway and Municipal Board.

## Quebec Central Railway Report.

The Quebec Central Ry., which is a C. P. R. subsidiary, had the following operating results for the calendar year 1919:—

| | |
|---|---|
| Freight revenue | $ 953,943.66 |
| Passenger revenue | 364,846.49 |
| Mails | 14,072.24 |
| Express, miscellaneous, etc. | 41,968.49 |
| | $1,374,830.88 |
| Maintenance of way and structures | $ 226,652.46 |
| Maintenance of equipment | 204,489.48 |
| Traffic expenses | 16,316.65 |
| Transportation expenses | 508,612.53 |
| General expenses | 48,817.88 |
| Taxes | 10,000.00 |
| Expenses outside operations | 13,409.79 |
| Total operating expenses | 1,028,298.79 |
| Balance carried to Net Revenue Account | 346,532.09 |
| | $1,374,830.88 |

The officers are: Grant Hall, President, Montreal; I. G. Ogden, Vice President, Montreal, J. H. Walsh, General Manager, Sherbrooke, Que.; H. C. Oswald, Secretary, Montreal; R. D. Morrison, Asst. Sec'y, London, Eng.; Wilfrid S. Fry, Treasurer, Sherbrooke; G. D. Wadsworth, Gen. Freight and Pass. Agt., Sherbrooke; T. J. Maguire, Accountant, Sherbrooke; John T. Reid, Superintendent, Sherbrooke.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and Public Elevators in the East.

Prepared by the Dominion Bureau of Statistics, Internal Trade Branch.

| Week ending May 7th, 1920. | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William | | | | | | |
| C.P.R. | 94,249 | 33,921 | 83,046 | ..... | 27,948 | 239,164 |
| Empire Elevator Co. | 218,488 | 95,660 | 183,810 | 11,729 | 19,226 | 528,913 |
| Consolidated Elevator Co. | 279,151 | 73,206 | 135,889 | 40,287 | 12,232 | 540,765 |
| Ogilvie Flour Mills Co. | 684,491 | 130,710 | 67,254 | ..... | 10,237 | 892,602 |
| Western Terminal Elevator Co. | 285,458 | 68,922 | 19,156 | 22,801 | 5,672 | 402,009 |
| G. T. Pacific | 363,106 | 108,092 | 49,626 | 21,814 | 26,864 | 569,502 |
| Grain Growers' Grain Co. | 699,628 | 229,266 | 49,116 | ..... | 35,204 | 1,013,214 |
| Fort William Elevator Co. | 222,112 | 471,938 | 76,096 | 6,940 | 21,047 | 798,133 |
| Northwestern Elevator Co. | 383,675 | 58,716 | 67,460 | 43 | 69 | 509,963 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 3,022,841 | 781,382 | 386,913 | 1,818 | 14,326 | 4,207,310 |
| Sask. Co-op. Elevator Co. | 846,819 | 374,273 | 106,032 | 47,734 | 32,969 | 1,407,827 |
| Canadian Government Elevator | 182,809 | 82,384 | 55,085 | 67,759 | 995 | 1,060,439 |
| Thunder Bay | 292,253 | 685,247 | 66,021 | 15,923 | 995 | 1,060,439 |
| Davidson and Smith | 118,148 | 61,915 | 17,241 | ..... | 6,024 | 203,328 |
| Eastern-Richardson | 430,984 | 180,286 | 90,033 | 5,321 | 3,394 | 710,018 |
| Total Public Terminal Elevators | 8,124,212 | 3,435,918 | 1,452,778 | 242,199 | 235,418 | 13,490,525 |
| Total Private Terminal Elevators | 534,509 | 293,136 | 153,179 | 145 | 459 | 981,428 |
| Saskatton Can. Gov't. Elevator | 1,399,782 | 212,483 | 5,977 | 9,209 | 1,579 | 1,629,030 |
| Moose Jaw Can. Gov't. Elevator | 2,041,407 | 204,557 | 3,819 | 2,861 | ..... | 2,252,644 |
| Calgary Can. Gov't. Elevator | 1,214,445 | 468,092 | 33,119 | 184 | 13,340 | 1,729,180 |
| Vancouver, B.C. | 19,989 | 12,883 | 8,569 | ..... | ..... | 41,441 |
| *Total Interior Terminal Elevators | 4,675,623 | 898,015 | 51,484 | 12,254 | 14,919 | 5,652,295 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 214,006 | 173,601 | 53,174 | ..... | ..... | 440,781 |
| Midland Elevator Co. | 127,243 | 18,456 | 56,496 | ..... | 6,481 | 208,676 |
| Tiffin, G.T.P. | 351,427 | ..... | ..... | ..... | ..... | 351,427 |
| Port McNicoll | 741,393 | 37,783 | ..... | ..... | ..... | 779,176 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 399,501 | 249,845 | ..... | ..... | 28,576 | 677,922 |
| West Can. Flour Mills Co., Ltd. | 247,572 | ..... | ..... | ..... | ..... | 247,572 |
| Toronto Campbell Flour Mills Co. | 155,617 | ..... | 5,547 | ..... | ..... | 161,164 |
| Kingston— | | | | | | |
| Commercial Elevator Co. | ..... | 12,655 | ..... | ..... | ..... | 12,655 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 304,327 | 628,236 | 195,971 | 7,907 | 3,439 | 1,139,970 |
| Montreal Warehousing Co. | 417,936 | 36,350 | 145,340 | ..... | ..... | 599,626 |
| Ogilvie Flour Mills Co. | 243,227 | 3,086 | 45 | ..... | ..... | 246,358 |
| Quebec Harbor Commissioners | ..... | 39,719 | ..... | ..... | ..... | 39,719 |
| West St. John, N.B., C.P.R. | 166,422 | ..... | 97,355 | ..... | ..... | 263,777 |
| St. John, N.B., Can. Nat. Rys. | 151,607 | ..... | 34,940 | ..... | ..... | 186,547 |
| Halifax, N.S., Can. Nat. Rys. | | | | | | |
| Baltimore, U.S.A. | | | | | | |
| Total Public Elevators | 3,520,278 | 1,199,821 | 588,868 | 7,907 | 38,496 | 5,355,370 |
| Total Country Elevators | 8,890,062 | 5,519,627 | 1,272,750 | 261,535 | ..... | 15,943,974 |
| U.S. Atlantic Seaboard ports— | | | | | | |
| Portland, Me. | 84,736 | 76,745 | 19,788 | ..... | 3,251 | 184,520 |
| Baltimore, Md. | ..... | ..... | ..... | ..... | 19,742 | 19,742 |
| Total U.S. Atlantic Seaboard Ports | 84,736 | 76,745 | 19,788 | ..... | 22,993 | 204,262 |
| Total Quantity in Store | 25,829,420 | 11,423,262 | 3,538,847 | 524,040 | 312,285 | 41,627,854 |

*Quantity for each individual interior terminal elevator not received.

# Track Section Prize Competition on Canadian Pacific Railway, Eastern Lines.

For the past seven years an annual track section prize competition has been carried out on the C.P.R. Eastern Lines, which has aroused a healthy spirit of rivalry and keen competition among the section forces of the different divisions and districts. Sixty-three prizes are awarded in the competition, as follows:—A General Manager's prize to the foreman having done the best season's work on Eastern Lines. Four general superintendent's prizes, to the foreman on each district who has done the best season's work, exclusive of the winner of the General Manager's prize. Fourteen division superintendent's prizes, to the foreman on each division who has done the best season's work, exclusive of winners of higher prizes. Forty-four roadmaster's prizes, to the foreman on each roadmaster's territory who has done the best season's work, exclusive of winners of higher prizes.

Under this system no man can win more than one prize, and all foremen have an equal chance, as the quality of the work done throughout the season is the deciding factor, and not the actual physical condition of the section at the end of the season. The basis on which the sections are judged is entirely efficiency, and careful consideration is given throughout the season to the condition of, and work done on, ditches, gauge, spiking, line, surface, bolts, rail wear, so far as it can be controlled by the section forces, switches, sidings, right of way and station grounds, track signs, cattle guards and fences. The amount of work done and the hours of labor put in, both by regular force and extra gang, are also carefully considered, and the foreman accomplishing the best work with the least amount of labor—the physical condition of the section, as to grade, alignment, drainage, and character of roadbed being taken into consideration—wins the first prize.

The number of hours of regular labor and the number of hours of extra labor on the section are figured against the number of ties renewed, tie plates installed or changed, rails changed over on curves and ditching done, etc. The amount of track handled, right of way, spikes and bolts is fairly uniform on all sections, so that the condition with respect to these items at the end of the season is usually a criterion of the amount and quality of the work done thereon throughout the season. Where special conditions affect such work they are taken into consideration. Some idea of the care exercised in judging a foreman's work can be formed by following the work in connection with the selection of a prize section. Towards the end of the season, on each of the 44 roadmasters' territories, a section is picked out as the most deserving in point of work done during the season with the material and labor available. These are carefully inspected by the superintendent and resident engineer, who select the best one on each district for inspection by the general superintendent and division engineer. All divisions of a district are covered by these two officers, and the section selected which they consider eligible for the General Manager's prize. The judging for the General Manager's prize is done personally by the General Manager, the Engineer of Maintenance of Way, the Assistant Engineer of Maintenance of Way, and district officials.

Following is a list of the successful section foremen for 1919:—General Manager's prize, $100—Albert Elliot, Cavan, Sec. 7, Peterborough Subdivision, Trenton Division, Ontario District.
boro Subdivision, Ontario District.

New Brunswick District, General Superintendent's prize, $50—A. Badeau, Sec. 6, Moosehead S'd.

Brownville Division, Superintendent's prize, $25—J. Conley, Sec. 8, Moosehead S'd. Roadmasters' prizes, $10—O. Maillette, Sec. 2, Mooshead S'd.; R. A. Finlay, Sec. 3, St. John S'd.; A. Grant, Sec. 1, Shore Line S'd.

Woodstock Division, Superintendent's prize, $25—A. E. Lewin, Sec. 6, St. Stephen S'd. Roadmasters' prizes, $10—R. Allen, Sec. 2, Shogomoc S'd.; M. B. Clarke, Sec. 5, Gibson S'd.; A. Peluso, Sec. 4, Aroostook S'd.

Quebec District, General Superintendent's prize, $50—Sec. Foreman J. Daoust, Sec. 3, Waltham S'd.

Farnham Division, Superintendent's prize, $25—J. Gandreau, Sec. 3, Newport S'd. Roadmasters' prizes, $10—A. Laurendeau, Sec. 16, Sherbrooke S'd.; J. Clouatre, Sec. 12, Adirondack S'd.; J. McManus, Sec. 4, Drummondville S'd.; J. Partridge, Sec. 7, Newport S'd.

Montreal Terminals Division, Superintendent's prize, $25—A. Belec, Montreal West. Roadmaster's prize, $10—P. Lavoie, Mile End.

Laurentian Division, Superintendent's prize, $25—A. Fisette, Sec. 3, Three Rivers W. S'd. Roadmasters' prizes, $10—M. Langlois, Sec. 21, Three Rivers E. S'd.; P. Lafontaine, Sec. 11, Three Rivers W. S'd.; D. Robertson, Sec. 18, Lachute, S'd.; A. Morin, Sec. 6, Ste. Agathe S'd.

Ottawa Division, Superintendent's prize, $25—J. McGregor, Sec. 7, Maniwaki S'd. Roadmasters' prizes, $10—M. Tanguay, Sec. 12, M. & O. S'd.; A. Martineau, Sec. 3, Maniwaki S'd.; R. Whalen, Sec. 10, Waltham S'd.

Smiths Falls Division, Superintendent's prize, $25—P. Lapier, Sec. 11, Winchester S'd. Roadmasters' prizes, $10—T. Giles, Sec. 7, Brockville S'd.; C. Montroy, Sec. 18, Winchester S'd.; A. Austin, Sec. 18, Chalk River S'd.

Ontario District, General Superintendent's prize, $50—C. Stewart, Sec. 12, H. & G. S'd.

Trenton Division, Superintendent's prize, $25—C. Dowdall, Sec. 14, Havelock S'd. Roadmasters' prizes, $10—B. Locking, Sec. 13, Port McNicoll S'd.; J. Leggett, Sec. 13, Peterboro S'd.; M. Long, Sec. 12, Belleville S'd.; G. Fagg, Sec. 3, Oshawa S'd.; W. Davis, Sec. 8, Havelock S'd.; H. Roberts, Sec. 5, Bobcaygeon S'd.; G. Sproule, Sec. 4, Kingston S'd.

London Division, Superintendent's prize, $25—A. Fairbanks, Sec. 4, Windsor S'd. Roadmasters' prizes, $10—A. Hawkins, Sec. 4, Galt S'd.; R. Babcock, Sec. 11, Windsor S'd.; H. Doll, Sec. 8, H. & G. S'd.; J. Cox, Sec. 15, St. Marys, St. Thomas & P. B. S'd.

Bruce Division, Superintendent's prize, $25—T. J. Smith, Sec. 9, MacTier S'd. Roadmasters' prizes, $10—H. Hawke, Sec. 15, MacTier S'd.; J. Hiscox, Sec. 2, Orangeville, Elora, Teeswater & Wing S'd.; W. Carr, Sec. 3, Owen Sound & Walkerton S'd.

Toronto Terminals Division, Superintendent's prize, $25—L. Francis, Sec. 1, Don. Roadmaster's prize, $10—F. Tuckley, Sec. 8, Islington.

Algoma District, General Superintendent's prize, $50—C. Smith, Sec. 1, Parry Sound S'd.

Sudbury Division, Superintendent's prize, $25—E. Morin, Sec. 12, North Bay S'd. Roadmasters' prizes, $10—S. McCarthy, Sec. 2, North Bay S'd.; W. Evans, Sec. 6, Cartier S'd.; J. Penfold, Sec. 6, Parry Sound S'd.; D. Vitone, Sec. 9, Thessallon S'd.

Chapleau Division, Superintendent's prize, $25—E. Nelson, Sec. 23, White River S'd. Roadmasters' prizes, $10—M. Hakkinnon, Sec. 24, Nemegos S'd.; M. Stasco, Sec. 7, White River S'd.

Schreiber Division, Superintendent's prize, $25—H. Patritti, Sec. 15, Nipigon S'd. Roadmasters' prizes, $10—L. Zanni, Sec. 15, Heron Bay S'd.; B. Michaud, Sec. 19, Nipigon S'd.

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The Board of Railway Commissioners' report for the year ended Mar. 31, 1918, was distributed from Ottawa in April. We are advised that the report for the year ended Mar. 31, 1919, is being printed, but will not be ready for distribution for some little time.

Additional Hand on Watches. — Grand Trunk Ry. employes have been notified that the addition to their watches of another hand, to indicate standard and daylight saving time, will not be allowed by the company, in the interests of safety first.

## Among the Express Companies.

The Canadian National Ex. Co. has opened an office at MacDairmid, Ont.

The Canadian National Ex. Co. has opened an office at Ragged Rapids, Ont., and has closed its temporary office at Kylemore, Sask.

The Board of Railway Commissioners has approved the location and details of the express building for the Canadian Ex. Co. at the G.T.R. station at Paris, Ont.

The Board of Railway Commissioners passed general order 296 May 15, granting the Express Traffic Association of Canada's application for approval of regulations for transportation by express of acids, inflammables, oxidising substances, etc., after making certain alterations therein.

Under the Corporation's Tax Act 1920, passed by the New Brunswick Legislature recently, it is provided that every express company doing any express business within the province shall pay $100 for each city in which it transacts business, $50 for each town, whether incorporated or not, having a population of 3,000 or more people in which it transacts business, $25 for each town or village with a population of at least 2,000 in which it transacts business and $10 for each office with an agent in any other place having a population of more than 200 people.

The American Railway Express Co. will from July 1 keep a duplicate copy of every receipt it issues when receiving business from shippers. The duplicates will be retained by the company for record and reference, and will be held at the shipping office. Shippers who have been accustomed to prepare their own receipts, or who have their own forms, have been requested to make provision for supplying duplicates to the express driver or receiving clerk who signs them. As a matter of convenience to shippers,

the company's regular receipt forms will be revised to permit their use in duplicate form. In cases where prepaid receipts are now being issued in duplicate, the extra copy being used as a record of charges paid, a third copy will be required under the new system, and in such instances prepaid receipts will be issued in triplicate. One of the objects of the new system is to bring about better protection for and methods of recording the movement of express packages in transit.

The Board of Railway Commissioners passed order 29,581, April 27, as follows:—Re application of Express Traffic Association of Canada, on behalf of express companies under sec. 360 of the Railway Act, 1919, for approval of a proposed Supplement 2 to Express Classification for Canada 4, containing certain increased, reduced, and additional ratings; the Supplement having been submitted originally for approval as Supplement H to Express Classification for Canada 3: Notice of submission for the board's approval having been given by the express companies in The Canada Gazette, as required by sec. 321 and 348 of the Railway Act, 1907, and to the mercantile organizations enumerated in general order 153, Nov. 4, 1915; and upon the consideration of objections filed with the board to certain proposed increased ratings and charges; and upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the proposed Supplement 2 be approved, with the following exceptions, viz.:

(1) Conditions of Carriage 3 to be struck out, having since been included in Express Classification for Canada 4, approved by order 28,627, Aug. 11, 1919.

(2) The items referring to liquids and to Scale K to be struck out, having been withdrawn by the companies for further consideration.

(3) Gas mantles, incandescent, 1½ 1st class, instead of twice 1st class, as proposed.

(4) Hand pumps: 1st class when boxed or crated; 1½ 1st class if packed otherwise, instead of twice 1st class as proposed.

(5) Organs: minimum charge to be the same as proposed and hereby approved for automatic piano player attachments.

## Telegraph, Telephone and Cable Matters.

The British Columbia Telephone Co. is reported to have ordered an additional submarine cable to connect Vancouver Island with the mainland, thus duplicating its present service.

The Great North Western Telegraph Co. has opened offices at Shippegan, N. B., Barraute, Landrienne, McCarthy, Que., Cardinal Canal, Ont., Bethany, Man., Ashmont, Burbank, Leslieville, Saunders, Smoky Lake, Alta., and has closed its offices at Callander, Grafton, Kabina and Norwood, Ont.

The Commercial Cable Co. is reported to have decided to add another cable ship to its service, for operation out of Halifax, N.S. It is stated that Capt. F. H. Landner is in Great Britain superintending the construction of this ship, which will be larger than the existing cable ship Mackay-Bennet. The company has completed new sheds at Upper Water St., Halifax, at a cost of over $100,000.

The New Brunswick Legislature has passed a Corporation Tax Act which provides, among other things, for a tax upon every telegraph or other company working a telegraph line for the use of the public within the province, a tax of 1% upon the entire gross receipts within the province, arising from business transactions within the province. A tax of 1% of the gross earnings within the province is provided for telephone companies with an additional amount of 25c. on each telephone under rental.

The Board of Railway Commissioners delivered judgment May 21 on the application of telegraph companies for permission to increase tolls. The completed judgment has not been received at the time of going to press, but it is stated that the companies will be authorized to subdivide the existing rate zones east of Sudbury, Ont., and extend them to Quebec province. Flat rates for the zones will be increased from 25c. to 30c. a message, and additional words will be 2c. instead of 1c. a word. Scaled increases from 10c. to 25c. a word will be allowed on the $1 transcontinental rate, with a special provision to allow the Grand Trunk Pacific Telegraph Co. to charge $1.55 to Prince Rupert, B.C. The increased rates do not apply to press dispatches or messages for the West Indies. The average increase in rates is 32% east of Fort William, Ont., and 20% west of Fort William.

## Proposed Wireless Telegraph System for the British Empire.

The Marconi Wireless Telegraph Co. has submitted a proposal to the British Government for the establishment of a series of wireless telegraph stations throughout the empire. The congestion at present prevailing on the submarine cables emphasizes the necessity for additional lines of communication. The knowledge gained, and the great strides made in wireless telegraphy during the war, render it quite possible to design a wireless system which it is claimed may be guaranteed to give a service, between any two places, equal to that given by the submarine cable.

The principles governing in any such scheme as is proposed, are broadly, as follows: That such trunk routes and branch routes be provided as will enable Great Britain to communicate with any part of the empire; that any part of the empire be capable of communicating with any ships equipped with modern wireless receivers in any sea between lat. 60N and 50S; that no submarine cable be relied on to form part of this proposed network of wireless communications; that the use of land telegraph lines be avoided as far as possible, and these lines restricted to the passage of messages between the public and the nearest wireless station; that where alternative routes are available, such as between England and South Africa, via the east coast or the west coast, both routes be provided; that on the trunk routes, automatic transmission and reception at a speed of not less than 100 words a minute be provided, and that separate transmitting and receiving stations be erected, in order that the service may be duplexed; that as much foreign traffic as possible be attracted to the network, in order that the system may at least be self supporting as a commercial enterprise, preferential treatment being accorded to British traffic.

The routes proposed are as follows:—England to India and thence to Singapore, Australia and New Zealand, with a branch from Singapore to Hong Kong; England to Egypt and thence to East Africa and South Africa; England to Egypt and thence to India, Singapore, etc.; England to West Africa, with a branch from West Africa to South America; England to West Indies; England to Montreal and thence to Vancouver; Australia to Vancouver (only night service to begin with). This system would necessitate the erection of 5 main trunk stations in England, 3 in Egypt, 3 in India, 2 in East Africa, 2 in Montreal, 2 in Vancouver, 2 in South Africa, 1 in West Indies, 2, with 1 auxiliary, in West Africa, 2, and 1 auxiliary, in Singapore, and 2 with connection to New Zealand by main feeder station, in Australia.

The company has offered to build, maintain and operate such a chain of stations at its own cost, and to pay to the Government in each of the territories where one or more stations is erected, 25% of the net profits earned by such stations. On the expiration of 30 years from the inauguration of the service, it will become the property of the government concerned, if so desired, without any payment. Thetrunk stations to be completed within three years from the date on which permission to begin work is given. The governments concerned will have the right to take over any of the stations at any time, by paying for them the value at which they stand in the company's books, plus any sum which may have been expended on the creation of the services, and by paying to the company 10% of the gross receipts for the balance of the 30 year period. The government will also have the right to take over and control the stations in the case of war or of national emergency.

**Old Time Telegraphers' and Historical Association.**—The annual meeting of this association will be held at Toronto, Aug. 31, Sept. 1 and 2, G. D. Perry, General Manager, Great North Western Telegraph Co., Toronto, being President. A committee meeting was held at Toronto recently, to make the preliminary arrangements for the reunion. The association has only met once before in Canada, since its organization in 1880, that being at Montreal in 1901. In the endeavor to make the forthcoming meeting a record one, the committee purposes enlisting the co-operation of all telegraphers and ex telegraphers in Canada, eligible for membership, and elaborate arrangements are being made for the entertainment of the visitors. Committees have been formed to take charge of the various sections under the names of membership, finance, entertainment, publicity, hotel, badge and supply, and ladies.

**Government Telegraph Operators.** — The Minister of Railways stated in the House of Commons recently, in answer to questions:—Government telegraph operators have not received the bonus granted to other civil servants, and it is not the government's intention to grant them the bonus in future. Standard rates of pay, corresponding to those of the commercial telegraph companies, are paid government telegraph employes, and being in receipt of prevailing wages they are not entitled, under the regulations, to receive any bonus.

**Telegraph and Telephone Line Estimates.**—The further supplementary estimates for the year ended Mar. 31, 1920, submitted to the House of Commons recently contain the following items for telegraph and telephone lines:—British Columbia: Mainland, further amount required, $14,000. Alberta: Further amount required, $8,500.

# Electric Railway Department

## The Engineering Features of Tramway Operation.

By D. E. Blair, B.Sc., A.M.E.I.C., Superintendent of Rolling Stock, Montreal Tramways Co.

The author has had many doubts as to the best direction in which a discussion on tramway matters should be guided, in order that the results of his labor should be of general interest as well as be of some value in a constructive sense. A decision was made that it would be appropriate to apply our efforts to a discussion of matters that have a direct bearing on further improvement of car service rather than to offer a critical or descriptive treatise on existing conditions. The object of the paper will, therefore, be to point out some things that may be done to effect a more complete solution of the transportation problems that face us today. Further progress must be guided by an appreciation of sound engineering principles, unfettered by consideration of established custom, expediency, ward poltics, and selfish wire pulling. The highest ideals attainable should be kept in plain sight. It will then be in order to stick as closely as possible to standards of maximum efficiency, and to depart therefrom only because of sound practical reasons. The subject can thus be approached with an open mind and we can realize more quickly, and with less effort, that certain existing conditions have no sound reason for existence except that they have been established by custom. These conditions must be improved if we are to enjoy a higher standard of service for a minimum of cost.

The matter of urban transportation has always been a vital factor in the life of city dwellers, but in a passive sense. The public at large are now active partners in the operation, as well as the users or patrons, of the street car services of many cities, and we should now realize that the street car service in any large community serves a greater number of people, and is of greater importance, than any other form of traffic, and should therefore be given prior rights, within reason, over all other vehicular traffic. Since the rate of fare and the quality of service rendered depend entirely on the overall efficiency of operation, it seems to be an opportune time to direct attention to the great importance of educating street car users to a fuller understanding of the fundamental factors that make for efficient and satisfactory transportation. It is of great importance that they should know, and fully appreciate how, and to what extent, the hearty co-operation and good will of the public, and of the municipal authorities, is necessary to the consummation of the carefully worked out plans of the management of public utility organizations toward further improvements.

The present equipment available, and in general use, has reached a very high standard. No consideration of cost or lack of engineering skill stands in the way of further progress, and the art has reached a stage where little remains to be done, that is within the control of railway managers, to improve the standards of modern car service. Under existing conditions we have reached a point very near to maximum theoretical efficiency, and this question presents itself: Can existing conditions be modified, without injury to other interests, so as to result in improvements that are worth while?

The development of street transportation has not been confined to any particular locality on this continent, but is the composite result of painstaking effort distributed from coast to coast. Methods and practices have always been wide open for comparative study, and full advantage has been taken of this fact. Many recognized opportunities for improvement still remain undeveloped, owing largely to a strange unreasoning attitude of the public against any reforms that are suggested by the capitalistic monsters who thrive in idleness upon the fabulous wealth wrung from the hands of those who toil. This is the mental fog that must be dispelled by education, before much further progress can be made. The financial operations of many of the larger transportation ventures of this country are now laid bare to public scrutiny. Public commissions now supervise every transaction, and have more than a theoretical control of actual operation. It is interesting to note that the rapidly increasing rates of fare are coincident with the increasing effectiveness of public supervision.

**Canadian Electric Railway Association.**

**Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.**

**Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.**

**President, A. Gaboury, Superintendent, Montreal Tramways Co.**

**Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.**

**Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.**

**Executive Committee, The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.**

**Official Organ—Canadian Railway and Marine World, Toronto.**

General Argument.—The primary requisites of a satisfactory system of transportation may be stated as follows: 1, Speed. 2, Safety. 3, Comfort. 4, Continuity of service. 5, Frequency of service. 6, Convenience of service. In addition to, and closely associated with each of these, is the question of economy, but it is not the writer's intention to preach economy where depreciation of any of these factors is the result.

Any increase in the standards of the last five items is likely to add to the cost, but it is well that we should realize that increase of speed, within the practical limitations of street traffic, will tend toward greater economy, without necessarily affecting the question of safety, and higher speed will add very materially to the efficiency of the service. Speed of transportation may in fact be considered as the fundamental requirement of a satisfactory service, and it should, therefore, be the outstanding objective of all effort toward improvement. By speed or schedule speed is meant the average or effective speed with which a car covers distance, and this should not be confused with velocity at any given moment or with maximum speed attained between stops. In order to intelligently analyze the question of schedule speed it is necessary to introduce a very convenient figure which allows us to dissect and study the fundamentals of all traffic movement, viz.: the speed time curve.

Speed Time Curve.—The movement of a street car from one end of a line to the other is made up of a series of hops, or cycles, from station to station, or from stop to stop, and it will be one of the chief purposes of this paper to show to what extent the public would benefit by a radical increase of the distance between stops. If they would once realize this fact, they would insist upon an immediate change. These cycles vary in length, and the time necessary to operate over each one is subject to conditions of grade, density of traffic, etc., but a study of a single average cycle will bring out all the characteristics of a series of such cycles which constitute any run. What happens in such a cycle can be represented very accurately by a diagram constructed of four distinct elements, representing each of the four factors of which any typical run or cycle is constituted. The variation in speed of any moving object may be represented graphically by a series of points, the height of these points above a base line being in proportion to the speed, and the distance from a vertical line of reference being a measure of the time, after the beginning of the cycle, at which each speed is observed. Thus a constant speed would be represented by a horizontal line joining the observed degrees of speed or velocity. Thus also a line slanting up ward represents the movement of an object whose speed is increasing, and a line sloping downward indicated a decreasing rate of motion.

The four component elements of our curve are as follows: 1, Period of accelleration from rest to maximum speed, under the action of propelling forces. 2, Period of coasting, without applied power, and without restriction of motion other than from friction. 3, Period of decelleration or slowing down, under the retarding action of brakes and friction. 4, Period of rest at stopping points. Each of these periods is subject to certain practical limitations, but each one is also affected by variable elements, some wholly within the control of the operating crew, some depending entirely upon the passengers, and others subject to motor capacity, interference of independent traffic, physical conditions, etc. The ef-

ficiency of the whole is dependent upon the co-operation of the general public, for whose benefit the cars are operated, but who are prone to magnify the value of petty advantages to the individual at the expense of the general welfare. Control of traffic by the municipal authorities also has a serious bearing on the matter. Because of the practical limitations controlling each factor and because the question of economy is also of interest, further explanations are advisable.

Acceleration Period.—The rate of increase of speed is in proportion to the resultant of all the forces acting on the car. The forces applied to produce motion are rarely limited by the capacity of the motors, but should be controlled within a reasonable degree of comfort to the passengers. The rate is absolutely limited by the amount of tractive effort that may be developed between wheel and rail, before wheel slipping occurs. As to comfort, the sensations due to change of speed are not so much due to a high rate of accelleration as to sudden changes in the rate of accelleration. A constant rate of 5 F.P.S., P.S. has no disagreeable effects, but a sudden change from a rate of 2 F.P.S. to 3 F.P.S., P.S. is quite noticeable and annoying. For this reason, the high rates attained with the help of automatic methods of control in use on the New York subways, or on the 2-car trains in Montreal are not noticed as much as the jerky motion resulting from control changes under the hand and judgment of the motorman of an ordinary car.

The rate of accelleration under either method of control is under the control of motorman and is, of course, subject to rail conditions. It is of considerable importance as effecting schedule speed, maximum speed, safety, and economy. A certain definite amount of energy must be applied to a body of known weight, in order to impart a given speed to that body. In the case of a car in city service the energy absorbed in overcoming friction is quite small. A very large proportion of the applied energy is utilized to overcome the inertia of the car. The power necessary to propel a 25-ton car, at a constant speed of 8 m.p.h. is only 10.7 h.p. To accellerate this same car at a reasonable rate of 2 m.p.h. per second required 230 h.p.

Attention may be called to the wide difference between the controlling factors of steam railway trunk line practice and that of street railways. Freight movement, especially, is controlled by the relation of weight on engine drivers to total tonnage hauled. Rate of accelleration is not of primary importance, provided a locomotive may start a standing train, and negotiate ruling grades. Steaming capacity is then provided to maintain a reasonable speed over relatively long distances. Street car equipment, on the other hand, is designed primarily to produce quick accelleration. Motor capacity is then ample for the operation of grades up to nearly 15%.

All of the energy applied to overcome inertia, and therefore impart speed at the beginning of a cycle, remains stored up in the car, by virtue of its motion, in the form of kinetic energy, and is available to perform useful work in overcoming frictional and other resistances throughout the rest of the cycle of motion. It is a fact, not generally recognized, that, within the limits of wheel slippage, the faster the rate of accelleration of a street car, the less power is consumed to produce a given speed. This is partly due to the inherent characteristics of the series wound motors universally applied to this kind of work. These characteristics are such that a series motor is capable of producing maximum torque, at maximum efficiency, at the low speeds at which a large part of the total work within a cycle is performed. A high value of motor efficiency is maintained at the higher speeds as well. A further outstanding advantage is that it will automatically adjust its speed, in keeping with the nature of the work it has to perform, thus tending to keep down the current drawn from line within the limits of its capacity.

The speed of the motor under a given load is definitely fixed by the voltage applied to its terminals. The line voltage being constant, and the maximum current allowable during accelleration being limited, it is necessary to absorb the excess voltage during that period by switching inert resistance into the main motor circuit. For this reason about one half of the energy drawn from line during the time of controlled accelleration is absolutely wasted in the rheostats. It is, therefore, desirable to shorten this period and to impart as much of the final speed as possible after all wasteful resistance has been eliminated and the motors are working at a high overall efficiency. The importance of fast accelleration goes far beyond the question of energy wasted in rheostats. High speed is essential if we wish to overcome space in minimum time. It is obvious that the more quickly the maximum speed of a given run is reached, the shorter the time that will be necessary to cover the distance between stops, or, to state this in another way, the higher the average speed throughout the run the lower will be the maximum speed necessary to traverse a given distance in a given time. The element of danger in the operation of vehicles of any kind is qualified by maximum speed attained, rather than by the more reasonable average speed. It was previously mentioned that average or schedule speeds can be increased without increasing the hazard. Here is the explanation and this will be referred to again.

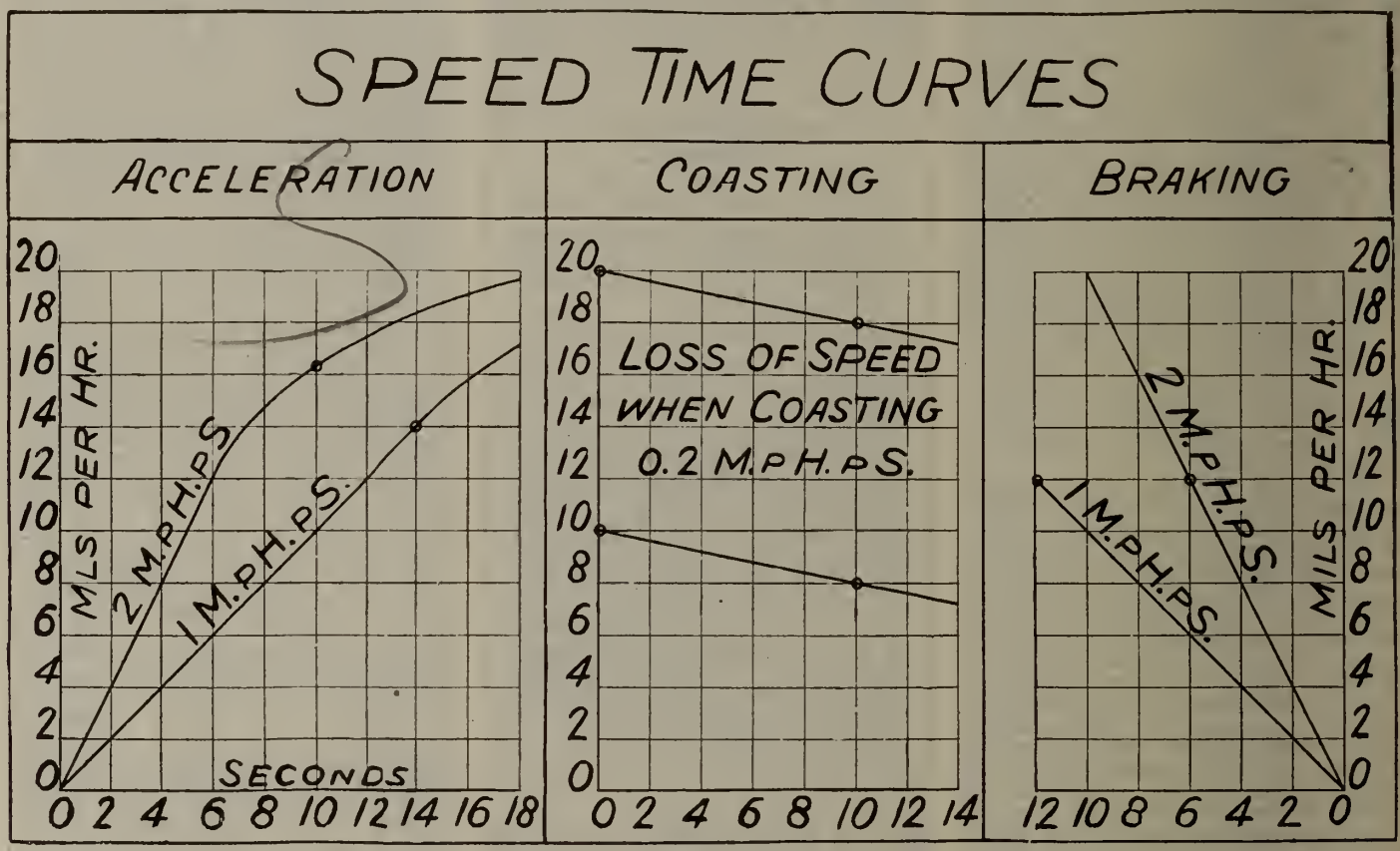


Chart One

**Coasting Period.**—It was previously stated that a large part of the total energy required to operate a street car is utilized to overcome inertia and impart speed. The kinetic energy stored up in the car at a given speed during each cycle is equal to one half its weight, multiplied by the square of its velocity in feet per second. If the operating conditions are such that the brakes must be applied as soon as the power is turned off, practically all of this energy is absolutely wasted in the form of heat developed at the brake shoes. This is undesirable. If, however, the run characteristics are such that after a certain maximum speed has been promptly reached, power can be shut off and the car allowed to roll, or coast, for a greater or less distance, before the application of brakes, then a certain proportion of this stored energy is utilized to good advantage, in overcoming the frictional resistances during the remainder of the run. During this period the car will slow down gradually, losing about one mile per hour of speed in every five seconds. The brakes are applied at a lower speed than in the previous case, and, besides the saving of power, there is a distinct saving in wear of brake shoes and wheels. The length of this coasting period in the analysis of any run gives a very definite indication of the efficiency of the motorman. This desirable period can be lengthened by cutting down the other three, viz.: accellerating, braking and rest periods.

**Braking Period.**—The rate of acceller-ation or braking, is under the control of the motorman, and subject to conditions of rail friction and comfort of passengers. A maximum rate of 3½ miles an hour per second is possible, but seldom reached on open streets. A high practical standard is about 2 miles an hour per second. The only point of special interest here is that, for the same reasons as given under the heading of accelleration, a maximum rate of braking should be developed at the beginning of the period when the speed is greatest. It is evident that as much distance as possible should be covered while the car is running free at a high speed, and that the brakes should be applied for as short a time as possible. The average speed during the application of brakes is only half of the initial speed at which brakes were applied and it is evidently desirable to shorten the time during which this reduced speed is effective to overcome distance.

**Period of Rest.**—Since movement is the primary object of transportation, it is evidently desirable that the stops should be as short as possible, and here is where the co-operation of the passengers is of greatest importance. In order that this fact may be impressed upon the mind while further discussion proceeds, it may be stated that since the rates of accelleration and braking can be fixed at a practical maximum, every second wasted while a car it as rest is equivalent to a loss of distance equal to one second's travel at maximum speed, say 20 miles an hour, viz.: about 30 ft. per second. Experience and careful recording of actual conditions has shown that good traffic control, prompt movement of passengers, alert action by the conductor and immediate response of motorman to his signals will result in practical loading and unloading delays as low as one second per passenger in fairly large batches and three seconds per passenger when only one or two passengrs are handled.

The average length of stop in some cities is less than three seconds. Actual conditions existing in Montreal do not compare favorably. The reasons are perhaps not so much due to lack of energy, or to inherent slowness of movement of the local population, but rather to the fact that the public has not been educated to a realization of the great advantages to themselves that would result from a snappier movement when in the vicinity of the steps of a standing street car. It must be remembered that each car on a busy line is just one of many links in a moving chain, and any delay suffered by one car is reflected back to every other car in the line, so that the speed of the whole is limited to the speed of the slowest car.

Other means of eliminating these wasted moments, which, when all added up, result in considerable loss of time and speed, are as follows:—1. Passengers having change or tickets ready, and in hand for deposit, when boarding car. Fumbling in pockets and handbags, on crowded platforms, and tender of bills when purchasing tickets, are very efficient methods of annihilating speed. 2. Clearing of entries and exits, thus assisting free movement. 3. Movement of descending passengers toward doorways, in advance of actual stoppage of car. 4. Provision by the municipal authorities of safety zones at congested points, where intending passengers may form in queues at the exact location where the car step will be stopped. 5. Better control of promiscuous traffic, at certain crowded intersections at busy hours. At certain points the public should demand that all but street car traffic be prohibited at rush hours. At other points, left hand turns of vehicles should be prohibited, and automobiles and other vehicles should not be allowed to park at the curb, within a block on the near side of intersections. This allows moving vehicles to remain on the roadway rather than encroach on the car tracks. 6. Prevention of overcrowding of cars. Delays from this cause are very serious, and reforms in this direction will require the serious and well organized co-operation of the police with the more thoughtful element of the public.

It will perhaps be some time before the public will realize that a company is losing money when cars are crowded to the point where length of stops are appreciably increased, and further to appreciate the fact that if crowding were not permitted, anyone could afford to let half a dozen cars go by, and still get home sooner than they do when overcrowding exists. The cause of congestion at certain downtown loading points is that during certain periods the number of people requiring transportation is larger than can be handled by the number of cars that can be operated past these points on limited track facilities. A sufficient number of cars is usually available. These form a long procession, ready to perform useful work, but are forced to crawl along at snail's pace, owing to the excessive time lost in loading by each unit at the head of the procession. There are times when, because of the danger attendant upon starting cars while a crowd is surging around the steps, more than a minute elapses between the dispatch of successive cars. Each of these may carry 125 passengers. Three times as many cars could be sent away, loaded with 80 to 100 passengers each, if crowding were eliminated, and the company, as well as the public, would profit by the change. Elementary arithmetic will show that six equally spaced cars, running around a loop at 12 m.p.h., will transport as many passengers as 12 cars running in the same loop at half speed, or 6 m.p.h. Why then should the public

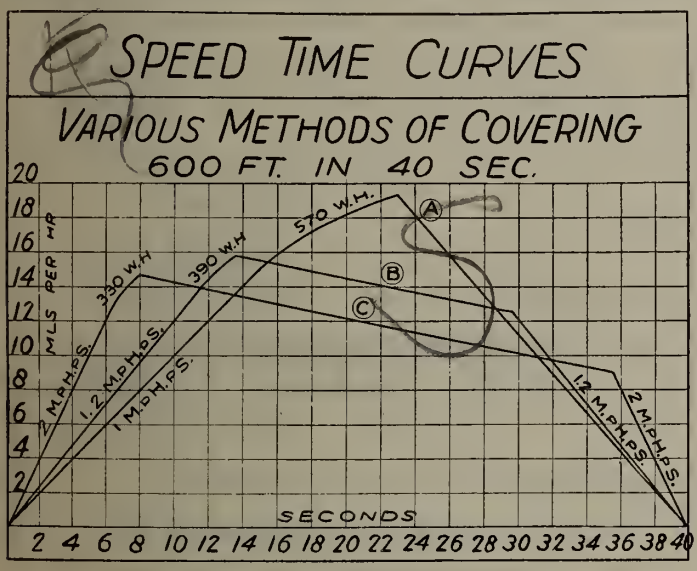


Chart Two

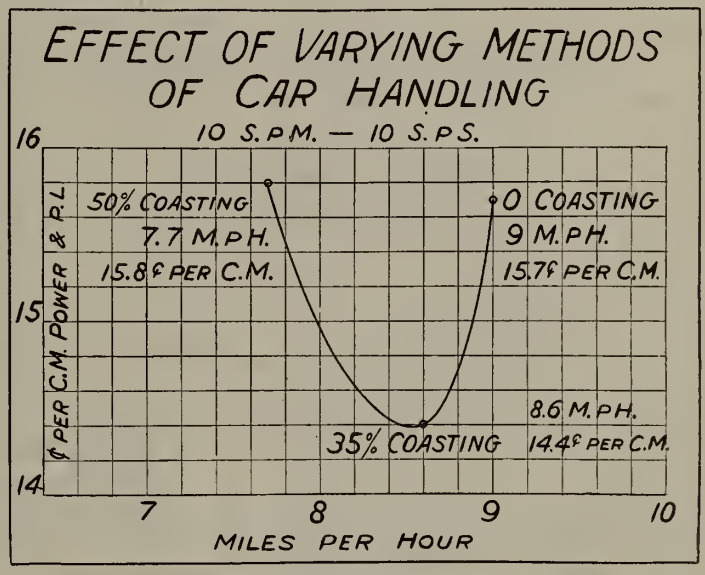


Chart Three

not co-operate with a company to run all the 12 cars at 12 miles an hour with half the number of passengers in each car?

Under present conditions, operating companies are providing far more cars than are necessary to perform the relatively poor service rendered, but it is physically impossible to bring these cars into efficient and expeditious service, on account of slow dispatching of car units past congested areas. If we always keep in mind the idea that every car on every city line can be considered as a link in an endless chain belt, it will be easy to realize the advantages that would accrue to both the public and a company, if the speed of the whole chain can be increased. The strap hanger may quite properly be said to pay the dividends, but the rear platform acrobat is a general nuisance, and should be treated as such.

The general features of the several elements of the speed time curve having been discussed at some length, we may now proceed to a study of the curve as a whole. Before doing so, it is necessary to call attention to what is perhaps the most important factor bearing on the question of faster schedule speeds, viz.: the number of stops per mile or the spacing of stops. We must know the number as well as the duration of the stops before we can form any idea of the time necessary for a car to travel over a given route.

It will be shown that after the highest possible speeds have been reached, as a result of close co-operation between the operating company and the public, it is yet easily possible to make remarkable improvements in schedule speeds, simply by reducing the number of stops. Under prevailing conditions, in Montreal and elsewhere, it is not found practicable to make better speed than 8 miles an hour, when a car has to make 10 stops a mile. About 9 miles an hour is the maximum possible speed that can be made within the limits of accelleration, braking, and time of loading previously mentioned, when making 10 stops a mile. It will be seen, however, that by the simple expedient of increasing the distance between stops, from 528 ft. to 880 ft., it is easily possible to maintain a practicable schedule speed, under exactly the same operating conditions, of 12 m.p.h. In other words, by adding 352 ft. or 66% to the distance between stops, a trifling matter when studied intelligently, we can add 50% to the effective speed of every car on the system. The element of safety is not affected, and the higher speed means that every passenger will get to his destination in one third less time. One hour is cut down to 40 minutes, three quarters of an hour to 30 minutes.

Why has this practice not been adopted? Simply because the voice of the individual who runs a banana-stand at a street corner where a stop has been eliminated, is louder than the demand of the public for a constructive plan of improvement in their car service. Incidentally it will be shown that the possibilities of increasing prevailing schedule speeds in this direction is not striking, until the average distance between located stops is greater than 528 ft. or 10 stops a mile. As spacing is increased beyond this limit, the advantages are very interesting and the opinion may be expressed that there is no good excuse for placing stopping points less than 800 ft. apart.

**Analysis of Speed Time Curves.** — It has been stated that the accelleration and braking rates have definite limits. It is not practicable to accellerate or brake faster than 2 miles an hour per second. Up to this limit, however, the motorman has complete control and can vary the rates at will. These periods then being of less direct interest to the public, it will be necessary here to merely indicate in which direction the motorman's efforts should be turned in order to produce the high average speeds which this paper advocates.

**Accelleration, chart 1.**—Considering accelleration first, take two examples of one and two miles an hour per second respectively. The straight line part represents the speed of the car, as the power is gradually turned on by the motorman. When power is full on, the inherent characteristics of the motors determine how the speed will continue to increase. After 10 seconds of operation, with an initial accelleration of 2 m.p.h. p.s. a distance of 140 ft. has been covered. It will be found that it requires 14 seconds operating the other way to cover the same distance. Obviously slow accelleration does not make for high schedule speeds, and therefore fast accelleration, up to the limit imposed by comfort of passengers, should be encouraged. Power is being consumed during the whole accelleration period, and it will be shown that not only does fast accelleration make faster schedules possible, but that in a given schedule, fast accelleration allows the cycle to be performed at a smaller power cost.

**Coasting.**—The action of the car while coasting is entirely out of the hands of the crew, and on level track the car retards at the rate of two miles an hour in 10 seconds, no matter what speed the car had when coasting commenced. Obviously a car retarding from 20 to 18 m.p.h. in 10 seconds will cover more distance than a car retarding from 10 to 8 m.p.h. in 10 seconds. It is absolutely essential that in practice a certain amount of coasting be allowed in the average cycle; otherwise when delays occur the car cannot regain time. Here then is a further argument for fast accelleration. Since high initial coasting speed is desirable, and the total time in motion is limited, the only way to obtain that speed is to accellerate quickly to it.

**Braking.**—The same reasoning applies to the reverse operation of braking. Consider two cases where cars are braked from 12 miles an hour at rates of 2 and 1 m.p.h. p.s. respectively. In one case it takes six seconds for the operation of bringing the car to rest, and in the other case 12 seconds. If we are trying to save time, the first is evidently the proper method. Incidentally, brake shoe wear is much less at the higher rate of accelleration and braking, because of lower maximum speeds and greater degree of coasting.

**Completion of Speed Time Curves.**—Combining the three elements just considered, we obtain diagrams as shown on Chart 2. Since the area of this diagram is the product of time and speed, it is a measure of the distance travelled. This illustrates three methods of traveling 600 ft. in 40 seconds. The first method is to accellerate slowly to a certain speed, and brake slowly to the stopping point (Curve A). The second, to accellerate somewhat faster, coast a certain distance, and brake somewhat faster (Curve B). The third, to accellerate as fast as is practicable, coast as far as possible, and brake as quickly as comfort will permit (Curve C). The motorman has these three choices or some modification of each. So far as the passengers are concerned, they all accomplish the same end, viz.: going 600 ft. in 40 seconds. But there are two very im-

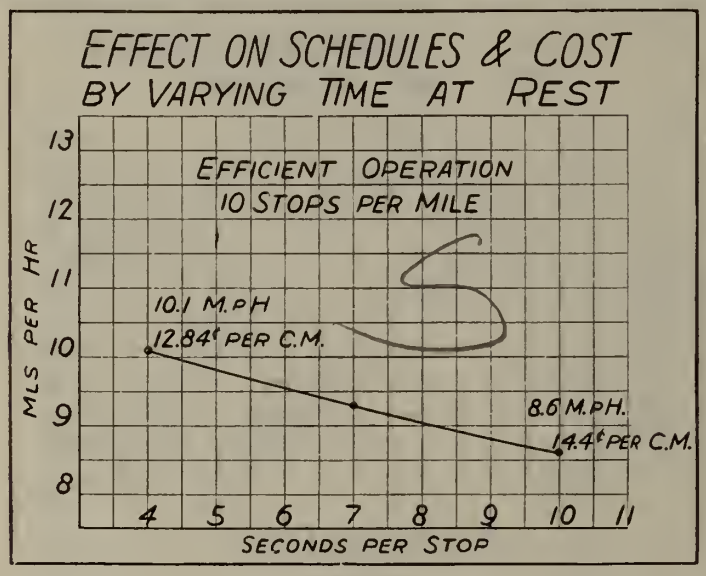


Chart Four

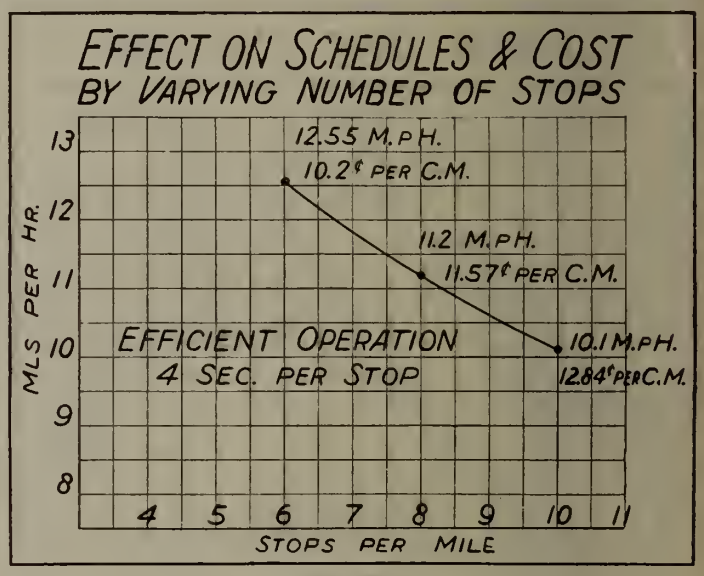


Chart Five

portant points to consider here: safety and cost.

The factor of safety of car operation may be described as the ability of the car to stop quickly in emergency. If we consider that the possible stopping distance is proportional to the square of the speed at which the car was travelling when the brakes were first applied, it will be apparent that the safest way of operating is that in which the car has the lowest maximum speed. A calculation of power consumption reveals the fact that method A required 570 watt hours for the trip; method B, 390 watt hours, and method C 330 watt hours. So from the point of view of economy also, once the distance and time are fixed, the practice should be to accellerate and brake fast, and coast as far as possible. This completes the part of car operation directly in the hands of the motormen. The crew do not fix schedules, and they can only partially assist in speeding up the remaining element of the cycle, viz.: the time at rest.

Before passing on, however, attention should be drawn particularly to the fact that in this matter of car operation, safety and economy are coincident. Since there are such wide variations in possible power consumption for a given run, it is quite plain that for economy's sake the companies will do all in their power to encourage motormen to operate efficiently. Many companies have made marked improvements in this direction by educational campaigns supplemented by instruments which record each car's performance, and have incidentally lowered the maximum speeds thought to be necessary for satisfactory operation. The subsequent argument for higher schedule speeds bears this in mind, and nowhere in this paper is a schedule speed mentioned that if efficiently operated will necessitate a higher maximum speed than is frequently observed with inefficient operation at 8 miles an hour.

Schedule Speeds.—Passing now from individual car runs to the larger question of operation in general, we will connect the argument with the two large factors in which the public and the operating companies are directly and jointly interested, viz.: schedule speeds and operating costs. Certain portions of the costs are fixed, others are functions of the schedule speed. We will confine ourselves to the latter, and see in what manner increased schedule speeds affect public convenience, and also operating costs, which of course in turn reflect to some extent on the rates of fare. It is necessary to show the relative effect of varying the principal factors that bear on the subject of schedules. These are:—Motorman's performance or efficiency of car handling; gear ratio; time of stop; distance between stops. Motorman's performance, though very important in some respects, has relatively very little to do with schedule speed. As we have seen, it is to everybody's interest to accellerate and brake as quickly as possible, and a certain amount of coasting is absolutely necessary, for the sake of flexibility as well as efficiency.

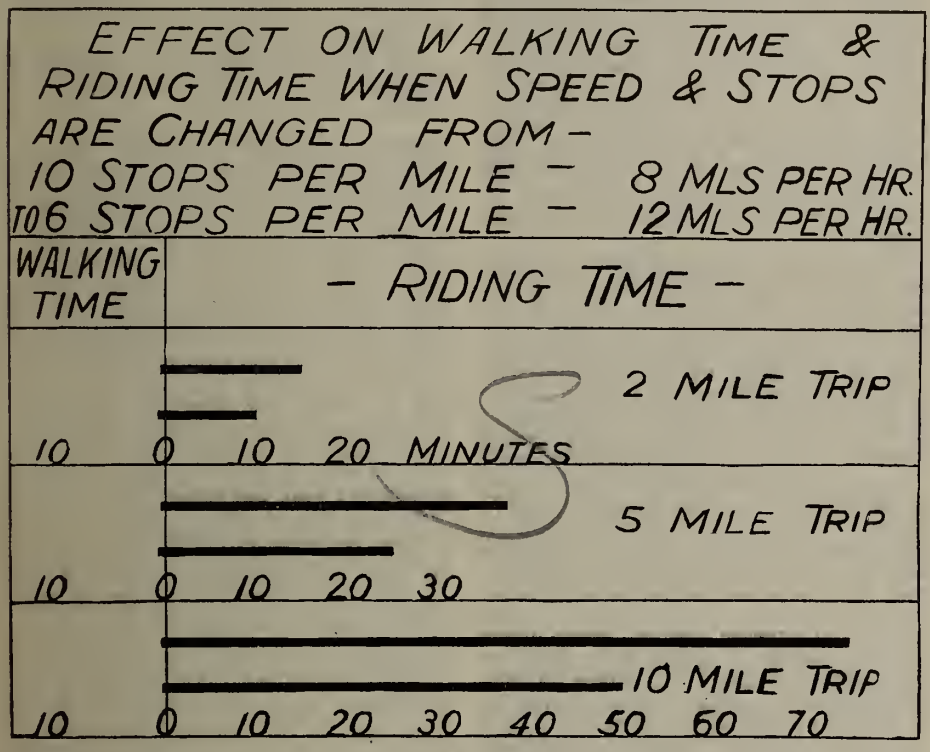
EFFECT ON WALKING TIME & RIDING TIME WHEN SPEED & STOPS ARE CHANGED FROM –
10 STOPS PER MILE – 8 MLS PER HR.
106 STOPS PER MILE – 12 MLS PER HR.
WALKING TIME
– RIDING TIME –
2 MILE TRIP
10 0 10 20 MINUTES
5 MILE TRIP
10 0 10 20 30
10 MILE TRIP
10 0 10 20 30 40 50 60 70

Chart Six

Chart 3 shows to what extent, with a given equipment, schedule speeds may be varied, by allowing different coasting periods, accellerating and braking rates remaining fixed at the practicable maximum of two m.p.h. p.s. The highest schedule speed is of course obtained when no coasting is allowed, i.e., power is left on till the moment brakes are applied. Thus for any condition of stop, and time of stop, there is a definite maximum possible schedule speed. This is fundamental, and shows up the fact that no marked improvement in present schedules can be obtained by any manipulation of the car itself. For instance, at 10 stops a mile, 10 seconds a stop, the highest schedule speed possible is 9 miles an hour. There is no way of increasing this, by any changes of car equipment, within the practicable limits imposed by accelleration and braking rates. However, in order to have reasonable flexibility, i.e., to allow lost time to be made up, we cannot insist on maximum possible schedules. Furthermore, by increasing the coasting period up to a certain point, the decrease in power consumption more than offsets the increase in platform labor cost.

A still further increase in coasting reduces the schedule speed to a point where further saving of power is more than offset by increased platform labor, so that for any given distance between stops and time of stop, there is a schedule having minimum cost. This condition obtains when coasting is from 30 to 40% of total time. Note that costs as well as speed are almost entirely dependent upon the question of stops. At 10 stops a mile and 10 seconds a stop the following examples are noted:—

With 0 coasting 9 m.p.h. as maximum possible schedule, costing 15.7c a car mile for power and platform labor.

With 35% coasting, 8.6 m.p.h., which is the highest practicable speed with all motormen highly efficient; costing 14.4c a car mile.

With 50% coasting 7.7 m.p.h., costing 15.8c a car mile.

It is generally conceded that at 10 stops a mile the best that can be expected from average motormen is 8 miles an hour. The important point to keep in mind, however, is that no matter how we force a car, with unlimited motor capacity, under the conditions given, it is not possible to exceed a 9 mile schedule.

Gear Ratio.—This subject is rather technical, of interest mainly to equipment engineers. It has been discussed so frequently, to the exclusion of other matters of far more importance, that the fact is frequently overlooked that those other matters do exist. Within the narrow range of gear ratios available for city service, it is of quite minor importance, as will be appreciated from the statement that 30% change in gear ratio of a Montreal Tramways Co.'s car, allows a variation in schedule of only 6%. The only point worth noting here is that, with higher speed gearing, power costs tend to increase, and that, therefore, once a schedule is decided on we should use the lowest gearing that will maintain that schedule with sufficient flexibility. If, however, the question should arise as to the advisability of changing existing gear ratios, in order to economize in power cost, it may be suggested that it might first be well to study the results that would follow an increase of speed without change of gears. It may be found that the service will be vastly improved, and equal or greater economies effected at the same time, if the efficiency of operation is improved by increasing the speed, rather than by lowering the gear ratio to suit prevailing speeds. These are too low to meet modern requirements of transportation. There is little to be hoped for by altering equipment, and whatever results can be brought about by efficient car handling should certainly be taken advantage of by the operating companies, since it makes for economy at the same time. The only remaining factors of importance as affecting schedules are the time of stop and the distance between stops, and it will be seen that these have far more effect than any of the factors that are directly under the control of the operating company.

Time of Stop.—When the car is at rest, it is benefitting neither the passengers nor the company, for time standing still is absolutely lost, and it should be evident that the sooner the car gets started again, the better for all concerned. But here is a point in which all street car passengers are vitally concerned, for without their co-operation practically nothing can be accomplished.

Chart 4 has been prepared from a

series of speed time curves such as are shown on chart 2, showing the effect on possible schedules of varying only the length of time at rest. The schedules shown are what can be obtained by operating at high efficiency, but leaving some flexibility. Average distance between stops has been taken at 528 ft., or 10 a mile. When the car is at rest 10 seconds each stop, a schedule of 8.6 m.p.h. can be maintained. With seven second stops, a speed of 9.3, and with four second stops, 10.1.

Here are evidently some possibilities, but the question of cost must not be lost sight of. If increased schedules entail increased costs, we will have to find a compromise which while benefitting the public in the way of better service, will not be a burden in the way of higher fares. The two large items of cost, directly affected by car operation, are power and platform labor. Power can be calculated, once the run characteristics are fixed, and platform labor is inversely proportional to schedule speed. Combining the two then, will give a very close index of the trend of running costs. We found that by decreasing the time of stop from 10 seconds to 4 seconds, the schedule could be increased from 8.6 to 10.1 m.p.h. Since no change in the motorman's performance is necessitated by the change in the time at rest, power per car mile will be the same in both cases. Under the conditions stated, power will cost 3.93c a car mile at 1c a k.w. hour. Platform labor at 45c an hour will cost at 8.6 m.p.h., 10.47c a car mile, and at 10.1 m.p.h. 8.91c, so the combined costs are 14.4c and 12.84c respectively. Coincident, therefore, with the marked increase in possible schedule speed that can be brought about by the assistance of the public, is an equally marked reduction in operating costs.

Number of Stops.—Building on this promising result, let us see what the remaining factor, viz.: number of stops, will do. Chart 4 was calculated for 528 ft. stops. Using the four second stop which we saw was of advantage to both public and company, chart 5 gives the results of lengthening out these stopping points, within practical limits.

Calculating from similar speed time curves, it is found that at 8 stops a mile, instead of 10, under equally efficient car handling, a speed of 11.2 m.p.h. can be reached, and at 6 stops a mile, 12.55. Figuring power and platform labor as before we see them to be:—at 10.1 m.p.h., 12.84c; at 11.2 m.p.h. 11.57c; and at 12.55 m.p.h. 10.2c. Charts 4 and 5 are drawn to the same scale, to show that reducing the number of stops is of far greater influence on possible schedules than even the time of stop, and we saw that time of stop had more influence than car equipment and handling.

Let us see if the increased distance between stops imposes any serious inconvenience. Ten stops a mile means 528 ft. between stops, or 176 ft. average walking distance, aside from cross street travel. At three miles an hour, this requires 30 seconds to walk. Six stops a mile means 880 ft. between stops, or 220 ft. average walking distance, requiring 50 seconds. Now by having our stops 880 ft. apart and obtaining co-operation for quick movement at stops, we saw that a schedule of 12.55 m.p.h. is possible, or let us say 12 m.p.h. Please remember that this is the only way by which a 12 mile service can be made.

Chart 6 gives some idea of what the difference between 8 mile service and 12 mile service means to the average street car riders. It is suggested that the average passenger walk 20 seconds farther. If he is going 2 miles, he can save five minutes or 300 seconds. If he is going 5 miles he can save 12 minutes; if 10 miles, 25 minutes. This for an extra walk of 20 seconds. The public in a city like Montreal take some 210,000,000 car rides a year. Assume the average ride at 2 miles. The annual saving of time to the public by 12 mile service, as against one of eight m.p.h. is 17,500,000 hours, or 2,000 years.

It is worth remembering that this saving to the public in general would be accompanied by a substantial reduction in operating costs, and also a marked saving in capital investment, since the same service can be maintained with 800 cars at 12 m.p.h. as with 1,200 cars at 8 m.p.h. Cars of a type suitable for heavy traffic in Canadian cities cannot be bought just now for less than $20,000 each. Car house facilities, car house expense, etc., would of course be in proportion. It would seem, therefore, that in view of the prohibitive cost of equipment, during the present period of false values, it would be a sane policy to find ways and means to use existing equipment to better advantage, before we talk of undertaking capital expenditures to meet the growing demand for transportation.

It might well be asked, can the above reasoning be carried further. The answer is, very much further; but with the provision that the general public will have to realize, much more fully even than is necessary for the carrying out of the suggested changes, that street car traffic is by far the most important kind of city traffic and that nothing should stand in the way of improving it. With nonprotected tracks, and even well regulated vehicular traffic schedule, speeds higher than 12 m.p.h. begin to approach dangerous conditions, on account of the higher maximum speeds necessary. Provide a curb protected strip 6 or 8 in. high, for tracks, on certain streets reserved for express service, stops about 1,500 or 2,000 ft. apart, and protected crossings, and there is nothing to prevent a 20 mile schedule. The unthinking part of the public might regard this as a restriction on their right to wander all over the highway, but, in actual time, the gain would much more than offset any imagined inconvenience. However, let us get the 12 mile service first.

The outstanding features to be remembered are:—

1. That higher schedule speeds are desirable from every point of view. They can be obtained without extra cost and without affecting safety of operation.

2. That higher speeds will result in an improved degree of comfort and frequency of service, because of less overcrowding and shorter headway between cars.

3. That speeds higher than those now prevailing depend almost entirely on reducing the number and time of stops, and that a decrease in the number of stops is of more importance than a decrease in the time of stops.

4. That convenience is only a relative factor. An extra walking distance of a few feet is of no real moment when compared with the outstanding advantage of quick transportation. One cannot have private taxi cab service at tramway fares, but there is no reason why the speed of taxi cab service cannot be approached.

5. That appreciably higher speeds cannot be obtained by any possible means within the control of operating companies. Improved service rests in the hands of the users of street cars. Questions of car design, motor equipment, routing of cars, etc., are all of some importance, but their effect on the quality of service is negligible, when compared with the possibilities of improvement along the lines suggested.

6. That the bogie of high cost cannot be used as an argument against faster service, because higher speeds in city transportation tend toward lower operating costs.

7. Higher speeds will result in a more efficient use of existing equipment, with the result of curtailing the demand for the non-essential production of rolling stock, in favor of the real necessity for greater production of essentials.

8. It may be stated that it is absolutely essential to investigate every possible means of increasing the efficiency of existing rolling stock, in order that we may partly offset the radical demands for increased wages.

The foregoing paper was read before the Engineering Institute of Canada recently.

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**Montreal Conductor Charged with Assault.**—Alex. Despuis, a Montreal Tramways Co.'s conductor, with 20 years service, was charged before Judge Lancetot, at Montreal, recently, with assaulting three passengers with a switch lever. One of the passengers was so injured that he had to be attended by a doctor. That the complainants were struck by the conductor with the switch lever was not denied, but the evidence showed that one of the complainants was drunk and was so conducting himself that a complaint was made to Despuis, who started to put him off the car. The other two men interfered and the three were so aggressive that the conductor, to defend himself, took up the switch lever, and one of the men, in endeavoring to take it from him, was struck in the face with it. The judge held that there had been no intention to injure any of the men; that the conductor had used no more violence than was necessary, and that it was his duty to preserve order and to protect women from insult on his car. The whole fault was that of the young man who, in his evidence, admitted he was so drunk he could not remember what happened. The case was dismissed.

**Speed Limit in Montreal.**—Police Constable M. Herscovitch brought an action in the Quebec Superior Court, May 10, against the Montreal Tramways Co. to recover $15,000 for injuries to a minor son who was knocked down by an electric car on St. Lawrence Boulevard about five years ago. The evidence showed that the average speed of the car was 8.60 miles an hour including stops, which was in contravention of the Quebec Railways Act, which prohibited tramway companies incorporated within the province running cars in excess of 6 miles an hour unless the lines were properly fenced in, or unless the charter expressly provided that this speed limit might be exceeded. The Montreal Tramways Co.'s new charter authorizes it to run its cars at 10 miles an hour, subject to the Quebec Public Service Commission's approval. Advantage was not taken of this provision, counsel for the plaintiff stating that the sanction for the higher speed limit did not take effect until May 1, 1920. The action was settled, judgment being given fo rplaintiff for $2,000, thus obviating a legal decision on the point of law raised, viz., whether the company was limited until May 1, 1920, to a speed of 6 miles an hour by the Quebec Railway Act.

# Increases in Electric Railway Passenger Rates.

Cape Breton Electric Ry.—We are officially advised that in May, 1918, the company made an application to the Nova Scotia Public Utilities Commission for authority to charge a 6c. fare on all city lines, and a 6c. fare in each zone of the Sydney & Glace Bay Ry., the fares prevailing at that time being 5c. Public hearings were held in Sydney in July and Aug., 1918, and in Nov., 1919, and a decision was given by the Commission authorizing the company to put the 6c. fare into effect. This was done as of Mar. 15, 1919. In April, 1920, the company applied to the commission for authority to charge a 7½c. fare. If this increased fare is granted the company proposes to use metal tickets, similar to the ones now being used and would sell them 2 for 15c., 4 for 30c., 6 for 45c., etc. Each metal ticket would be good for one ride on any city line or in any one zone of the interurban line. The company feels it would be a hardship for anyone to buy so few as two tickets at a time and has therefore asked that in cases where a metal ticket is not tendered that the cash fare should be 10c., thus doing away with the use of copper coins. On the Sydney & Glace Bay Ry. the ticket fare in each zone would be 7½c., and the cash fare, if a ticket was not tendered, would be 10c. A person travelling through two zones would pay 15c. in metal tickets, or since it is no more trouble for passenger and conductor to handle a 10c. piece and a 5c. piece than it is to handle two metal tickets, the cash fare would be 15c. In three zones a passenger could pay by using three metal tickets or 15c. in cash or one metal ticket; in four zones he could pay either 30c. in cash or four metal tickets or 15c. in cash and two metal tickets. In other words, the ticket rate could be obtained at any time by tendering one or more metal tickets. The public hearing of the application was scheduled to come before the Public Utilities Commission on May 18. In preparation for this hearing the company's Manager, C. C. Curtis, waited on the councils of the various municipalities recently and explained the proposal. He is reported to have said that the fares should really be increased to 10c., instead of the 7½c. asked for. The company's pay roll for 1919 was 115% greater than for 1915, and 130% greater than for 1913, and certain repairs which cost $220 a few years ago had cost this year $590.

Levis County Ry.—The question of a proposed increase of fares necessary to meet the company's employes' demands for higher wages, came before the Quebec Public Service Commission May 11. Representatives of Levis and Bieuville municipalities stated that they would accept the Commissioners' arbitration of the matter, but it was stated that Lauzon and St. Romuald municipalities would stand by the terms of their contracts with the company. Counsel for the employes stated that the company had expressed its willingness to do something for them, but that its present resources did not permit it to do so; therefore they asked the Commission to take up the question of increasing fares. The commission decided to take up the matter and fixed May 19 as the date when the assent or refusal to accept the commission's arbitration be filed by all parties concerned, and fixed May 25 or 26 as the date for hearing the case.

A press report of May 20 states that in consequence of St. Rowuald and Lauzon municipalities having intimated to the Quebec Public Service Commission that they would not agree to a proposal to increase fares, the Levis County Ry. ceased to operate its cars in those municipalities on the night of May 19, the employes having refused to operate the cars in the municipalities on account of the refusal to allow higher fares, which would result in higher wages. The cars were reported to be running only to the Levis boundary on May 20. Lauzon municipal council has instructed its solicitor to take action to compel the company to operate its cars in the municipality.

Montreal & Southern Counties Ry.—Under the Board of Railway Commissioners' order 29,571, April 26, published in Canadian Railway and Marine World for May, pg. 253, the company filed its standard tariff of maximum tolls, cancelling standard tariff 10, as follows:—"The maximum passenger fare between Montreal and St. Lambert, Que., is 20c. Between all other stations on this company's lines, 3.45c. a mile. Fractions of 2½c. and under to be waived, over 2½c. and up to 5c., to be counted as 5c."

The new tariff became effective May 10. In connection with this increase of fares the company notified passengers that 55 and 46 ride commutation tickets sold prior to May 10 will be accepted until June 10; and that 10 trip tickets issued prior to May 10 will not be accepted but must be turned in for redemption. Ten trip tickets, good for three months; scholars' tickets, good for 40 rides in 30 days; and 55 trip tickets, good for 30 days, will be sold on the new basis for commutation fares.

Nova Scotia Tramways & Power Co.—The Nova Scotia Legislature was asked recently to pass an act authorizing the company to increase its fare to a flat rate of 7c. a trip, and to sell 4 tickets for 25c.

Regina Municipal Ry.—D. W. Houston, Superintendent, recommended recently that the fares charged on this railway should be raised, in the event of the proposition for the operation of one-man cars not going through. A bylaw to provide for the operation of such cars is to be submitted to the ratepayers at an early date; consequently the city commissioners have not taken any action on the suggestion to increase fares. The present fare schedule and that proposed is as follows:—

| | Present. | Proposed. |
|---|---|---|
| Cash . . | 5c. | 6c. |
| Unlimited tickets | 5 for 25c. | 9 for 50c. |
| Book tickets . | 21 for $1 | None |
| Labor (6 to 8 a.m.) | 8 for 25c. | None |
| Children . . | 10 for 25c. | 8 for 25c. |

With the present travel the suggested new fares would give an increased revenue of $1,000 a week.

Sarnia St. Ry.—A press report states that the Sarnia St. Ry. Co. has announced that it will make an early application to the Sarnia, Ont., City Council for authority to increase fares 6c. to 7c.

Woodstock, Thames Valley & Ingersoll Electric Ry.—The Board of Railway Commissioners passed order 29,620, May 12, approving this company's standard passenger tariff C.R.C. 1, effective May 24. The fare from Woodstock to Vareys, 3.05 miles, is 7c., and from Woodstock to Ingersoll, 10.20 miles, 25c. From Ingersoll to the park, 4.55 miles, the return fare is 20c.

## London Street Railway Fares and Wages.

The questions of an increased fare on the London, Ont., St. Ry., and of an increase of wages for the employes are bound up together, and have been under discussion from various points of view for months. Early in 1919 the city council passed a bylaw authorizing the company to collect an increased fare. Action to quash the bylaw was taken and in Oct., 1919, Chief Justice Falconbridge declared it invalid, holding that the city had no power to pass such a bylaw. The company appealed against this decision to the Court of Appeal, which gave judgment April 9, four of the five judges deciding in favor of reversing the decision quashing the bylaw. The bylaw authorized the company to sell 6 unlimited or 8 limited tickets for 25c. instead of 7 or 9 as formerly.

The city in an omnibus bill introduced in the Ontario Legislature at its present session, asked for authority to grant an increase of fares, but this is reported to have been dropped when the bill was before a committee. Be that as it may, the company's employes pressed their demands for increased wages, and the company expressed its willingness to meet this demand if it could increase its fares permanently. The men demanded an increase of wages from the present rate, ranging from 39c. to 44c. an hour to from 60c. to 65c. an hour, according to length of service, together with certain working conditions. These terms not being agreed to, the men went out on strike on April 30. On May 3, efforts having failed to bring the company and its employes together, the city council authorized the Mayor to appeal to the Ontario Railway and Municipal Board to operate the line. Members of the board arrived in London May 4 and decided to operate the line, the service being resumed May 6. The men returned to work at the old rates, but were promised that from any balance remaining after meeting operating costs and bond interest were met, an increase of wages would be granted. One of the features of the operation of the line by the board is that cars are being operated on Sundays, notwithstanding the fact that the city bylaw granting such permission has expired. The board had an audit made of the company's books so as to prepare a report on the situation for presentation to the city council, and on May 19 a press report states that the board has advised the council that additional revenue was necessary if the line was to continue in operation.

A press report of May 24 stated that the employes had agreed to accept an increase of 8c. an hour, based on the condition that the city allow the company to charge a cash fare of 5c. and sell 6 limited tickets for 25c.

Port Arthur Civic Ry.'s Future. — A press report states that Hydro Electric Power Commission of Ontario engineers were expected in Port Arthur, Ont., May 18 to value the Port Arthur Civic Ry. with a view to its being taken over and operated by the Commission.

Moncton Tramways, Electricity & Gas Co.—The New Brunswick Legislature has passed an act authorizing the City of Moncton to buy the electric lighting plant, and electric tramways in the city from the Moncton Tramways, Electricity & Gas Co.

# Electric Railway Projects, Construction, Betterments, Etc.

Calgary Municipal Ry.—The Calgary, Alta., city commissioners, a press report of May 7 states, decided not to endorse the proposal to extend the Burns Ave. car line further in East Calgary, on the ground that all available funds were exhausted, and that it would necessitate the passing of a bylaw. The estimated cost of the extension is $18,000. (April, pg. 202.)

The Cape Breton Electric Co., we are officially advised, expects to rebuild the power station at Dominion No. 4 so that it will serve as a car house for Glace Bay cars, or to build a new car house. This work is necessitated by the fire which destroyed the company's car house Mar. 6. (May, pg. 257.)

Fort William Electric Ry.—We are officially advised that half interlocking plants are being installed at the crossings of the Canadian National Rys. at Victoria Ave. and Franklin St., Fort William, Ont. The car barns destroyed by fire recently are being rebuilt, the contract having been let to Hancock & Co. We are also advised that the erection of a 45 x 18 ft. addition to the car barns, to be used as a storehouse, is contemplated. (April, pg. 202.)

London & Port Stanley Ry.—The London Railway Commission is reported to have authorized the purchase of a gravil pit property, estimated to provide 40,000 cubic yards of ballasting material.

A press report of May 12 stated that the building of a second track through St. Thomas, Ont., was expected to be completed early in June. This will give about four miles of what will be practically a double track line, not continuous, but including sidings at certain points and passing tracks along the line. It is also reported that it is proposed to consider the building of six miles of second track between Whites and Yarmouth in the near future. (May, pg. 257.)

Montreal & Eastern Counties Ry.—The Dominion Parliament has extended for five years the time within which the company may build lines from the northern limit of Chambly County to Sherbrooke, Que., and lines in the counties of Beauharnois, Chateauguay, Huntingdon and Napier. The company is a G.T.R. subsidiary, and with the other G.T.R. lines will pass under Dominion Government ownership. (Feb., pg. 81.)

New Brunswick Power Co.—A press report states that as soon as the company's electric railway can be extended from Fairville to Manchester, N.B., a through service will be operated from King St., St. John, to Manchester Corner, on the Manawagonish Road. An agreement between the company and the municipality is under consideration. (Mar., pg. 145.)

Quebec, Ry., Light & Power Co.—The extension of the Beauport line from the Canadian National Rys. tracks to the terminal just beyond Beauport Asylum, Quebec, is reported to have been opened for traffic. The Beauport line was completed as far as the C.N.R. tracks and put in operation Nov. 17, 1919, and construction of the extension opened recently was put in hand immediately thereafter. (May, pg. 257.)

We are officially advised that the company will start building half a mile of new track over the Laviguer bridge on the Dorchester line extension in June, and expects to finish it in August.

We were officially advised May 10 that negotiations were still pending in connection with the projected extension to Lorretteville.

Regina Municipal Ry.—A delegation representing the North Annex and Highland Park Ratepayers' Association is reported to have asked the Regina, Sask., City Council to extend the electric railway on Broad St., northerly for four blocks. The estimated cost is $5,500 or $6,500, according to the weight of rails used, and property owners are said to be ready to pay interest on the cost of construction and operation loss which might accrue. The matter was referred to the city commissioners for consideration. (Jan., pg. 34.)

Sandwich, Windsor & Amherstburg Ry. We are officially advised that nothing is being done by the Hydro Electric Power Commission of Ontario with regard to an extension of the railway in land from the Detroit River, as reported in the daily press.

Toronto Civic Ry.—The Ontario Legislature's private bills committee on Nov. 7 defeated the section of the City of Toronto's bill to give the city authority to issue debentures for $943,000 for the construction of the Mount Pleasant car line.

The city council had before it on May 10 a recommendation from the board of control to ask the ratepayers to vote on a bylaw to issue these debentures, at the municipal elections on Jan. 1, 1921. The council passed a resolution providing that as soon as the bill before the legislature is passed the proposed transportation commission shall be appointed, and that it be requested to proceed with the construction of the Mount Pleasant line with all possible despatch. April, pg. 203.)

Waterloo-Wellington Ry.—The Ontario Legislature's railway committee refused to pass the company's bill to enable it to extend its line from Bridgeport to Guelph, on the ground that it would interfere with the Hydro Electric Power Commission of Ontario's plans. (April, pg. 203.)

Winnipeg Electric Ry.—We are officially advised that it is proposed to remove half a mile of single track on Marion St., St. Boniface, extending from Rue de Meurons to the C.P.R., and in lieu of this to operate a bus line on Marion St. from the corner of Rue de Meurons to the stock yards, a distance of one mile. This service is being undertaken in lieu of electric car service on account of the company not being able to cross the railway tracks on Marion St. with a car line. The company has ordered 1½ ton chassis for the busses, which are being built in Winnipeg. They will each accommodate 20 passengers seated and 15 standing. (May, pg. 257.)

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**Postmens' Transportation in Toronto.** The further supplementary estimates for the year ended Mar. 31, 1920, submitted to the House of Commons recently, contained the following item:—Arrears due Toronto Ry., for conveyance of letter carriers, during fiscal years 1917-1918, and 1918-1919, $27,187.

The Calgary, Alta., City Commissioners on May 10 recommended the purchase of $1,146 worth of machinery for the car barns, and three 200 k.w. transformers. (April, pg. 202.)

## British Columbia Electric Railway Restored to Provincial Jurisdiction.

The Railway Act 1919, as passed by the Dominion Parliament, contained the following section:—

"6. The provisions of this act shall, with out limiting the effect of the last preceding section, extend and apply to,—

"(a) every railway company incorporated elsewhere than in Canada and owning, controlling, operating or running trains or rolling stock upon or over any line or lines of railway in Canada either owned, controlled, leased or operated by such company or companies, whether in either case such ownership, control, or operation is acquired by purchase, lease, agreement or by any other means whatsoever;

"(b) every railway company operating or running trains from any point in the United States to any point in Canada;

"(c) every railway or portion thereof, whether constructed under the authority of the Parliament of Canada or not, now or hereafter owned, controlled, leased, or operated by a company wholly or partly within the legislative authority of the Parliament of Canada, or by a company operating a railway wholly or partly within the legislative authority of the Parliament of Canada, whether such ownership, control, or first mentioned operation is acquired or exercised, by purchase, lease, agreement or other means whatsoever, and whether acquired or exercised under authority of the Parliament of Canada, or of the legislature of any province, or otherwise howsoever; and every railway or portion thereof, now or hereafter so owned, controlled, leased or operated shall be deemed and is hereby declared to be a work for the general advantage of Canada."

The effect of this section, which was an amendment of the previous act, was that the British Columbia Electric Ry. as a whole was brought under the Board of Railway Commissioners' jurisdiction, and that the commissioners, upon application granted increases of fares to the company, full details of which were given in Canadian Railway and Marine World for Dec., 1919, pg. 666. Another was to bring to an end the investigation into the British Columbia Electric Ry.'s affairs, by the Public Utilities Commissioner of British Columbia, who had been authorized by the Legislature to determine whether the temporary increase of fare granted by the City of Vancouver was justified, and to fix the fare for the future. The abolition of the B.C. Public Utilities Commission followed at the legislature's last session.

The Minister of Railways, Hon. J. D. Reid, introduced Bill 135, in the House of Commons, May 17, which was read a first time, as follows:—

"1. Section 6 of the Railway Act, 1919, chapter 68 of the statutes of 1919, is amended by adding thereto the following subsection:—

"'(2) The provisions of paragraph (c) of this section shall be deemed not to include or apply to any street railway, electric suburban railway or tramway constructed under the authority of a provincial legislature, and which has not been declared to be a work for the general advantage of Canada otherwise than by the provisions of the said paragraph.'"

The Minister in explaining the bill said: "Sec. 6 of the Railway Act, passed at the last session, provided that any rail-

way under provincial jurisdiction which was leased or operated by another road wholly or partly within the legislative authorit yof the Dominion Parliament should be regarded as a work for the general advantage of Canada and therefore subject to the jurisdiction of the Board of Railway Commissioners. This clause was inserted to cover the case of the Quebec Central Ry., which, being part of the C.P.R. system, was under provincial as well as Dominion jurisdiction. We found afterwards that the clause had been so worded as to have the effect of taking in street railway lines, electric suburan railways and tramways built under the authority of a provincial legislature. This bill proposes to place these electric lines again under the jurisdiction of the provincial government. If I read the main clause of the bill its purpose will be explained."

The effect which this bill will have apparently is that rates fixed by the Board of Railway Commissioners for B.C.E. Ry. lines, which are not definitely under its jurisdiction, through being operated under Dominion charters and declared to be works for the general advantage of Canada, will cease to be operative, and the fares fixed in the municipal charters under which the lines were built will again come into effect.

## Electric Railway Notes.

The Brantford, Ont., Railway Commission is reported to be considering the desirability of operating one-man cars on the municipal railway.

The Regina, Sask., City Council put a bylaw for the operation of one-man cars on the Regina Municipal Ry. through its initial stages, May 4. It will be voted on by the ratepayers at an early date.

The Brantford, Ont., Municipal Ry. Commission is, we are officially advised, considering one-man car operation, with the idea in view that in case any additional cars may be ordered this year, that type may answer the city's requirements.

A deputation representing the Toronto against the proposed purchase of one-street railway men's union waited on the board of control recently to protest man cars for Toronto Civic Ry. on the hackneyed ground that their use would slow up traffic and endanger the lives of passengers and pedestrians.

The Cape Breton Electric Co. expects to be in the market shortly for two or more passenger cars to replace those destroyed by fire at Glace Bay, N.S., in March. It is possible that some of the company's large steel cars may be diverted from city to suburban use, and safety cars bought for city service. The purchase of a new, or second hand, combination express car, line car and sweeper, is under consideration.

The Ontario Railway and Municipal Board advised the St. Thomas, Ont., city council recently that it was prepared to approve of the operation of one-man cars on the municipal railway there as soon as it was advised of the routes upon which they would be operated. A press report says the Board of Railway Commissioners has given the city authority to operate one-man cars on its line over certain crossings of steam railways in the city, upon the installation of semaphores and provision for the maintenance of watchmen. Another report states that seven of the city's cars have been converted for one man operation.

## Mainly About Electric Railway People.

J. M. Ahearn, heretofore Assistant Superintendent and Purchasing Agent, Ottawa Electric Ry., has been appointed Assistant Manager and Purchasing Agent.

F. D. Burpee, heretofore Superintendent, has been appointed Manager, Ottawa Electric Ry., Ottawa, Ont. He was born at Ottawa, Ont., Apr. 25, 1876, and commenced railway work in 1891 on District 4, Eastern Division, C.P.R., Ottawa, and transferred to Ottawa Electric Ry. service in 1893, since when he has been, to 1896, stenographer, 1896 to 1898, cashier and paymaster, 1898 to Aug., 1912, accountant, during which time he also acted as assistant to the Secretary-Treasurer, and to the Superintendent. In Aug., 1912, on the resignation of J. E. Hutcheson, to become General Manager Montreal Tramways Co.'s service, he was appointed Superintendent. He enlisted in the 207th Battalion, C.E.F., in Feb. 1916,

Captain F. D. Burpee,
Manager, Ottawa Electric Railway.

and assisted in recruiting the battalion, and sailed for England as second in command in May, 1917, with the rank of Captain, where his battalion was eventually broken up. He then transferred to the Canadian Railway Troops, reverted to the rank of lieutenant and went to France July 7, 1917, and was engaged at points all over the British front. He returned to Canada early in 1919, and resumed his duties as Superintendent, Ottawa Electric Ry., in March of that year.

J. P. Daugherty, Manager, St. Thomas, Ont., Municipal Ry. for seven years, has resigned.

Capt. F. R. Glover, General Executive Assistant, British Columbia Electric Ry., is recovering from a broken knee cap.

John Patterson,—A life size picture of the late John Patterson was unveiled at the Dominion Power & Transmission Co.'s station in Hamilton, Ont., recently, by the company's President. Mr. Patterson was the principal promotor of the electric power development and electric railway lines in Hamilton and vicinity, now owned by the company.

A. J. Tobin, heretofore Chief Inspector, Car Service Department, Ottawa Electric Ry., has been appointed Superintendent. He has been in the company's service for over 25 years, originally as a conductor.

W. N. Warburton, Manager, London & Lake Erie Transportation Co., now in liquidation, the line having been dismantled, died at London, Ont., May 27, aged 65, after a long illness.

## Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:—

| | Mar. 1920 | Mar. 1919 | 9 mos. to Mar. 31, 1920 | 9 mos. to Mar. 31, 1919 |
|---|---|---|---|---|
| Gross | $761,182 | $649,120 | $6,557,837 | $5,390,119 |
| Expenses | 519,487 | 457,600 | 4,602,143 | 3,990,329 |
| Net | 241,695 | 191,520 | 1,955,694 | 1,399,790 |

Cape Breton Electric Co:—

| | Mar. 1920 | Mar. 1919 | 3 mos. to Mar. 31, 1920 | 3 mos. to Mar. 31, 1919 |
|---|---|---|---|---|
| Gross | $44,751 | 42,924 | $138,947 | $138,078 |
| Expenses | 44,141 | 32,559 | 127,700 | 103,415 |
| Net | 610 | 10,365 | 11,247 | 34,663 |

Niagara Falls, Wesley Park & Clifton Tramway Co.—We are officially advised that the City of Niagara Falls, Ont., has not taken any further action in the direction of taking over the line in the city, and nothing has been done, so far as the company is aware, by the Ontario Railway and Municipal Board, in arranging for an arbitration as to the price to be paid for the property. The line is still being operated by the Niagara, St. Cathines & Toronto Ry., which owns it.

Ottawa Electric Ry.—Under the provisions of a mortgage trust dated June 29, 1897, 15 debentures, of $1,000 each, have been drawn for redemption, and will be paid with current coupons for interest thereon, July 5, at Ottawa, after which date interest on the debentures ceases.

St. Thomas Municipal Ry.—A press report states that the deficit on operation for April was $588.60, the smallest for some years. The number of passengers carried was 45,442, against 39,636 for April, 1919.

Toronto Ry., Toronto & York Radial Ry. and allied companies:—

| | Mar. 1920 | Mar. 1919 | 3 mos. to Mar. 31, 1920 | 3 mos. to Mar. 31, 1919 |
|---|---|---|---|---|
| Gross | $1,255,668 | $1,083,285 | $3,499,871 | $3,205,922 |
| Expenses | 794,212 | 647,053 | 2,299,684 | 1,902,546 |
| Net | 461,456 | 436,232 | 1,200,187 | 1,303,376 |

Winnipeg Electric Ry. and allied companies:—

| | Mar. 1920 | Mar. 1919 | 3 mos. to Mar. 31, 1920 | 3 mos. to Mar. 31, 1919 |
|---|---|---|---|---|
| Gross | $456,915 | $384,937 | $1,400,625 | $1,146,638 |
| Expenses | 353,234 | 285,040 | 1,046,470 | 839,964 |
| Net | 103,681 | 99,897 | 354,155 | 306,674 |

Surplus, after allowing for fixed charges, for March, $37,727.

Winnipeg Electric Ry. Co.—At a meeting of shareholders in Winnipeg, May 3, a resolution was passed authorizing the issue of $3,000,000 of new preferred stock to the funded floating debt. Subscribers will be given one share of common stock as a bonus, with every five shares of preferred stock allotted.

New Brunswick Electric Railway Taxation.—The New Brunswick Legislature has passed an act imposing taxes on certain incorporated companies and associations, as follows:—"Upon all street railway companies operating their lines within the province, not less than $50, nor more than $100 for each mile operated by any such company, in the discretion of the Lieutenant Governor in council."

# Electric Railway Employes' Wages, Working Conditions, Etc.

**Brantford Municipal Ry.** employes asked recently for increased wages. The rate now paid to motormen and conductors is for first year, 39c. an hour; second year men, 41c., and third year, 43c., this being the maximum. The increase asked for is approximately 50%. The men now work nine hours a day.

**Cape Breton Electric Co.**—C. C. Curtis issued the following bulletin to trainmen, all divisions, May 4:—Effective May 1, 1920, wages of motormen and conductors, all divisions, will be as follows: 1st six months, 40c.; 2nd six months, 42c.; 2nd year, 44c.; 3rd and 4th years, 46c.; 5th and 6th years, 48c.; 7th year and thereafter, 50c. Every effort is being made to pay good wages in all departments, and I wish to again impress upon each and every one of you, that the man who does his work faithfully, loyally, conscientiously, and without constant thought of the clock and pay envelope, is going to get, under this management, just a little better treatment than the man who is always complaining, asking for more money and less work, and helping to increase the high cost of living. The one simple way in which each individual can help to reduce high costs, is to work a little harder and more intelligently, spend more carefully and save consistently. Application has been made for a 7½c. tram fare, but even when this is obtained gross earnings will hardly do more than pay daily operating expenses and taxes. Matters are really very serious and we are depending upon each and every one of you to co-operate in every way so as to promote the best interests of the company, the public and yourself." The wages paid heretofore ranged from 37c. to 42c.

**Guelph Radial Ry.**—We are officially advised that wages have been advanced on this municipally owned line. The old and new rates per hour are as follows:—

| | Old. | New. |
|---|---|---|
| Motormen and conductors— | | |
| First year . . | 38c. | 43c. |
| Second year . . | 38c. | 43c. |
| Third year . . | 41c. | 45c. |
| Barn men . | 42c. | 45c. |
| Foremen . . | 42c. | 47½c. |
| Track men . . | ..... | 40c. |
| Track foreman (a week) ..... | $20 | $25 |

**Hamilton St. Ry.**—A board of conciliation, consisting of Judge C. G. Snider, Chairman; G. S. Kerr, representing the company, and F. Bancroft, representing the employes, commenced its sittings in Hamilton, Ont., May 11, to deal with matters in dispute between the company and its employes respecting wages, working conditions, etc.

**International Ry.**—A press report states that employes of the International Ry., Buffalo, N.Y., which operates the Niagara Falls Park & Island Ry. in Canada, are asking for an increase of wages ranging from 83c. to 88c. an hour. The men now work a 9 hour day and are paid time and a half for overtime. It is further reported that the company recently refused to grant an 8-hour day, but offered an increase of wages with a maximum of 60c. an hour.

**London & Port Stanley Ry.**—The board of conciliation appointed on the London Railway Commission refused to accede to the demands of the men for a maximum rate of 65c. an hour, consisting of Judge C. G. Snider, Hamilton, Ont., chairman; J. M. Campbell, Kingston, Ont., representing the Commission, and B. W. Bennett, Sarnia, Ont., representing the men, sat in London, Ont., May 4 to 6, and presented a majority report to the Labor Department in which the following rates of pay per hour were recommended:—

| | |
|---|---|
| Passengers and freight conductors and motormen:— | |
| 1st year . . | 46c. |
| 2nd year . . | 48c. |
| 3rd year . . | 50c. |
| 4th year . . | 52c. |
| Brakemen, 1st year | 45c. |
| 2nd year . . | 43c. |

In each case time and a half for overtime was awarded. These rates were those offered by the commission and rejected by the men prior to the formation of the board of conciliation. At a meeting of the commission May 13, it was decided to uphold the award. B. W. Bennett, representing the men, made a minority report, in which he recommended an increase of 15c. an hour over the old rates, to date from Feb. 1. The men refused to accept the majority award and went on strike May 14. A partial service was put in operation at once, after some repairs had been done to the overhead work, which was stated to have been maliciously damaged. The management improved the temporary service daily until on May 23, when it was nearly normal again, the strike collapsed and the man returned to work on the terms of the board of conciliation's award, a press report stating that an understanding was arrived at that if the management finds it favorable to pay higher wages in the future it will be done.

**Montreal Tramways Co.**—As stated in Canadian Railway and Marine World for May, pg. 256, the company's conductors and motormen had applied for very large increases in wages, the present rates and those asked being as follows per hour:—

| | Present. | Asked. |
|---|---|---|
| First year . | 37c. | ..... |
| First 3 months | ..... | 70c. |
| Next 9 months | ..... | 73c. |
| Second year | 40c. | ..... |
| Third year . | 44c. | ..... |
| After third year | 48c. | ..... |

The men also asked an 8-hour day, and that no overtime be worked. The company on May 7 declined to accede to the demands, informing the men's representatives that the allowances made by the Montreal Tramways Commission did not permit of any increase of wages, and that the revenue at present is only just sufficient to meet the present expenses.

On the same day, some of the company's officials waited on the Montreal Tramway Commission to discuss the matter, and were advised that in 1918 the men were given increases totalling $750,000, and in 1918 increases totally $1,250,000, and now they are asking for increases totalling $3,500,000. This amount could not be provided unless by increasing fares by at least 2c., and the commission was determined not to increase the fares this year. The commissioners further stated that it might be possible to provide funds for a bonus, but it would fall far short of the amount asked for by the men.

On May 10, another delegation waited on the commission and was informed what amount of bonus might be available (the amount of which, however, was not made public), and was further advised that the commission had not changed its attitude as to increasing fares this year. A press report stated that the amount offered as a bonus was approximately $500,000, while another report stated that it was between $250,000 and $300,000, and was to be distributed between the shopmen, the commission considering that the men on the cars were sufficiently paid. The commission is also reported to have offered an insurance and pension plan on the following basis:—A life insurance policy for $500, to be increased to $1,000 at the end of 5 years' service, and a pension at the age of 60, of 2% of wages earned, multiplied by the number of years' service. These offers were declined by the men on May 17, when it was decided to apply for a board of conciliation.

The Montreal Tramways Commission commenced on May 17 the publication of a series of full page advertisements, addressed to the Montreal public, giving reasons why the employes' demands could not be granted.

**Niagara, St. Catharines & Toronto Ry.** Disputes having been developed between the company and its employes, an ultimatum was presented to the management April 29, threatening an immediate strike unless the alleged grievances were redressed. E. W. Oliver, General Superintendent, intimated that the company was willing to submit the differences to arbitration. This was agreed to and a board consisting of County Judge Campbell, chiarman, W. J. Burgoyne, St. Catharines, representing the men, and C. G. McGhie, representing the company, was agreed to, and began its sittings in St. Catharines, Ont., May 5.

**Nova Scotia Tramways & Power Co.**—We are officially advised that a conditional increase of wages has been granted to all the company's employes. The maximum for motormen or conductors is 52c. an hour, and for operators on one-man cars 5c. an hour extra. The pay of operators, motormen and conductors is to be graduated according to length of service. The increases of pay will, it is stated, add $100,000 a year to the company's pay roll. The increases had not gone into effect when we were advised on May 3, but are said to be contingent upon the granting of authority by the Nova Scotia Legislature to the company to charge increased fares.

**Ottawa Electric Ry.**—A board of conciliation has been appointed by the Labor Department to arbitrate between the Ottawa Electric Ry. and its employes as to wages and working conditions. We are advised that G. D. Kelley is the company's representative, and A. E. Fripp, K.C., M.P., is the men's representative.

**Quebec Ry., Light & Power Co.**—The following joint schedule of rates, rules and conditions, governing employment of trainmen on the Montmorency Division was put in effect Mar. 16. Back time from Nov. 1, 1919, to Mar. 15, 1920, was paid on the basis of 9 hours a day on rates on this schedule, for employes in steam train service, and on the basis of 10 hours a day for employes in electric train service. The following table gives the new rates per day, and the old rates per hour, with a minimum of 10 hours:

| | New per day. | Old per hour. |
|---|---|---|
| Way freight, steam or electric— | | |
| Conductors . . | $5.40 | 48c. |
| Engineers or drivers | 5.55 | 49c |
| Experienced brakemen | 4.00 | 36c |
| Fireman . . | 4.00 | 36c |
| Passenger and work steam trains— | | |
| Conductors . . | 5.10 | 45c |
| Engineers . . | 5.55 | 49c |
| Experienced brakemen | 3.70 | 33½c |
| Firemen . . | 3.70 | 33½c |
| Passenger and work electric loco. train— | | |
| Conductors . . | 5.10 | 45c |
| Drivers . . | 5.10 | 45c |
| Experienced brakemen | 3.70 | 33½c |
| Trolleymen . . | 3.70 | 33½c |

| | | |
|---|---|---|
| Electric trains— | | |
| Conductors over 1 year in service | 5.00 | 42c |
| Conductors less than 1 year in service | 4.60 | 39c |
| Drivers | 5.00 | 42c |
| Experienced brakemen | 3.45 | 30½c |

One hundred miles or less in steam or electric locomotive service, or 8 consecutive hours or less in service (exclusive of meal hour) constitute a day. Overtime miles or hours to be paid pro rata.

One hundred miles or less in electric train service, or 8 hours or less in service, constitute a day. Overtime miles or hours to be paid pro rata.

**Quebec Railway, Light & Power Co.**—A Quebec press dispatch says that the company has recognized the Quebec National Fraternity of Street Railway Employes and has agreed not to employ conductors and motormen who are not members of it. It also says that wages on the city division, which theretofore ranged from 31c. to 38c. an hour, have been advanced to from 34c. to 48c. an hour, according to length of service.

**Sandwich, Windsor & Amherstburg Ry.** The employes of the Sandwich, Windsor & Amherstburg Ry., operating in Windsor and adjacent municipalities, which was taken over by the Hydro Electric Power Commission of Ontario, Mar. 31, were reported May 18 to be agitating for an increase of wages. The present scale ranges from 50c. to 60c. an hour, according to length of service.

**Sarnia St. Ry.**—A press report states that the employes have asked for a 50% increase of wages, and for an 8-hour day and time and a half for overtime. The men now work a 10-hour day, the average wages being stated to be $4 a day.

The Sarnia City Council is reported to have approved, May 17, of the following increased fare schedule for Sarnia St. Ry.:—Cash fare, 7c.; four tickets to be sold for 25c.; workingmen's tickets, 6 for 25c.; children's and beach tickets to remain as heretofore. Notice was given of a bylaw to confirm the new rates. The company will now, it is said, increase the wages of its men, who were asking for increases totalling $12,000 a year, which they were advised could not be granted without an increase of fares.

**Toronto Ry.**—The employes have presented a draft of a new wage agreement which they ask be put into effect on the expiry of the present agreement on June 15. The rate of wages asked for conductors and motormen is a flat one of 85c. an hour, the present rate being 52½c. for the first three months and 55c. for the next 9 months.

**Winnipeg Electric Ry.**—We are officially advised that the board of conciliation appointed to deal with the dispute as to wages, etc., between the company and its employes consists of Judge R. H. Myers, Winnipeg, chairman; C. E. Dafoe, Winnipeg, representing the company, and R. S. Ward, Winnipeg, representing the men.

The draft of the new agreement which the men asked the company to adopt was submitted April 8, and was proposed to run from May 1, 1920, to April 30, 1921. The proposed schedule of wages for motormen and conductors, compared with the schedule under the old agreement is as follows per hour:—

| | Old | | Proposed | |
|---|---|---|---|---|
| | Week-days | Sundays | Week-days | Sundays |
| First 6 months | 46c. | 51c. | 80c. | 90c. |
| Second 6 months | 49c. | 54c. | 85c. | 95c. |
| After 1 year | 52c. | 57c. | 90c. | $1 |
| After 2nd year | 55c. | 60c. | ..... | ..... |

The proposed schedule also included the wages asked for all other employes, the increases asked for being on approximately the same scale. Some notable instances are:—

| | Old scale. | Proposed Scale. |
|---|---|---|
| Machinists | 70c. | $1.00 |
| Machinists' helpers | 43c. | 74½c. |
| Wheelmen | 53c. | 82½c. |
| Blacksmiths | 70c. | $1.00 |
| Car Carpenters | 65c. | $1.00 |
| Car inspectors | 49c. to 52c. | 85c. |
| Car cleaners | 40c. | 75c. |
| Track laborers | 40c. | 75c. |

A. W. McLimont, Vice President, addressed the following letter to the Secretary of the Employes' Union, an receipt of the request for advances:—"I have carefully studied the draft agreement which you submitted intended to cover wages and working conditions of certain employes of this company for the ensuing year. Your demands are so extreme that the company is deprived of even being able to consider them as a basis for negotiations, and the amount involved (approximately $1,250,000) is so large that were it granted the railway fares would necessarily have to be increased to such an extent that many citizens who depend upon the service now supplied to them by this company would be deprived of it. As the revenue now derived would not provide the additional money, it must be apparent to you that, conceding any further wages demands must add to the fare the general public has to pay, and as the public is directly interested, the whole matter will have to be dealt with by the proper authorities."

## Proposal to Acquire Windsor, Essex & Lake Shore Rapid Ry.

Municipal authorities in the municipalities served by the Windsor, Essex & Lake Shore Rapid Ry., in Western Ontario, have been supplied with copies of a blank resolution to be passed by municipal councils, as follows:—

Copy of resolution of the municipality of——

Moved by....., second by.....

That the Hydro Electric Power Commission of Ontario be requested to approach the said railway on behalf of the municipalities through which it operates. And (if the company indicates its willingness to sell) that the said commission be also requested to supply the municipalities with a report showing the estimated cost of the line equipment ready for satisfactory service, the probable future earnings and expenses. And that copies of this resolution be sent to the Secretary of the said commission and company respectively, as well as a request to the councils of the other municipalities interested, asking them to take similar action.

.....Reeve or Mayor.

I hereby certify the above to be a true copy of a resolution passed in open council by the .....of .....

.....Clerk.

Dated..... 1920.

**Dominion Power & Transmission Co.'s Properties.**—A press report of May 21 stated that the Hydro Electric Power Commission of Ontario had secured an option on the Hamilton Radial Electric Ry. from Hamilton to Oakville, Ont. E. P. Coleman, General Manager, Dominion Power & Transmission Co., is reported to have said, on the same day, that the situation as to the negotiations between the company and the commission was in no way changed. The commission's engineers had valued the company's plant and railways, and there were negotiations as to price. It was highly improbable that the commission would secure

## The Hydro Electric Power Commission of Ontario's Proposed Electric Railways.

Ontario's Prime Minister, in addressing a delegation from municipalities interested in the building of the projected electric railways east and west of Toronto, recently, is reported to have said that as soon as the government is convinced that there will be no unnecessary duplication, and that the financial situation is such that the enterprises would not be unduly loaded up, and that labor and equipment are not so costly as at present, the government will be prepared to guarantee the bonds for construction. He counselled caution in regard to the situation.

Toronto City Council on May 10 decided to ask the Hydro Electric Power Commission to go ahead with the construction of the Toronto-Bowmanville line, independently of a provincial guarantee of bonds. Pickering Tp. is reported to have passed a similar resolution. This would involve the purchase of the uncompleted Toronto Eastern Ry. from the Canadian National Rys.

It is, however, to the lines west of Toronto that attention is being more particularly directed at present. Bylaws for the construction of a line from Toronto via Port Credit, Guelph and Stratford to London; for a line from Port Credit to Hamilton; a line from Hamilton via Guelph to Elmira, and for lines in the Niagara peninsula have been passed, and of these the commission desires to proceed with the construction of the Toronto-Port Credit section, 15 miles, and from Port Credit to St. Catharines, 60 miles, which with the Toronto Eastern Ry. would give a continuous line from Bowmanville to St. Catharines, 118½ miles.

Questions in the Ontario Legislature on May 7 elicited the fact that the commission had secured authority by order in council, or otherwise, to proceed with the construction of an electric railway from Port Credit through St. Catharines; that municipal bonds had been actually issued to finance construction; that the government had guaranteed the bonds and otherwise endorsed the financing of the line, and that the right of way was being secured. A press report states that an issue of bonds for $11,360,000 was authorized Aug. 8, 1919, and that of these $1,050,000 worth had been endorsed by the present government.

In order to provide for the construction of the line from Toronto to Port Credit, as part of the line to St. Catharines, the municipalities have passed resolutions of agreement. The right of way for the line is reported to have been bought.

**Niagara, St. Catharines & Toronto Ry.'s future.**—In connection with suggestions that certain sections of the Canadian National Ry. and the Grand Trunk Ry. be taken over by the Hydro Electric Power Commission of Ontario and electrified, the question of the purchase of the Niagara, St. Catharines & Toronto Ry. and its incorporation in the commission's Niagara peninsula plans has been discussed. Some conferences between Sir Adam Beck and the Minister of Railways have taken place at Ottawa, and it is reported that the Dominion Govment is of opinion that it would be poor business policy to get rid of any of its lines that are paying.

# Marine Department

## Canadian Government Merchant Marine, Ltd. Annual Report.

The Canadian Government Merchant Marine Ltd. directors' first annual report for the calendar year 1919 has been issued over the signature of D. B. Hanna, President, addressed to the shareholders, as follows:—

**Inception.**—Early in 1918 the Dominion Government, owing to the serious loss of world tonnage, realized the imperative need of Canada creating, owning and operating a strong merchant marine of her own. Accordingly orders were placed with shipbuilding firms throughout Canada for the construction of steel cargo ships. The total tonnage contracted for amounts to 380,140 d.w. tons, of the following standard type ships:—

| Type | Tonnage | No. ordered |
|---|---|---|
| 1 | 10,800 | 2 |
| 2 | 8,300 | 25 |
| 3 | 5,100 | 8 |
| 4 | 4,500 | 8 |
| 5 | 3,400-3,900 | 17 |
| 6 | 2,800 | 3 |
| | | 63 |

These ships were intended primarily to co-operate with British shipping in supplying the necessities of war, and in times of peace to provide the means of carrying abroad the products of Canada's farms, forests, mines and factories, without which Canada could not hope to take full advantage of the opportunity of expanding her export trade.

**Ships Delivered.**—There were delivered prior to Dec. 31, nineteen of these ships. The majority of the balance will be delivered during 1920.

**Terms of Transfer.**—An order in council passed Mar. 16, 1920, provides for all of the ships on completion being turned over to Canadian Government Merchant Marine Ltd. for operation. The arrangement is generally that each ship on completion will be sold to a separate ship company, bearing similar name to that of the vessel, such as "Canadian Voyageur Ltd.," etc., the Government to receive in payment therefor demand notes representing the cost price of the ship bearing interest at 5½% a year secured by mortgage on the ship, and all of the issued capital stock of the said company. The stock of the separate company, known as the owning company, is in turn exchanged by the government for an equal amount of stock of the Canadian Government Merchant Marine Ltd., which is held by the Minister of Finance, the stock of the owning companies being held by Canadian Government Merchant Marine Ltd.

**The Result of Operations** for the first year ended Dec. 31, 1919, is as follows, viz., from Mar. 2 to Dec. 31.

**Closed Voyages.**

| | | |
|---|---|---|
| Revenue from ships | | $2,770,049.09 |
| Other revenue: | | |
| Commission and agency fee on landing of s.s. Juil | $ 869.66 | |
| Interest . . | 8,715.23 | |
| | | 9,584.89 |
| Total revenue | | $2,779,633.98 |
| Expenses: | | |
| Operation of ships | $1,621,999.46 | |
| Operation of wharf | 36,475.91 | |
| General expenses: | | |
| Office salaries | $41,013.44 | |
| Printing and Stationery. . | 6,825.15 | |
| Advertising ... | 2,740.10 | |
| Cables, telegrams and telephones .. | 3,404.95 | |
| Miscellaneous.. | 9,612.78 | |
| Loss on exchange .... | 794.81 | |
| | | 64,391.23 |
| | | 1,722,866.60 |
| Operating profit closed voyages | | $1,056,767.38 |

**Open Voyages.**

| | | |
|---|---|---|
| Balance open voyages accounts . . | $415,724.92 | |
| Complete statement of disbursements, and operating expenses on account of these voyages has not been received, but it is estimated the result will show a net profit of approximately | | $ 350,000.00 |
| Total profit for period | | $1,406,767.38 |

**Rates.**—During the year, opportunities offered for taking advantage of some very profitable voyages, but as this would have taken the ships out of the Canadian trade, it was considered more important to develop Canadian trade by keeping them in service to and from Canada, at a reasonable profit, rather than to take advantage of higher rates and have some of the ships trading between foreign ports. It should be borne in mind that the company's ships were in service for a portion of the year only—the first voyage being made by the Canadian Voyageur in Mar., 1919. At this time the United States Shipping Board had become a factor in rate making, and the high ocean rates prevailing previously were considerably reduced. In view of this, the results shown may be considered as highly satisfactory.

**Trade Routes.**—Regular sailings have been established to London, Liverpool and Glasgow; to South America, calling at Pernambuco, Bahai, Rio de Janeiro and Buenos Ayres; and to the West Indies, calling at Havana, Kingston, Trinidad, Barbadoes and Demerara, etc. Sailings have also been made to Bordeaux and Le Havre. In all 47 trips were made during 1919, as follows:—To the West Indies; 23; South America, 3; United Kingdom from Atlantic ports, 11; United Kingdom from Pacific ports via Panama Canal, 3; French ports, 2; Newfoundland, 5. Of the total voyages only 28 were completed in time for the accounts to be closed before Dec. 31. Further trade routes are being established, including regular sailings to Australia and New Zealand, and additional services are in contemplation, which will be inaugurated as further ships are delivered by the builders.

**Commodities.**—The value which the merchant marine has been to the Canadian trade is best evidenced by the list of some of the commodities carried during the year, as follows:—Exports: Wheat, flour, grain, hay, lumber, wood pulp, pulp board, paper, dressed meats, canned goods, fish, groceries, confectionery, cement, rubber goods, hardware, furniture, automobiles, agricultural machinery, steel billets, steel ship plates, etc. Imports: Manufactured articles, sugar, seeds, dye stuffs, rice, wool, hides, cotton goods, dry goods, tea, coffee, etc.

**Insurance.**—Under an insurance contract made by your directors, all ships are fully covered by insurance at very favorable rates and covers.

**Accidents.**—The only serious difficulty encountered by your ships was in the case of the Canadian Recruit and the Canadian Spinner. These ships sailed from Montreal in clear weather on Dec. 8, 1919, but after leaving Quebec met with very bad weather, and both ships became entangled in ice fields. The Canadian Recruit, after having her steering gear torn away by the ice, got out of control, and was stranded on Vache Reef, at the mouth of the Saguenay River, on Dec. 20. The ship is still lying there, and the amount of damage cannot be ascertained until the river is free from ice. Any loss is fully covered under our insurance contract. The Canadian Spinner had a most perilous trip of three weeks down the river, constantly in danger from the ice. The government icebreaker Montcalm, which was sent to rescue her, succeeded, after much difficulty, in reaching her and escorted her safely into dock at Halifax on Jan. 15, 1920, no serious damage having resulted.

**Co-operation with Canadian National Rys.**—The fleet of the merchant marine forms a most important ally to the national system of railways, and enables the railway to obtain large through shipments of freight to Atlantic and Pacific ports which would be lost to the national system if it were not for the steamship connections of the Canadian Government Merchant Marine Ltd.

**Prospects.**—In view of the difficulties necessarily involved in establishing such a business, and the extraordinary expenses incurred in pioneering new routes, the result for the first year is considered satisfactory. Your directors look forward with confidence, notwithstanding increasing competition and decreasing rates, to a year of progress in 1920. Having regard, however, to the fact that all of your company's ships have been built since the war began, the cost of construction has been much higher than prevailed before hostilities, so that the interest, depreciation and insurance expenses on your ships are much higher than obtains on those of your competitors, whose fleets, even after taking into

### Dominion Marine Association.

**President**, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

**First Vice President**, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

**Second Vice President**, A. A. Larocque, President, Sincennes - McNaughton Line, Montreal.

**Executive Committee**, E. H. Beazley, Union Steamship Co. of British Columbia, Vancouver; W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

**General Counsel**, Francis King, M.A., Kingston, Ont.

**Official Organ**, Canadian Railway and Marine World, Toronto.

consideration their new tonnage, would not nearly equal per ton deadweight the cost of the Canadian Government Merchant Marine Ltd. fleet. Your ships will also be competing on some trades against ships carrying foreign crews. It will be seen, therefore, that while a satisfactory business is being done, and much new trade developed, large profits should not be looked for.

**Management.**—Your directors are pleased to be able to say that the management of your ships is entirely in the hands of Canadians. All of the officers of the boats are British, and 80% of them Canadian. The organization of the company has entailed heavy work on the part of the company's officers and staff. To them the board wish to express their thanks for the loyal and efficient services rendered throughout the year.

**Balance Sheet, Dec. 31, 1919.**

ASSETS.

| | | |
|---|---|---|
| Current assets: | | |
| Cash in banks and on hand | | $ 432,476.39 |
| Dominion of Canada, Victory Loan, 1919 | | 500,000.00 |
| Accounts receivable | | 502,155.18 |
| Advances to captains, crews and agents | | 23,270.88 |
| Insurance claims, estimated amount recoverable | | 24,893.35 |
| Interest receivable accrued | | 4,583.33 |
| Inventories of stores and supplies | | 1,959.71 |
| | | $1,489,338.84 |
| Insurance unexpired | | 505,284.27 |
| Fixed assets: | | |
| Office furniture | $7,611.10 | |
| Automobile | 890.93 | |
| | | 8,502.03 |
| | | $2,003,125.14 |

LIABILITIES.

| | |
|---|---|
| Accounts payable | $ 530,632.84 |
| Balances of uncompleted voyages | 415,724.92 |
| Surplus, profit for period from Mar. 2 to Dec. 31, 1919 | 1,056,767.38 |
| Contingent liabilities, none ascertained | |
| | $2,003,125.14 |

The directors are: D. B. Hanna, President, Toronto; A. J. Mitchell, Vice President, Toronto; E. R. Wood, Toronto; R. Hobson, Hamilton; Major G. A. Bell, Ottawa; Sir Hormisdas Laporte, Montreal; A. P. Barnhill, St. John, N.B.; Thos. Cantley, New Glasgow, N.S.

The officials are: R. C. Vaughan, Assistant to President, Toronto; R. P. Ormsby, Secretary, Toronto; C. E. Friend, Comptroller, Toronto; H. G. Foreman, Assistant Treasurer, Toronto; R. B. Teakle, Manager, Montreal; Wm. Phillips, European Manager, London, Eng.; H. Milburne, Asst. to Manager, Montreal; I. J. Tait, Superintending Engineer, Montreal; D. O. Wood, Traffic Mgr. Exp. and Imp. Dept., Toronto; W. A. Cunningham, Exp. and Imp. Frt. Agent, Montreal; Geo. Bunting, General Agent, Toronto; F. A. Young, General Agent, New York, N.Y.; B. C. Keeley, General Agent, Vancouver, B.C.

**Panama Canal Tolls on British Ships.** A Washington, D.C., dispatch states that the British Embassy there has announced that it is authorized to deny reports that the British Government is rebating to British ships the tolls paid for passage through the Panama Canal, it only paying such tolls in cases where it has ships on time charter.

**Pacific Coast Tide Tables.**—The Naval Service Department's Tidal and Current Survey has issued tide tables for the Canadian Pacific Coast for 1920, including Fuca Strait, Georgia Strait, and the northern coast, with data for slack water in the navigable passes and narrows, and information on currents. It will be mailed free, on request to the Tidal and Current Survey, Naval Service Department, Ottawa.

## Canadian Pacific Ocean Services, Ltd., Pacific Service.

W. T. Marlow, General Freight Agent, Canadian Pacific Ocean Services, has given the following particulars regarding the sailings of the company's ships from British Columbia to the Orient:—

Up to recently we had a very large movement of coolies returning from France to China to take care of, which movement lasted during the latter half of 1919, and throughout the early part of this year. This transportation has been completed and the space that was utilized for their accommodation is now available for commercial cargo. There is no congestion at Vancouver, and space is available for all cargo offering from Canada; in fact, to supply the cargo required, we have to book largely from the United States market. At present we maintain three sailings monthly with the following ships:—

Empress of Russia, Yokohama, Kobe, Nagasaki, Shanghai.

Empress of Asia, Hong Kong and Manila.

Empress of Japan, Yokohama, Kobe, Nagasaki, Shanghai, and Hong Kong.

Monteagle, Yokohama, Kobe, Moji (Japan), Shanghai and Hong Kong.

Methven, Yokohama, Kobe, Shanghai, Hong Kong, and Singapore.

This service will be augmented by the addition of the Mattawa, which will leave England shortly via the Suez for the Orient, and should arrive in Vancouver in time to load from that port, June 28. This ship will make the same ports of call as the Methven in the Orient.

In the development of the trans-Pacific trade, we are confining ourselves exclusively to our regular ports of call, as our present arrangements admit our acceptance of shipments for interior points in China and Japan, as well as outports in Borneo, Celebes, Ceylon, Formosa, French Indo-China, India, Java, Korea, Manchuria, Phillipines, New Guinea, Siam, Sumatra, Straits Settlements, Siberia, etc. Through bills of lading are issued to such ports from any point in Canada or the United States by the C.P.R.

## Proposal for Government Supervision of Steamship Companies.

J. E. Armstrong, M.P. for East Lambton, Ont., gave notice recently that he would move in the House of Commons as follows:—"That, in the opinion of this house, the recommendations set forth in the final report of the Royal Commission on the Natural Resources, Trade and Legislation of certain portions of His Majesty's Dominions, and presented to both Houses of Parliament by command of His Majesty, in Mar., 1917, showing that it is not desirable that the operations of the steamship companies carrying passengers and freight between the Dominion of Canada and the United Kingdom should remain longer without some measure of government supervision, should be given effect; and that this government should take immediate steps to assist the Imperial Government in bringing about government control of the ocean carriers doing business (or, from time to time, doing business) between ports in the United Kingdom and ports in the Dominion of Canada, and that a permanent commission representing all parts of the Empire be established, which shall be invested with wide powers relative to transportation on the high seas; such powers, as far as possible, to be similar or analogous to those which have been conferred in Canada and in other Dominions upon permanent commissioners charged with the supervision and control of railway and steamship rates and their methods and conditions of operation."

On the order for the motion being reached in the House of Commons May 5, Mr. Armstrong asked if the acting Prime Minister was prepared to accept it. Sir Geo. Foster replied: "No, I am afraid not. I would advise my friend to drop it. But if he wishes to make any remarks in reference to it, he may let it stand and I am prepared to hear what he has to say." Mr. Armstrong then said that under the circumstances he would drop it.

## Is There a Ship Brokers' Combine in Winnipeg?

Lt.-Col. C. W. Peck, V.C., M.P. for Skeena, B.C., asked the following questions in the House of Commons May 5: Is the Government aware of any combination of vessel brokers in the Winnipeg Grain Exchange formed since 1914? Was this combination in the nature of pooling their interests? Was such pool recognized by the Canadian Wheat Board and did such board authorize its continuance and recognize it as a proper and reasonable organization for such a purpose? Did the government aid such pool? Who were the members of the Winnipeg Grain Exchange who compose this combination or pool? Was the present chairman of the Canadian Wheat Board or his immediate business associates connected with the combination? Who were the vessel brokers who were members of the Winnipeg Grain Exchange at the time of the outbreak of the war? Among these, who enlisted for overseas service and in what capacity? Are any of these overseas men still members of the Exchange, and who are they? Did any of these men apply for admission to the pool mentioned above after returning from the war, and if so, with what result? Does the government or Canadian Wheat Board purpose the allowance of the continuation of such a pool, and if so, will members of the Exchange who performed overseas service be permitted to become associated with and enjoy the benefits derived from such organization?

Sir Geo. Foster replied:—"These questions refer to matters entirely within the competence of the non-governmental agencies and agents therein mentioned, with the organization and operation of which the government has nothing to do and of which it has no records."

**Government Shipbuilding in Great Britain.**—A dispatch states that the British Ministry of Shipping's expenditure has exceeded its estimates by £100,000,000, the actual excess in expenditures being £85,000,000, with a deficiency of £15,000,000 in the amounts realized on account of appropriations. The expenditure included £8,800,000 for shipbuilding abroad, for which the final accounts had not been received. The concrete shipbuilding plan, for which special yards were laid out, shows a loss of £2,500,000.

**Saguenay River Dredging.** The Minister of Railways and Canals stated, in the House of Commons, recently, that the cost of dredging the Saguenay River was $522,867.41. The depth of the channel is 16 ft. The government is not aware that at certain places there are land slides which may block the channel.

# Canada Shipping Act (Pilotage) Amended.

On motion of the Minister of Marine, Hon. C. C. Ballantyne, the House of Commons went into committee, on Apr. 30, on the following proposed resolution: "That it is expedient to amend the Canada Shipping Act, by repealing sec. 434 thereof, which relates to the mode of altering pilotage rates for and below Quebec, and to provide that the said section should be deemed to have been repealed on and from June 12, 1914."

Sec. 434, referred to in the resolution above, was as follows:—"The rates of pilotage now in force for and below Quebec shall not be altered unless at any time the share of the net income of the Quebec Pilots Corporation, annually accruing to each member of the said corporation, acting and practising as a pilot for and below the harbor of Quebec, has been less than $600 on an average, for three consecutive years immediately preceding; in which case it shall be the duty of the Minister to submit to the Governor in council, for approval, a bylaw establishing such increased rates of pilotage, or pilotage dues, as are deemed necessary for the purpose of securing to each such pilot an average annual share of not less than $600 of such net income, and in like manner thereafter, to submit for approval a further bylaw whenever such annual average share for three successive years, for each pilot shall not amount to $600.

"2. Nothing in this part shall be construed to give power to the Minister to make regulations respecting the management or maintenance of pilot boats, or respecting the administration or distribution of the earnings of pilots and pilot boats."

The proposed resolution was discussed as follows:—

Mr. Ballantyne: Under the Canada Shipping Act, sec. 434, no alteration can be made in the pilotage dues for the Quebec District unless the average income for each pilot for three years had been less than $600 a year. This is a statute that was framed very many years ago, and we all know that the cost of living has very greatly increased since and especially during the past few years. Although the Quebec pilots have made an arrangement with the Marine Department, and also with the shipping interests, for the season of 1920, the object of this resolution is to enable me to introduce a bill eliminating this restriction of $600, so that if it should be deemed advisable in the future to change the tariff it can be done.

T. Vien: Will it open the door to a reduction?

J. H. Sinclair: Why does the Minister go back to June 20, 1914?

Mr. Ballantyne: I submitted this to the Justice Department, which pointed out to me that owing to chap. 48 which was assented to on June 12, 1914, it would be necessary to make this resolution and the bill based upon it date from June. It is purely a technical, legal matter to conform to the regulations of the Shipping Act.

Mr. Sinclair: Will it have the effect of increasing the salaries of the pilots from 1914 up to the present?

Mr. Ballantyne: All arrangements have have been made for the season of 1920 and I do not know whether the pilots of Quebec will ask in the future for an increase in the tariff or not, but in view of the fact that no change can be made in the tariff under sec. 434 unless their income is less than $600 a year for three consecutive years, I merely want to remove that restriction, so that if the Quebec pilots should at any time in the future make a request to increase the tariff the department would be able to do so provided their claims were well based.

Hon. W. S. Fielding: Will the Minister specify any figure or eliminate it altogether?

Mr. Ballantyne: Eliminate it altogether.

Mr. Fielding: There will be no limit?

Mr. Ballantyne: No.

H. E. Lavigeur: Are the Quebec pilots making a demand for an increased tariff?

Mr. Ballantyne: The Quebec pilots did make a request to the department and also to the shipping people. We were unable to alter the tariff owing to this clause in the Shipping Act, which stated that their minimum income must be less than $600 for three years to enable us to increase the tariff, but as some compensation there has been an arrangement arrived at whereby they will receive a bonus.

The resolution was reported, read a second time and concurred in, and Mr. Ballantyne then introduced bill 94, to amend the Canada Shipping Act (Pilotage), in accordance with the resolution.

The bill was read a second time May 4 and, on the House going into committee, was discussed as follows:—

D. D. McKenzie: I understand the system of pilotage, or the laws dealing with pilotage, in Halifax and Sydney have been changed. Is there any change in method, or is there any proposed change in method of operating those pilotage systems or combinations in other parts of the country, or are they to go on as before?

Mr. Ballantyne: The member will no doubt recall that, at the session of Parliament, a year ago, I introduced in the house a bill that was passed giving the Governor General in council authority to make the Minister of Marine the pilotage authority and to take over such districts as Sydney, St. John, Vancouver and Victoria. The pilotage districts of Montreal and Quebec have been under the Minister of Marine for quite a number of years, and the pilotage authority at Halifax was placed under the same minister under the War Measures Act in 1918. The bill that I introduced a year ago vested the pilotage districts that I have mentioned in the Governor in council and the Minister of Marine. I shall be very glad to give further details when the pilotage items in the marine estimates are reached. The object of the present bill is merely to make a change in the shipping law, so that it will be possible for the Quebec pilots to get an increase in tariff if that is found necessary. If we do not make the change that the bill calls for, there can be no increase in the pilots' tariff until the minimum salary of the Quebec pilots for three consecutive years falls below $600 a year. I am sure members will agree that $600 a year as a remuneration for pilots may have been all right a great many years ago, but is altogether too low at present. While the subject is not up at present, I am having this change made in the act so that if it was thought fit in the future to make any change in the tariff with respect to the Quebec pilots I might be free to do so.

Mr. Sinclair: What was the average amount received by the Quebec pilots last year?

Mr. Ballantyne: The average earnings of the 61 pilots in the Quebec district last year amounted to $2,452.30.

Mr. Sinclair: Then this bill relates not to the salaries of the pilots, but to the rates to be charged by the pilots on shipping coming up the St. Lawrence. Am I not correct in that? There is a restriction in the law at present against increasing the rates to be charged ships by the pilots until the salaries of the pilots shall be less than $600. That is not likely to take place, because the pilots are getting about four times as much at present, but this legislation, as I understand it, opens the way to an increase in the pilotage rates.

Mr. Ballantyne: The member is quite correct, but even if it were mutually agreed between the Quebec pilots, the Marine Department and the shipping interests that the present tariff of the pilots should be increased, which would mean that their earning power would be greater than the average I have given, I would be quite unable to make the increase, because of the existence of the old statute referred to, which provides that no change can be made in the pilotage tariff unless the annual income of the pilots is less than $600 a year for three consecutive years. No such restriction as this exists in the case of any other pilotage system, and I desire to have it eliminated, so that if the time should ever come when it was deemed fair and right to increase the tariff we may be able to do so.

Mr. Sinclair: Then it is not intended at present to make any increase in the rates?

Mr. Ballantyne: No.

The bill was then reported, read the third time and passed.

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**Litigation over French Steamships built in British Columbia.**—A series of actions were commenced in British Columbia recently, by Raymond Van Hemelryck, a Belgian residing in France, against the Northern Construction Co., the Pacific Construction Co., and the New Westminster Construction & Engineering Co., for the return of money paid on deposit, less certain allowances for material purchased, etc. It appears that plaintiff ordered through Anderson & Co., ship brokers, New York, 10 wooden steamships of 3,200 tons each, and these orders were distributed by Anderson & Co., as follows: 4 to Northern Construction Co., 3 to Pacific Construction Co., and 3 to New Westminster Construction & Engineering Co., at an average cost of $640,000 each. A deposit of 15% was made with bankers in New York, and a further deposit was to have been made, but was not, and the builders exercised their right to cease the work. The defence set up was that there was no contractual relation between the parties, and on the hearing of the case against the New Westminster Contracting & Engineering Co., that point of law was argued and held, and the case was dismissed. As the cases against the other defendant companies were precisely similar, they are being dealt with accordingly.

**Shipping Rates and Wages.**—At the Cunard Steamship Co.'s annual meeting in Liverpool, Eng., recently, Sir Alfred Booth, Chairman, is reported to have stated that he was quite prepared for a slump in freight rates, that the sooner the storm was over the better, and that he hoped it would result in a definite break in the vicious circle of rising wages and rising prices.

# Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

**Contracts Placed Without Tenders.**—Canadian Railway and Marine World for May contained a full report of the Minister of Marine's speech, in the House of Commons, on Mar. 23, on the government's shipbuilding programme. When the debate was continued on Mar. 30, the Minister replied to Hon. Mr. Mackenzie King's contention that public tenders should have been asked for building the ships, and was reported to have said:—"The statute from which he (Mr. King) has quoted makes it plain that the Minister has power to use his best judgment, and the government to purchase by the best means, what it requires."

We are officially advised that what Mr. Ballantyne did say was: "The statute from which he (Mr. King) has quoted makes it plain the Minister has the power to place contracts where an emergency exists, without calling for public tenders. I claim that two emergencies existed: (1) The absolute necessity of having the ships built as speedily as possible, as they were urgently required, and (2) To find employment for both skilled and unskilled labor, and also for the large number of returned soldiers who were coming back to Canada after the signing of the armistice. Therefore, there can be no question about the existence of the emergencies, and that the government was quite justified in placing the contracts in the manner in which it did, and which I assert was in the best public interests."

**Keels Laid.**—Since Canadian Railway and Marine World for May was issued, we have been advised of the laying of the following keels of steel cargo steamships for Canadian Government Merchant Marine Ltd.

S.s. Canadian Coaster; Marine Department contract 58; builder's yard no. 16; approximately 3,890 d.w. tons; Collingwood Shipbuilding Co., Kingston, Ont.; May 6.

Marine Department contract 59; builder's yard no. 8; approximately 2,800 d. w. tons; Nova Scotia Steel & Coal Co., New Glasgow, N.S.; May 4.

**Launchings of steamships.**—Since Canadian Railway and Marine World for May was issued, we have been advised of the following launchings of steel cargo steamships for Canadian Government Merchant Marine Ltd.:—

May 7, S.s. Canadian Hunter; Marine Department contract 18; builder's yard no. 460; approximately 5,100 d.w. tons; Davie Shpibuilding & Repairing Co.; Lauzon, Levis, Que.

May 8, S.s. Canadian Runner; Marine Department contract 32; builder's yard no. 43; approximately 4,575 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.

**Deliveries of steamships.**—In addition to the steel cargo steamships mentioned in Canadian Railway and Marine World previously, the following deliveries have been made to Canadian Government Merchant Marine Ltd.

April 28; s.s. Canadian Farmer; Marine Department contract 46; builder's yard no. 65; approximately 3,990 d. w. tons; built by Collingwood Shipbuilding Co., Collingwood, Ont. This ship went to Huron, Pa., and took a cargo of coal to Montreal, where she was loaded with general cargo for Havana, Cuba, and sailed May 19.

May 7. The s.s. Canadian Planter, Marine Department contract 28; builder's yard no. 72; approximately 8,390 d. w. tons; built by Canadian Vickers Ltd., Montreal, which was delivered to the Marine Department, at Quebec, Dec. 27, 1919, and which remained there all winter, made her trial trip to Montreal recently, and was delivered to Canadian Government Merchant Marine Ltd., for operation May 7. She was loaded at Montreal for South America, with paper, malt, lumber, agricultural machinery, etc., and sailed May 15.

May 7; s.s. Canadian Miner; Marine Department contract 41; builder's yard no. 6; approximately 2,800 d.w. tons; built by Nova Scotia Steel & Coal Co., New Glasgow, N.S. This ship is carrying coal between Sydney, N.S., and Levis, Que.

May 11; s.s. Canadian Beaver; Marine Department contract 31; builder's yard no. 15; approximately 3,990 d.w. tons; built by Collingwood Shipbuilding Co., Kingston, Ont. She sailed for Montreal the same day, where she loaded cargo for Jamaica and Cuba, and sailed May 18.

May 12; s.s. Canadian Sealer; Marine Department contract 40; builder's yard no. 5; approximately 2,800 d. w. tons; built by Nova Sotia Steel & Coal Co., New Glasgow, N.S. She is carrying coal between Sydney, N.S., and Levis, Que. This ship was delivered to the Marine Department Dec. 20, 1919, but was not transferred to Canadian Government Merchant Marine until May 12.

Steel cargo steamship, Canadian Beaver; approximately 3,990 d.w. tons; built for Canadian Government Merchant Marine Ltd., by Collingwood Shipbuilding Co., Kingston, Ont.

**Officers of Steamships.**—The following officers have been appointed by Canadian Government Merchant Marine Ltd. The first column contains the names of the ships, the second those of the captains, and the third those of the chief engineers:—

| | | |
|---|---|---|
| Canadian Farmer | A. St. A. Robertson | L. O. Lamoreux |
| Canadian Farmer | W. Larmour | A. J. Griffiths |
| Canadian Planter | F. Ferguson | S. Evans |
| Canadian Seigneur | H. E. Webb | D. Cameron |

**Freight Rates.**—J. H. Sinclair, M.P. for Antigonish and Guysborough, N.S., asked in the House of Commons recently: "Are the rates of freight charged by Canadian Government Merchant Marine subject to the control in any way of the United States Shipping Board?" The Minister of Marine answered "No."

**Inquiries re C. G. M. M. Ltd.**—J. H. Sinclair, M.P. for Antigonish and Guysborough, N.S., asked the following questions in the House of Commons recently, the answers being given by the Minister of Immigration, Hon. J. A. Calder:

"Who are the shareholders of the corporation known as Canadian Government Merchant Marine?" Answer: "All of the issued capital stock of the Canadian Government Merchant Marine, Ltd., less directors' qualifying shares, are owned by His Majesty the King and held by the Minister of Finance and Receiver General of Canada."

"Did the shareholders invest any of their own money in this venture? If not, who furnished the capital?" Answer: "The total investment in the Canadian Government Merchant Marine is made by the Government."

"Who are the directors?" Answer: "D. B. Hanna, Mr. A. J. Mitchell, Major G. A. Bell, E. R. Wood, Robt. Hobson, Sir Hormisdas Laporte, A. P. Barnhall, Thos. Cantley."

"Is there a separate company or corporation for each ship?" Answer: "Yes."

"In what names does the title to the ship stand on the registry?" Answer: "Title to each vessel will stand on the registry in the name of the separate ship company, with a mortgage thereon in favor of His Majesty the King."

"Does the Department of Railways and Canals receive a statement at stated periods from the Canadian Government Merchant Marine showing the profits and loss of the business? If so, how often?" Answer: "A statement of the operations of the Canadian Government Merchant Marine, as furnished to the directors at their regular meetings, is supplied both to the Department of Railways and to the Department of Marine."

"Who is responsible to the ratepayers for the conduct of the business carried on by the Canadian Government Merchant Marine?" Answer: "The Government."

"Is a separate account kept for each ship?" Answer: "Accounts are kept showing, separately, the operation of each vessel."

"Whate rate of insurance is being paid on the hulls of ships belonging to this company?" Answer: "Arrangements for insurance and rates are made by the operating company. Rates of insurance

vary from time to time and lowest tenders are accepted."

The s.s. Canadian Recruit, which after being caught in the ice below Quebec early in the year, and stranded at Vache Point, at the mouth of the Saguenay River, was abandoned to the underwriters, will probably be salvaged, the work having been taken in hand by the Canadian Salvage Association. The wrecking steamship Lord Strathcona, with a tug and barge, were dispatched to the ship during May, and a new type of salvage gear, imported from England recently, and similar to that used during the war for salving sunken vessels, is to be used.

British American Shipbuilding Co., Welland, Ont., as stated in Canadian Railway and Marine World for May, launched the s.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4, approximately 4,575 d.w. tons, in two sections, the aft section on Mar. 25 and the forward section April 13. The so called cutting was accomplished as follows: A theoretical line of cutting was established in a convenient place; in this instance between frame 108 and 109. All plates and angles which came in the way of this line were left unriveted. All plates and angles adjacent to the plates removed were left unriveted, for a distance sufficient to allow of the removal of these plates, but everything was kept well bolted up ,to keep the hull in true shape, until it was necessary to undo the loose portion, prior to launching. The ship has a wooden bulkhead, fitted on frame 94, acting as a reserve bunker. This was taken advantage of, and used to float the aft part. After completing the boilers and machinery, and all fittings, the ship will betowed in two parts to Montreal to be put together.

The British American Shipbuilding Co. expects to launch the s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, during June.

Collingwood Shipbuilding Co., Collingwood, Ont., delivered the s.s. Canadian Farmer; Marine Department contract 46; builder's yard no. 65; approximately 3,990 d.w. tons; April 28.

Collingwood Shipbuilding Co., Kingston, Ont., laid the keel for steel cargo steamship Canadian Coaster; Marine Department contract 58; builder's yard no. 16; approximately 3,890 d.w. tons; May 6.

Collingwood Shipbuilding Co., Kingston, Ont., delivered the steel cargo steamship Canadian Beaver; Marine Department contract 31; builder's yard no. 15; approximately 3,990 d.w. tons; to the Marine Department; May 11.

Davie Shipbuilding & Repairing Co., Lauzon, Levis, Que., launched the steel cargo steamship, Canadian Hunter; Marine Department contract 18; builder's yard no. 460; approximately 5,100 d.w. tons; for Canadian Government Merchant Marine Ltd.; May 5.

Halifax Shipyards Ltd., Halifax, N.S., advises us May 11 that it expected to launch the steel cargo steamship Canadian Mariner; Marine Department contract 21; builder's yard no. 1; approximately 8,390 d.w. tons, on June 21.

Midland Shipbuilding Co., Midland, Ont., advised us May 10 that it had not been able to obtain steel to lay the keel of the steel cargo steamship Canadian Racer; Marine Department contract 54; builder's yard no. 10; approximately 3,390 d.w. tons; but that it hoped to lay the keel within three weeks thereafter.

Nova Scotia Steel & Coal Co., New Glasgow, N.S., laid the keel of a steel cargo steamship, Marine Department contract 59; builder's yard no. 8; approximately 2,800 tons; May 4.

Nova Scotia Steel & Coal Co. delivered the steel cargo steamship Canadian Miner; Marine Department contract 41; builder's yard no. 6; approximately 2,800 d.w. tons; to the Marine Department, May 7.

Port Arthur Shipbuilding Co., Port Arthur, Ont., launched the s.s. Canadian Runner; Marine Department contract 32; builder's yard no. 43: approximately 4,575 d.w. tons, May 8, for Canadian Government Merchant Marine Ltd.

Tidewater Shipbuilders Ltd., Three Rivers, Que., expects to launch two steel cargo steamships, each approximately 5,100 d.w. tons, for Canadian Government Merchant Marine Ltd., as follows:—S.s. Canadian Fisher; Marine Department 15; builder's yard no. 7; in June; s.s. Canadian Forrester; Marine Department 16; builder's yard no. 8; in July.

Steel cargo steamship Canadian Otter, approximately 4,575 d.w. tons, for Canadian Government Merchant Marine Ltd., being built in two sections by British American Shipbuilding Co., Welland, Ont., for taking through the Welland and St. Lawrence canals.

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Noronic Floating Inn, at the Brush St. Dock, Detroit, Mich., was opened for business May 1, for the accommodation of visitors to Detroit who are unable to secure accommodation in hotels, and the service will be continued until further notice. By arrangement with the Northern Navigation Co., the s.s. Noronic is being used for this purpose, until she takes up her ordinary summer schedule. She has 279 rooms, and the prices are as follows: Rates per night, inside rooms, $2 single, $3 double; outside rooms, $3 single, $4.50 double; rooms with bath $5 single, $8 double; running hot and cold water in every room; table d'hote meals, regular Northern Navigation service, breakfast 7 to 10 a.m. $1, luncheon 12 to 2 p.m. $1.25, dinner 6 to 8.30 p.m. $2. Dancing will be arranged for guests each evening, except Sundays, to 11 p.m., and a concert on Sundays.

Launchings of aft and fore sections of steel cargo steamship Canadian Otter, approximately 4,575 d.w. tons, for Canadian Government Merchant Marine Ltd., by British American Shipbuilding Co., Welland, Ont.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with the finally ascertained deadweight tons multiplied by the price per ton, the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4,575 | $207. | $ 948,660.75 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " " | 67 | *8,408 | 180. | 1,519,459.99 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbldg. Co., C'wood. | 61 | *3,595 | 205. | 819,385.58 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd. | 100 | 4,485 | 207. | 928,395 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | 4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9, 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbldg. Co., C'wood. | 62 | *3,964 | 205. | 813,252.07 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Jan. 3, 1919 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | Dec. 27, 1919 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | ..... | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 11, 1919 | Oct. 9, 1919 | ..... |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 28, 1919 | May 7, 1920 | ..... |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | *3,341 | 205. | 686,762.88 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 9, 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3,408 | 210. | 715,652.49 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | *3,357 | 205. | 690,409.84 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3,405 | 210. | 715,649.13 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18, 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8,382 | 188. | 1,575,816.00 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1,587,643.15 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept, 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8,393 | 188. | 1,589,700.00 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8, 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | 8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Winner | Harbor Marine Co. Ltd. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | ..... | ..... |
| 30 | Jan. 24, 1919 | Canadian Traveller | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,990 | 205. | 817,950 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | May 11, 1920 |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Lloyd's | 10½ | Aug. 29, 1919 | May 8, 1920 | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10½ | Aug. 29, 1919 | ..... | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Apr. 26, 1919 | Dec. 6, 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | Mar. 6, 1920 |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan, 24, 1920 | ..... |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | Feb. 24, 1920 | ..... |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8, 1919 | Dec. 20, 1920 |
| 41 | Mar. 31, 1919 | Canadian Miner | " " | 6 | 2,800 | 210. | 588,000 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | Apr. 3, 1920 | May 7, 1920 |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Bri. Corp. | 10 | Mar. 29, 1919 | Apr. 13, 1920 | ..... |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10 | July 14, 1919 | ..... | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbldg. Co., C'wood. | 65 | 3,990 | 180. | 718,200 | Lake, s.d., p. b., and f'c's'le | Lloyd's | 11 | Sept. 3, 1919 | Dec. 27, 1919 | Apr. 28, 1920 |
| 47 | Sept. 11, 1919 | Canadian Observer | " | 66 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | ..... | ..... |
| 48 | Sept. 2, 1919 | Canadian Pathfinder | Dominion Shipbuilding Co. | 10 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | ..... | ..... |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | Jan. 17, 1920 | ..... | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 54 | Feb. 26, 1920 | Canadian Racer | Midland Shipbuilding Co. | 10 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 55 | Mar. 18, 1920 | Canadian Highlander | Wallace Shipyards Ltd. | 103 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 56 | Mar. 18, 1920 | Canadian Skirmisher | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 57 | Mar. 13, 1920 | Canadian Rover | Collingwood Shipbldg. Co., C'wood. | 67 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 58 | Mar. 13, 1920 | Canadian Coaster | Collingwood Shipbldg Co., Kingston | 16 | 3,890 | 185.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | " | 11 | May 6, 1920 | ..... | ..... |
| 59 | ..... | ..... | Nova Scotia Steel & Coal Co. | 8 | 2,800 | 190. | 532,000 | 2.d. p., b. and f'c's'le | " | 8½ | May 4, 1920 | ..... | ..... |
| 60 | Feb. 2, 1920 | Canadian Challenger | Davie Shipbuilding & Repairing Co. | 476 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 61 | Feb. 26, 1920 | ..... | Port Arthur Shipbuilding Co. | 45 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b, and f'c's'le | " | 11 | Mar. 30, 1920 | ..... | ..... |
| 62 | April 7, 1920 | Canadian Transporter | J. Coughlan & Sons | 20 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 63 | April 7, 1920 | Canadian Freighter | " | 21 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 383,519 | | $73,058,101.78 | | | | | | |

# Legislation Respecting Sick and Distressed Mariners.

The following resolution was adopted by the House of Commons May 11, on motion of Hon. N. W. Rowell:—

That it is expedient to bring in a measure to amend the Canada Shipping Act, Revised Statutes, 1906, chap. 113, and to provide:—

1. That Part V of the said Act, relating to Sick and Distressed Mariners, be repealed, and in lieu thereof it be enacted,—

(a) That the Minister, with the approval of the Governor in council, may rent and equip and maintain premises for hospitals for the care and treatment of sick mariners, and may, with the consent of the person having the control and management of any hospital, designate such hospital to be, during his pleasure, a hospital for the care and treatment of sick mariners, and contract with such persons for the care and treatment of sick mariners, and may discontinue the use of any such hospital for the purposes aforesaid; and that the Minister may make regulations for the government of any such hospital, and prescribe the duties and powers of the medical and other officers and employes of such hospitals, and of the port physicians and of all other officers required to perform any services in carrying out the provisions of this legislation or of any regulation made hereunder; and all hospitals devoted exclusively to the treatment of sick mariners shall be under the exclusive control and management of the Minister; and that any shipwrecked, destitute or otherwise distressed seamen may, by authority from the Minister, be temporarily boarded and lodged and taken care of at any marine or seamen's hospital devoted exclusively to the reception, care and treatment of sick mariners;

(b) That there shall be levied and collected on every ship arriving in any port in Quebec, Nova Scotia, New Brunswick, Prince Edward Island, or British Columbia, hereinafter called "the provinces", a duty of 2c. for every ton which such ship measures, registered tonnage, but in no case shall the duty payable by any ship be less than $2 in any year; that such duty shall be payable on each ship three times during each calendar year by the master or person in command of such ship, or by some person on his behalf to the collector or other chief customs officer at the port at which such ship is entered, at the time of making such entry, and such entry shall contain on its face the tonnage of such ship, and no entry shall be made and no clearance shall be granted unless such duty is paid;

(c) That no ship otherwise liable to pay the duty shall be exempt from the payment of the said duty by reason of her voyage being one not requiring entry or clearance at the Custom house. If the ship does not require entry, the duty shall be paid immediately on her arrival;

(d) That no ship engaged in the coasting trade of Canada and arriving at any port in any of the said provinces from any other port in the same province, or arriving at any port in the province of Quebec from any port in the province of Ontario, shall be subject to the payment of the duty: provided that no ship arriving at any port in Canada from any place out of Canada, and afterwards continuing her voyage to another port in Canada, shall be exempt from the payment of the duty at the last mentioned port, unless she has paid it at the first mentioned or some other port on the same voyage;

(e) That as regards fishing vessels, the duty shall not be payable on ships employed exclusively in fishing or arriving at a port in the provinces when on a fishing voyage, but the master or person in command of a ship registered in Canada used exclusively in fishing or to be employed on a fishing voyage, may, if he so desires, pay the said duty of 2c. for each registered ton before the said ship makes its first fishing voyage in any year, at the first port at which the ship receives any part of her outfit for the said voyage, and thereafter before each subsequent voyage during the year, but not exceeding three payments in all in any calendar year;

(f) That every collector or other chief officer of the Customs shall account for the sums received by him under these provisions in such manner as the Minister may from time to time direct;

(g) That sick mariners on ships paying duty, shall be received and treated in any hospital for sick mariners as heretofore, and receive the care of a collector or other chief officer of Customs where there is no marine hospital; but no sick mariner taken ill or injured outside of Canada, and arriving in any of the said provinces otherwise than in a ship to which he belongs, shall be entitled to the benefits conferred by these provisions, nor for a period longer than one year without written authority from the Minister, nor shall he be entitled to treatment or care thereunder when suffering from permanent insanity, and no sick mariners belonging to ships exempted from or not paying the duty levied under these provisions shall be entitled to the rights or benefits of sick mariners hereunder;

(h) That all expenditures made under these provisions shall be paid out of such moneys as Parliament may appropriate for the purpose; and be accounted for, with attested vouchers, as the Minister may direct; and an annual report thereof, with a statement of receipts and expenditures, shall be laid before Parliament.

2. That section 207 of the said Act be repealed, and in lieu thereof it be enacted that the Minister may whenever he deems it necessary pay out of any moneys applicable to the relief of distressed seamen and appropriated by the Parliament of Canada for that purpose, such sums as he deems requisite for the temporary relief in such manner as he deems advisable, of shipwrecked, destitute or otherwise distressed seamen not entitled to relief under any of the provisions of the Merchant Shipping Act, 1894; and may also on the production of the bills of the disbursements with the proper vouchers and such other evidence as the Minister requires, pay out of such moneys any reasonable expenses incurred by the Board of Trade of the United Kingdom or by any officers of His Majesty in any British possession other than Canada or in any foreign country, on account of subsistence or transport back to Canada of any seamen or apprentices who have been domiciled in Canada for twelve months and who have been found in distress either on account of shipwreck or otherwise in any place out of Canada; and persons serving in ships registered in Canada shall for this purpose be deemed to be domiciled in Canada while so serving.

A bill based on the resolution was introduced immediately and read a first time.

## Seamen's Convention at Genoa.

Under the provisions of the Peace Treaty, the League of Nations' International Labor Office has arranged for a conference to be held at Genoa, Italy, opening on June 15, to deal with labor questions affecting seamen. The convention creating a permanent organization for the promotion of the international regulation of labor conditions, provides that meetings of the general conferences of representatives of the members shall be held at least once a year, and that the representatives of each member shall consist of two government delegates, and two others representing respectively the employes and the working people of each of the members.

The following delegates have been appointed for Canada:—Sir George H. Perley, High Commissioner for Canada in England; and G. J. Desbarats, Deputy Minister of Naval Service, Ottawa, representing the government; Thos. Robb, Manager, Shipping Federation of Canada, Montreal, representing Canadian employers; and J. C. Gauthier, of the National Association of Masters, Mates and Pilots and of the International Seamen's Union of America, Montreal, representing Canadian workpeople.

The Labor Department at Ottawa, at the request of the International Labor office, circulated a questionnaire among Canadian vessel owners, submitting a great number of questions to assist the Ottawa Government in considering its attitude. It included the seamen's conference agenda as follows:—

Application to seamen of the convention drafted at Washington in Nov., 1919, limiting the hours of work in all industrial undertakings, including tarnsport by inland waterways, to 8 hours in the day and 48 in the week.

Consequential effects as regards manning, and in the regulations relating to accommodation and health on board ship. Supervision of articles of agreement. Provision of facilities for finding employment for seamen.

Application to seamen, of the convention and recommendations adopted at Washington in Nov., 1919, in regard to unemployment and unemployment insurance.

Application to seamen of the convention adopted at Washington, prohibiting the employment of children under 14 years of age.

Consideration of the possibility of drawing up an international seamen's code.

**Navigation Regulations for Lower Detroit River.**—The regulations for the navigation of the lower Detroit River, while the Livingstone channel is being widened, and which were published in our May issue, as effective on the opening of navigation, were suspended subsequently, and the previous regulations put in force, temporarily. The new regulations as published in our last issue have been revived, and made effective as from May 15, with the following change: "Upbound vessels leaving Livingstone channel must proceed above gas buoys 83D and 84D, marking the north end of Ballards Reef, before crossing the path of downbound vessels." The former regulation covering this last point provided that upbound vessels leaving Livingstone channel must cross the path of downbound vessels in the vicinity of Ballards reef.

# Steamship Communication with Magdalen Islands.

Senator J. McLean, of Souris, P.E.I., moved in the Senate April 30, that a select committee of the Senate be appointed to enquire into the management of the steamship Canadian Sealer, now lying at Souris, P.E.I., laden with fishing and other supplies for the Magdalen Islands, and the reason why such steamship was not dispatched at the opening of navigation to the Magdalen Islands, and that the committee be empowered to send for persons, papers and records and employ a stenographer and such clerical aid as may be necessary, the committee to be composed of Senators Crosby, Murphy, Tanner, Thompson and the mover.

In supporting the motion he said:—In asking for this committee I may say that the people of the Magdalen Islands have been very badly used. The steamship they have needed so sorely all winter was not dispatched this spring as early as navigation would allow her to go. It seems ridiculous that one of the government steamships should leave England and get up to Montreal a week or so before this steamship was fitted out for that place, while the people were waiting ever since last autumn for goods that they should have had before the session opened. I had a telegram from my son on April 28 stating that the steamship was expected the next day, but I learned that the captain had arrived in Charlottetown, looking for a crew, and up to the present I have had no report that the crew has arrived or that the steamship has gone forward. I notified the Marine Department on Mar. 29 that the Gulf was then clear as far as the Magdalen Islands, and was told the steamship would be fitted out at once. When I got the telegram on April 21 asking that she be dispatched through to the Magdalen Islands I called up the Marine Department and was referred to the Railway Department, which in turn sent me to the Trade and Commerce Department, and the latter had no information, and referred me back to the Marine Department. I understand the trouble to be that the steamship they had on hand, the Lady Evelyn, was not able to make the two trips a week. On this matter we will have more information when Senator Tanner of Pictou gets his information as to the nature of the contract. For the last 30 or 40 years the government has been paying a large subsidy for carrying mails and passengers and freight from Pictou and Souris to the Magdalen Islands, and the only service that was satisfactory was that given by the Lady Sybil, which was built by the Magdalen Islands Steamship Co., especially for that route. She is capable of making 12 or 13 knots, and can make two round trips a week; but the Lady Evelyn, a smaller steamship, could not make a trip twice a week, except in June and July, when there was not a large amount of freight offering; in the spring and autumn, when there was a large amount of freight, she was not able to keep the freight clear.

My object in having this committee appointed is to find who are responsible for the neglect, delay, and hardship imposed upon the people of the Magdalen Islands, and put it before the proper department. As the government is building steamships now, I believe the time has arrived when it should build one of the capacity of the Lady Sybil, which would take the round trip twice a week and clean up the freight, because it must have been a great expense, either to the contractor or to the government, last autumn, to send the car ferry down to Pictou and take out this new steamship of 2,500 tons that was lying there, send her over to Souris, have her unsuccessfully attempt to go down; then replace her with the Montcalm; take part of the goods out of the Canadian Sealer; and then spend six weeks getting down to the Magdalen Islands; whereas if her contractor had a steamship suitable for the purpose there would have been no trouble whatever; the freight would have all been cleaned up, and the people would have had their freight last autumn. I believe if the Government built a steamship a little larger than the Lady Sybil, with proper speed, and put her on that route, it would save the ship subsidies that are now being paid to the contractors, and take the mails, and passengers and freight, down there. There would be a further saving to the government if that steamship was put in connection with the railway that carries the goods that are taken down to the Magdalen Islands. Those people do not raise any goods for export, and all the freight that goes down there in the shape of supplies, flour and goods of that kind, would come over the Canadian railways. If the steamship was taken over, the railways would have control of that, which I think would be of great service. For these reasons I ask that this committee be appointed with power to investigate matters.

The resolution was adopted.

**Vancouver Harbor Officials' Salaries.** An Ottawa press dispatch of May 21 says an order in council has been passed, fixing annual salaries to be paid the Vancouver Harbor Commissioners officials, as follows:—Secretary, $4,500; Chief Engineer, $4,500; Assistant Chief Engineer, $3,000; Harbormaster, $3,600; Port Warden, $3,600; Chief Accountant, $3,000; Assistant Accountant, $3,400; Port Superintendent, $2,400.

**The s.s. M. Moran,** owned by the British War Office, has been transferred from Canadian to the British register. She was built at Camden, N.J., in 1912, and is screw driven by engine of 54 h.p., her dimensions being,—length 109 ft., breadth 25.7 ft., depth 14.5 ft.; tonnage 315 gross, 111 net.

## Pictou, N.S. Harbor Control Transfer.

The Minister of Marine in introducing a bill in the House of Commons, May 10, to repeal the acts relating to Pictou harbor, to provide for the transfer to the government of the property, rights and assets held by the harbor commissioners, and to provide that the government assume and discharge all the commissioners' obligations and liabilities, said:—"The reason for the transfer is that the revenue of Pictou harbor is less than the expenditures in connection with it. The revenue for the seven years from 1913 to 1919, inclusive, was $3,388, and the expenditure $3,840. While the harbor is under a commission, no moneys can be spent to repair the wharves there unless the revenue permits of that being done; and according to the figures I have given the expenditure during the period referred to has been greater than the revenue. The commission is unable to make the necessary repairs to the wharf as matters stand, and therefore it is proposed that the harbor shall be transferred from the Marine Department to the Public Works Department."

**Trawler Sales.**—The Anderson Co. of Canada has sold the Admiralty trawlers 42 and 43, to the Pecheries at Armements de la Rochelle Ocean of Havre, France, which also bought no. 41, as mentioned in a previous issue. Mexican interests have been negotiating for the purchase of three of these ships, but on account of the political troubles in Mexico, the deal is suspended temporarily. Other negotiations are reported to be in progress, on behalf of the British Government, and it is said that an option has been secured on 40. It is also stated that some sales are expected to French parties in the near future.

**Sorel Shipyard Superintendency.**—Referring to the Civil Service Commission's notice that applications would be received for appointment to this position, as per particulars published in Canadian Railway and Marine World, we were advised by the commission, on May 11, that the Marine Department had requested that no appointment be made to the position, and that therefore the question of an appointment would be held in abeyance for some time. We are advised by the Marine Department that Louis Lacouture is acting officer in charge.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during April, 1920:

| Articles | | | Canadian Canal | U.S. Canal | Total |
|---|---|---|---|---|---|
| Lumber | Eastbound | M. ft. B.M. | ..... | 2,050 | 2,050 |
| Flour | " | Barrels | ..... | ..... | ..... |
| Wheat | " | Bushels | 210,000 | 4,064,611 | 4,274,611 |
| Grain, other than wheat | " | Bushels | 515,000 | 5,493,000 | 6,008,000 |
| Copper | " | Short tons | ..... | ..... | ..... |
| Iron Ore | " | Short tons | ..... | 162,630 | 162,630 |
| Pig Iron | " | Short tons | ..... | ..... | ..... |
| Stone | " | Short tons | ..... | ..... | ..... |
| General Merchandise | " | Short tons | 540 | 5 | 545 |
| Passengers | " | Number | ..... | ..... | ..... |
| Coal, soft | Westbound | Short tons | 8,000 | 42,831 | 50,831 |
| Coal, hard | " | Short tons | ..... | 10,000 | 10,000 |
| Iron Ore | " | Short tons | ..... | ..... | ..... |
| Manufactured Iron and Steel | " | Short tons | ..... | ..... | ..... |
| Salt | " | Short tons | ..... | ..... | ..... |
| Oil | " | Short tons | ..... | ..... | ..... |
| Stone | " | Short tons | ..... | 6,247 | 6,247 |
| General Merchandise | " | Short tons | 2,905 | 12,500 | 15,405 |
| Passengers | " | Number | ..... | ..... | ..... |
| Summary | | | | | |
| Vessel Passages | | Number | 86 | 146 | 232 |
| Registered Tonnage | | Net | 90,741 | 522,584 | 613,325 |
| Freight—Eastbound | | Short tons | 18,765 | 435,961 | 454,726 |
| Westbound | | Short tons | 10,905 | 71,578 | 82,483 |
| Total Freight | | Short tons | 29,670 | 507,539 | 537,209 |

Canadian canal opened Apr. 23, U.S. canal opened Apr. 19.

# The Pilotage Situation in British Columbia.

Canadian Railway and Marine World for May mentioned a press report stating that a message had been received in Vancouver early in April from the Deputy Minister of Marine, to the effect that unless B.C. pilots accepted the Government's terms regarding wages and working conditions, open pilotage would become effective on the B.C. coast on May 6. Just after our May issue had gone to press, the Marine Department supplied us with the following memorandum in regard to the matter: —

"From and after May 6 next, the compulsory payment of pilotage dues, in what was heretofore the British Columbia Pilotage District, will be discontinued. This district comprised the whole of B.C., with the exception of the Fraser River, and hereafter all vessel owners and agents will require to make their own arrangements for such pilotage services as they may require in these waters. The adoption of this policy is the outcome of attempts made by the Marine Department to make effective the main recommendations submitted by the royal commission that enquired into pilotage matters in B.C. during 1918. For a great many years, representations were forthcoming from B.C. interests that the pilotage service as then conducted was not satisfactory nor calculated to advance the trade of Canadian Pacific ports. These representations, so persisted in, resulted in the appointment of the royal commission alluded to. The chief of the recommendations submitted by the commission was that the Minister of Marine should supersede the various local pilotage authorities, and become the pilotage authority in B.C. waters, with all pilots operating directly under him, at salaries to be determined by him. The recommendation of the royal commission was that this salary should be $250 a month. By order in council of Sept. 10, 1919, it was resolved to put this recommendation in effect, and accordingly the several local pilotage authorities were abolished, and one pilotage district, embracing all the coast waters of B.C., under the authority of the Minister of Marine was constituted to be effective as from Jan. 1, 1920.

"A General Superintendent of Pilots was appointed by the Minister, with extensive and intimate knowledge of B.C. ports and their requirements. Under his supervision bylaws for the administration of pilotage in the new district were prepared, and approved by the government. These bylaws provided inter alia that pilots might receive a salary up to the maximum of $325 a month, provided the business to the several ports would yield enough revenue to enable such payments to be made, in addition to defraying other necessary and legitimate expenses. Based on the annual reports submitted to the department by local pilotage authorities, the remuneration recommended by the General Superintendent and approved by the government was in excess of any remuneration previously received by pilots. From the outset of the negotiations, the pilots insisted upon a higher rate of pay which they plainly intimated should not be under $350 a month, in addition to expenses incurred in carrying on their work. The department declined to accept a proposal of this kind and after some further negotiations on the spot, between the pilots and the Superintendent, it was agreed that the department's proposals should have a three months trial, each side to have the privilege of terminating the agreement at the expiration of this period, upon giving one month notice. During the three months after January, it was found that the revenue was sufficient to pay the pilots a salary of $325 a month, and in addition $4.50 a dey for living allowance while on duty, together with all costs for transportation. The department also agreed to acquire the launches owned by the pilots, at a fair valuation, and to provide employment on shore for two pilots who were over 70 years of age, at a salary of $100 a month, notwithstanding a recommendation to the contrary by the royal commission.

"Towards the end of the three months period, the pilots renewed their demand for a salary of $350 a month, together with excessive requests for expenses and also a request to provide a salary of $150 a month for the two retired pilots alluded to above. For obvious reasons the department was not disposed to accede to the pilots' requests, with the result that, on Mar. 19, the latter telegraphed to say that at a general meeting it was resolved they would not accept the department's proposals or submit to the pilotage bylaws as approved. This telegram was interpreted by the department as a notice to terminate the agreement then in force, and the pilots were so advised. The acting Superintendent of Pilots at Victoria was further instructed by telegram, on April 3, to advise the pilots that their attitude, if persisted in, would leave no alternative to the department but a termination of the agreement. The department emphasized that the period of uncertainty had already continued too long and unless the pilots signified their intention of accepting its proposals, notice of termination of agreement should date from the day on which they would be so advised. The acting superintendent was also informed that if the pilots declined to come under the pilotage authority, shipping interests would be notified that at the expiration of one month the compulsory payment of pilotage would cease, thus leaving both parties free to make their own arrangements respecting pilotage. It was felt that this position would prove more acceptable to the pilots, as they might have some reasons to assume that they could make more satisfactory arrangements with the shipping interests.

"The Minister of Marine has, throughout all the negotiations, endeavored to give most reasonable consideration to the representations submitted by the pilots directly and by the Canadian Merchant Service Guild on their behalf. Inasmuch, however, as B.C. ports, more especially Vancouver, Victoria and Prince Rupert, are great national ports, and destined early to become even greater, it is felt that the public interests will benefit by the adoption of a policy which is more in harmony witih that which obtains at competing United States ports on the Pacific, while not jeopardizing any local interest or the individual interests of the pilots."

As stated in Canadian Railway and Marine World for May, Commander B. L. Johnston, D.S.O., who was appointed Superintendent of the British Columbia Pilotage District, at Victoria, from Jan. 1, resigned in April, and Chas. Eddie, Supervising Examiner of Masters and Mates, Western Division, Vancouver, was appointed to act in his place. The latter's duty as acting Superintendent ceased on May 5, when the B.C. Pilotage District and the compulsory payment of pilotage dues therein came to an end.

The order for the abolition of compulsory pilotage in B.C. waters became effective May 6, and the B.C. Pilotage Association, embracing all pilots serving formerly under the pilotage board notified all shipping companies that the services of its members would continue to be available for the navigation of ships between the William Head quarantine station and Victoria and Vancouver, as well as to and from Island and northern B.C. ports. The association has prepared a scale of rate, which is said to be very little different from the government scale, and this has been submitted to the shipping companies. The association's headquarters are at Vancouver, with a sub office at Victoria. The old pilotage office, at Dallas Road, Victoria, is being maintained by the association, which operates a launch out of William Head for the use of pilots boarding vessels.

## Quebec Steamship Company's Sale.

The Quebec Steamship Co., which was controlled and operated by Canada Steamship Lines, Ltd., has been sold to Furness, Withy & Co., which is closely allied with Canada Steamship Lines Ltd. The Quebec Steamship Co. came under the control of Canada Steamship Lines, Ltd., on the formation of the latter company in 1913, by the acquirement of at least 80% of its shares. At that time it operated a steamship service from Quebec to ports on the Lower St. Lawrence and to New York, and from New York to West Indies ports, but of late, the service has been confined to the New York-West Indies route.

The company owned the steamships Guiana, Korona and Parima, which are included in the transfer. The s.s. Guiana was built at Sunderland, Eng., in 1907, and is screw driven by engine of 445 h.p., and has the following dimensions,— length 345 ft., breadth 44.2 ft., depth of hold 24.9 ft.; tonnage, 3,657 gross, 2,294 net. The s.s. Korona, formerly Monmouthshire, was built at Govan, Scotland, in 1886, and is screw driven, by engine of 600 h.p., her dimensions being, length 344 ft., breadth 44.2 ft., depth of hold 26.5 ft.; tonnage, 2,874 gross, 1,871 net. The s.s. Parima, formerly Bungaree, was built at Newcastle upon Tyne, Eng., in 1889, and is screw driven by engine of 450 h.p., and has the following dimensions,—length 335 ft., breadth 42.1 ft., depth of hold 24 ft.; tonnage, 2,990 gross, 1,875 net.

**Hydrographic Charts.**—The Naval Service Department's Hydrographic Survey has published the following charts, no. 405 Hudson Bay and Hudson Strait, corrected to Oct., 1919; no. 211 St. Lawrence River from Father Point to Pointe aux Orignaux; and no. 209 Saguenay River, St. Fulgence to Shipshaw, corrected to Apr., 1920. Copies may be obtained from the department at 15c each.

**Victoria, B.C., Harbor Improvements.** The further supplementary estimates for the year ended Mar. 31, 1920, submitted to the House of Commons recently, contained an item: "Victoria harbor improvements. Further amount required, $24,600."

# General Shipbuilding Matters Throughout Canada.

B.C. Marine Ltd., Vancouver, is reported to have been awarded a contract by the Hudson's Bay Co. for an auxiliary powered schooner for carrying supplies to its trading posts in the Arctic circle. The ship is, it is said, to be strongly built, to withstand the severe northern weather and ice, and delivery is to be made about October.

Canadian Vickers, Ltd., Montreal. — The s.s. Tatjana, the launching of which at this yard was mentioned in our last issue, is the third steamship built by this company for Norwegian interests, and is owned by Winge & Co., Christiania, Norway. She was built under the supervision of Norwegian Veritas, and was expected to be fully completed and ready for her cargo by the end of May. She is fitted with triple expansion engines, and 3 Scotch boilers, adapted for either coal or oil fuel, and the boilers are fitted with Howden's forced draft system. The double bottom tanks, and a deep tank amidships, will carry about 1,500 tons of fuel oil. The cargo handling equipment is thoroughly up to date, the cargo winches and windlass being of Clarke-Chapman design, the steeering gear of Bow-McLachlan (Mcintosh patent) direct acting type, all manufactured by Canadian Vickers, Ltd. The steering from the navigating bridge is by means of a MacTaggart & Scott telemotor, and it is also controlled mechanically from the poop deck, where there is also a hand steering arrangement, and a complete equipment of mechanical engine room and steering telegraphs. Her dimensions are,—length over all 413 ft., beam 52 ft., depth 31 ft. 0⅞ in., and her draft when loaded with 8,300 tons cargo will be 25 1/3 ft. A sister steamship was launched May for A. Monsen, Toensberg, Norway, and this will be followed later in the year by two similar steamships, but of 6,400 tons, for the Norwegian-America Line.

Steel cargo steamship Braheholm, approximately 8,800 d.w. tons, built for Swedish-American-Mexican Line, Gothenburg, Sweden, by J. Coughlan & Sons, Ltd., Vancouver, B.C.

J. Coughlan & Sons, Ltd., Vancouver, B.C.—The s.s. Braheholm, the launching of which for the Swedish American Mexican Line, Gothenberg, Sweden, was mentioned in our last issue, underwent her trial trip Apr. 22, and maintained a mean speed of 12.6 knots an hour, six times over the measured mile, her highest run being 13.5 knots an hour. She was delivered to J. A. Sturrock, the owners' representative, Apr. 23, and sailed from Vancouver, Apr. 24, for Tacoma, Wash., to load grain for Alexandria, Egypt.

The company has under construction for subsidiary companies, 2 steel cargo steamships of approximately 8,800 d. w. tons each, similar to the s.s. Braheholm. The keel of the first was laid March 4, and on her launch she will be named Margaret Coughlan.

Harbour Marine Co., Victoria, B.C.—At a meeting of the company's employes at the end of April, a resolution was passed that the Harbour Marine Veterans Association make a strong appeal to the Dominion Government for further contracts for the company, the granting of which would relieve the unemployment situation among returned soldiers. It was stated that the work carried on at the yard had very materially assisted the work of re-establishment, as many of the men originally taken on as unskilled labor, after demobilization, have developed into skilled workmen. As the work on the two steamships now under construction, Marine Department's contracts 29 and 30, Canadian Winner and Canadian Traveller respectively, each approximately 8,390 d.w. tons, is proceeding, men are being laid off, thus increasing the labor difficulties.

The C.P.R. is reported to have ordered a steel car ferry from this company for service between the mainland and Vancouver Island. It is stated that the price is approximately $200,000 and that it is to be delivered during October. It will have capacity for 18 cars and will be of the following dimensions,—length 270 ft., breadth 48 ft., depth 12 ft.

Leclaire Shipbuilding Co., Sorel, Que. P. L. Turgeon, 55 St. Francois Xavier St., Montreal, curator in the insolvency of this company, offered for sale by public auction, May 10, the company's movable assets, including the following,—bills receivable $5,000, a steam barge with scow named Richelieu, a compound marine engine, a tug hull, 2 motor cars, certain lumber rights, shares and sundries and the balance of purchase price, $5,500, due by virtue of a deed of sale.

Pacific Construction Co., Coquitlam, B.C., launched the motorship Kiltuish for the Western Packers Association during April. This is the second ship of this type to be launched by the company, the keel having been laid in January. Her dimensions are,—length overall 100 ft., breadth 18½ ft., depth of hold 9½ ft., draft 6 ft. 10 in. She carries 2,000 gal. of oil in her tanks and has fresh water tanks with capacity of 11 tons. The propelling machinery consists of a 150 h.p. Fairbanks-Morse type C.O. oil engine using about 1/12 of a gallon of fuel oil per h.p. hour with the engine under full load. The auxiliary machinery is operated by a Fairbanks-Morse 6 h.p. type Z engine, driving a line shaft mounted on SKF ball bearings. The hoisting equipment is operated by a Fairbanks-Morse 10 h.p. type Y semi Diesel engine. The speed of the ship is approximately 9½ knots an hour.

Polson Iron Works, Ltd., Toronto.—This shipbuilding plant, which was offered for sale by tender by the liquidator recently, under order from the Exchequer Court, is being offered for sale by private treaty, no tenders having been received.

Shelburne Shipbuilders, Ltd., Shelburne, N.S., launched the three masted schooner, Nellie T. Walters, May 3, for the trans-Atlantic fish carrying trade. She is owned by T. Walters, Garnish, Nfld., and is of 175 tons registered, and classed for 11 years in Bureau Veritas. The company has another schooner of 190 tons registered, under construction for Newfoundland parties.

Victoria (B.C.) Shipowners Ltd., Victoria, B.C.—The keel of the first of the four wooden barquentines of 2,400 tons capacity each, which are being built under aid by the Dominion Government, in order to relieve unemployment in British Columbia, was laid at the Cholberg shipyard, Victoria, May 1. These ships will be built to Lloyd's specifications, and under the supervision of a marine architect appointed by the Dominion Government. Full details of the agremeent under which the ships are being built were published in Canadian Railway and Marine World for May, page 276. The company's directors are:—J. W. Spencer, President and Chairman; C. Hoard, Vice President; J. O. Cameron, Capt. H. C. Hansen, W. Meed, Capt. M. D. Harbord, and F. B. Pemberton. Edwin Tomlin is Secretary-Treasurer.

G. E. Wagstaff, Port Greville, N.S., launched the tern schooner Burpee L. Tucker recently. She is 465 tons register, and equipped with auxiliary engine for hoisting sails and anchors. She was chartered to load plaster at Walton, N.S., for New York and is in charge of Capt. S. T. Salter, Parrsboro, N.S.

Wallace Shipyards, Ltd., North Vancouver, B.C., has been given a contract for repairs to the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John, which was damaged in collision with the same company's s.s. Prince Albert, near Dead Tree Point, recently. The contract price is stated to be $49,000. In addition to the repairs necessary, it is stated that the passenger accommodation will be increased.

Yarrows, Ltd., Victoria, B.C., has been given a contract for repairs to the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Albert, which was damaged in collision with the same company's s.s. Prince John, near Dead Tree Point, recently.

## Atlantic and Pacific Ocean.

The Zenith Transportation Co., operating to European points out of New York, is reported to have decided to make St. John, N.B., a port of call both inward and outward.

Canadian Pacific Ocean Services' s.s. Pretorian, from St. John, N.B., arrived at Glasgow, Scotland, May 4, in tow, having broken her rudder. She was docked there for repairs.

The St. Lawrence navigation season was reopened Apr. 25, by the arrival at Montreal of Canadian Government Merchant Marine's s.s. Canadian Aviator, from Glasgow, Scotland.

A London, Eng., press dispatch, May 13, stated that a well known British salvage firm is likely to undertake the raising of the s.s. Lusitania, which was torpedoed by the Germans during the war, off the Irish coast.

The first passenger steamships of the St. Lawrence navigation season to arrive at Quebec were the Anchor-Donaldson Line s.s. Saturnia and the Canadian Pacific Ocean Services s.s. Victorian, on May 3, in the order named and within an hour of each other.

The Ulster Steamship Co. (Head Line) announce that it will commence a direct steamship service between Montreal and Rotterdam, June 5, with the s.s. Dunaff Head, 8,000 d.w. tons capacity. Other steamships of the same class will be put in the service if trade warrants it.

Canadian Pacific Ocean Services' s.s. Empress of Britain is being equipped with fuel oil burning apparatus and is being generally overhauled and refitted for service on the St. Lawrence route. She did considerable war work, and carried a number of troops to and from Mediterrannean ports, especially to Gallipoli.

The Red Star Line's steamship service between Montreal and Antwerp, Belgium, was commenced May 22, when the s.s. Western Star sailed from Montreal, after having been overhauled by Canadian Vickers Ltd. It is intended to make three sailings each month; the other steamships which will be used, being, Western Ally, Aledo, Westpool and Henry Clay.

## Maritime Provinces and Newfoundland.

T. M. Kirkwood, Montreal, is reported to have bought 10 wooden drifters, built in Canada for war purposes, and anchored in Halifax harbor since the signing of the armistice.

The Reid Newfoundland Co. was reported to be negotiating in Great Britain recently, through its Vice President, R. G. Reid, for two steamships, to replace the two wrecked steamships, Dundee and Ethie, for its coastal service.

Canada Steamship Lines Ltd., is reported to be considering the establishment of a steamship service between Montreal, Charlottetown, P.E.I., Sydney, N.S., and St. John's, Nfld. Prior to the war a freight and passenger service over this route was operated by the Black Diamond Steamship Co.'s steamships, City of Sydney and Morwenna.

The Montreal Transportation Co.'s s.s. Atikokan, which was laid up at Sorel, Que., for the winter, was expected at Sydney, N.S., during May, to enter the ore and coal trade. She was built at West Superior, Wis., in 1895, and named John D. Trevor, and is of the whaleback type. She was in the Great Lakes trade for a number of years, and was taken to Quebec last year, having been cut in two to pass through the canals. She is screw driven by engine of 145 h.p. and has the following dimensions,—length 362 ft., breadth 38.8 ft., depth 18 ft.; tonnage 2,004 gross, 1,292 net.

The report of the port of St. John, N. B., for the year ended Mar. 31 shows that 412 steamships, and 191 sailing ships, with a total tonnage of 1,107,801 entered from sea, and 483 steamships and 178 sailing ships with a total tonnage of 1,-037,876 cleared outward. The tonnage increases over the previous year are 241,-604 in arrivals, and 266,614 outward. During the winter, between Nov. 1, 1919, and May 1, 1920, 12,004,157 bush. of grain passed through the C.P.R. elevators at St. John, compared with 17,863,766 bush. for the same period in the previous year. The Canadian National Rys. elevator at St. John handled 3,241,289 bush. of grain, against 1,378,654 bush. during the same period in the previous year.

The Dominion Coal Co., operating the Black Diamond Steamship Line, is reported to have bought the s.s. Daghild from the British Ministry of Shipping. She was built at Sunderland, Eng., in 1916, and is screw driven by engine of 570 h.p. Her dimensions are,—length 455 ft., breadth 58.1 ft., depth 33.2 ft.; tonnage, 8,000 gross, 4,862 net. She was owned formerly by Jenkins Bros., Cardiff, Wales, and, prior to the war, was chartered to the Dominion Coal Co., but was requisitioned by the Ministry of Shipping for war purposes. The Dominion Coal Co.'s charters, unexpired at the commencement of the war, still hold good, and the balance of the charter terms will, it is said, be carried out by the steamships, Rose Castle, Kamouraska, Lord Strathcona, Wabana, Lingan and Hochelaga. The first named ship is expected to arrive at Sydney, N.S., during June, the others following at intervals.

## Province of Quebec.

The Quebec Harbor Commission as reconstituted by order in council of Apr. 21, consists of Major General Sir David Watson, K.C.B., C.M.G., Chairman; Alfred Samuel Gravel, and Birgadier General T. A. Tremblay, D.S.O.

The Gulf of St. Lawrence Trading & Shipping Co. has been placed under the management of T. Harling & Co., Montreal, and it is stated that the service will be considerably improved between Quebec and lower gulf ports. It is also stated that a number of ships will be added to the fleet, either this year or next.

The s.s. Alberta, owned formerly by La Cie Generale d'Enterprises Publiques Ltee, Levis, has been dismantled and removed from the register. She was built at Sorel in 1905, and was screw driven by engine of 42 h.p., and had the following dimensions,—length 96.4 ft., breadth 17.7 ft., depth 6.9 ft.; tonnage, 125 gross, 62 net.

The s.s. General Morrison, one of a number of steel steamships built by the Dominion Shipbuilding Co., Toronto, during 1919, on yard account, most of which have been sold to Norwegian owners, has also been sold to Norwegian interests, and transfeered from the Canadian register. Her dimensions are,—length over all 261 ft., length between perpendiculars 251 ft., breadth 43½ ft., depth 24¼ ft.; tonnage, 2,490 gross, 1,519 net.

## Ontario and the Great Lakes.

The Governor of New York State has signed a bill appropriating $1,850,000, to complete the barge canal terminals at Buffalo, Rochester, and New York City.

It is proposed to form a Trent Valley Canal Waterways Association, amongst municipalities along the Trent canal, with the object of promoting tourist traffic to and from various points of interest along the route.

The Dominion Public Works Department has awarded a contract for the building of a sea wall at Toronto Island to Randolph McDonald Co., Toronto. The plant and material are being assembled on the site and work was expected to commence at the end of May.

It was reported May 13 from St. Catharines that work on the Welland ship canal had been resumed on a small scale, some dredging on section 5 having been started. It was also stated that the Dominion Dredging Co. was assembling its material for work on section no. 1 in the harbor at Port Weller.

The Pittsburg Steamship Co. is reported to have made arrangements for the construction of a dock with cargo handling machinery at Sault Ste. Marie, Mich. The dock will have a frontage of 748 ft. and will cost approximately $100,-000. The contract has been awarded to the Great Lakes Dredge & Dock Co.

The steamships Bickerdike, Cadillac, Fairfax, Haddington, Ionic, Maplehill, Murray Bay, Omaha, St. Irene, Tayler and Wyoming, owned by Canada Steamship Lines, have had their names changed to Maplebrook, Maplehurst, Maplegrove, Maplehill, Maplebranch, Maplegrange, Cape Diamond, Maplegreen, Cape St. Francis, Mapleheath and Mapleglen respectively.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above mean sea level for April, as follows:—Superior, 602.26; Michigan and Huron, 580.54; St. Clair, 574.80; Erie, 571.64, and Ontario, 245.55. Compared with the average April stages for the past 10 years, Superior was 0.62 ft. above; Michigan and Huron, 0.26 ft. above; Erie, 0.76 ft. below, and Ontario, 0.81 ft. below.

After a visit of Public Works Department engineers to Port Stanley, at the end of April, it was stated that the work of improving the harbor there would be undertaken immediately, this year's work to consist of dredging the turning basin, channel and outer harbor, the removal of the most dangerous portion of the submerged east pier, and the continuation of work on the west pier, which was stopped at the commencement of the war.

G. Sudds, as owner of the schooner Robert McDonald, which sank at the foot of Brock St., Kingston, last autumn, was summoned to the police court there, May 6, for refusing to comply with an order to remove the wreck. He pleaded that, having no funds, he would have to abandon the ship, and allow the city to remove the wreckage, but it was explained that although he was willing to abandon the wreck, that did not relieve him of the responsibility of clearing it up.

The s.s. A. E. Ames, owned formerly by Merchants Mutual Lines Ltd., and operated by Canada Steamship Lines Ltd., has been sold to U.S. parties, and transferred to U.S. register. She was built at Wallsend-on-Tyne, Eng., in 1903, her dimensions being, length 246 ft., breadth 37 ft., depth 24 ft.; tonnage, 1,637

gross, 1,020 net. She is equipped with triple expansion engine with cylinders 20½, 33 and 59 in. diar. by 36 in. stroke, and supplied with steam by two Scotch boilers, each 13½ ft. diar., by 10¼ ft. long, at 180 lb.

The s.s. Lakeside, bought recently by John E. Russell, contractor, Toronto, from M. J. Hogan, contractor, Port Colborne, Ont., has had her name changed to Joseph L. Russell. She was built at Windsor, Ont., in 1888 and has an oak hull with the following dimensions,—length b.p. 121 ft., breadth moulded 26 ft., depth moulded 9¼ ft. She is equipped with a fore and aft compound engine, having cylinders 19 and 32 in. diar. by 26 in. stroke, 240 i.h.p., at 100 r.p.m., and supplied with steam by a single fire box boiler 8½ ft. diar. by 1 4ft. long at 114 lb.

The s.s. North West, owned by C. A. Barnard, Montreal, was seized May 11, while at the Davie Shipbuilding & Repairing So.'s yard at Levis, on account of Buffalo parties, for an amount of $76,997.62 which is stated to be on account of a mortgage held in Buffalo. It is stated that the Davie Shipbuilding & Repairing Co. have a claim against the ship for $600,000. The ship, which came from Buffalo, N.Y., was cut in two, to pass through the canals, and is still in the same position. The name of the ship is stated to have been changed to Maplecourt and to have been transferred to the Canadian register.

The s.s. Wyoming, owned by Canada Steamship Lines, Ltd., and which was bought recently from the Wyoming Steamship Co., Buffalo, N.Y., has been transferred to the Canadian register under the name of Mapleglen. She was built at Buffalo, N.Y., in 1887, and has an oak hull with the following dimensions,—length b.p. 241 ft., breadth moulded 40 ft., depth moulded 24 ft. She is of the spar deck type, with steel boiler house, diagonal strapping on frames, steam pump wells, etc. She is equipped with fore and aft compound engine, with cylinders 24½ and 50 in. diar. by 52 in. stroke, 600 i.h.p. 79 r.p.m., supplied with steam by two fire box boilers, each 13½ ft. long by 10 ft. 8 in. diar. at 110 lb.

The Montreal Transportation Co. has bought the s.s. Pawnee, owned formerly by H. McMorran, Mich., and has transferred her to the Canadian register, under the name of Maplegulf. She was built in 1889 and underwent large repairs in 1910. Her hull is of oak and she is of the well deck type, with steel arches, iron lined boiler house, and with bow sheathed for operation in ice. Her dimensions are,—length b.p. 174 ft., breadth moulded 32 ft., depth moulded 13 ft.; tonnage 639 gross, 475 net. She is equipped with a Steeple compound engine, with cylinders 22 and 44 in. diar. by 40 in. stroke, 390 i.h.p., at 80 r.p.m., supplied with steam by a single firebox boiler 10 ft. 2 in. diar. by 16 ft. long at 120 lb.

The s.s. C. W. Chamberlain was damaged by fire at Cornwall, Ont., April 30, while undergoing extensive repairs. She is stated to be owned by the Martin Transportation Co., Kingston, Ont. She has an oak hull and was built at Walkerville, Ont., in 1881, and named C. N. Pratt, was rebuilt in 1890, and her name changed to C. W. Chamberlain. Her dimensions are,—length b.p. 127 ft., breadth moulded 26½ ft., depth moulded 9 ft. 7 in.; tonnage, 385 gross, 243 net. She is equipped with fore and aft compound engines, having cylinders 18 and 32 in. diar. by 26 in. stroke, 280 i.h.p., at 100 r.p.m., by Cuyahoga Furnace Co., Cleveland, Ohio, and supplied with steam by a Scotch boiler 10 ft. diar. by 11 ft. long, at a working pressure of 100 lb., by J. Inglis & Co., Toronto. Until recently she was owned by James Swift & Co., Kingston, Ont., who bought her about two years ago from Midland Transportation Co., Midland, Ont.

## Manitoba, Saskatchewan and Alberta.

A party of about 30 men were reported leaving Victoria and Vancouver early in May for Fort Smith, Alta., to build a number of wooden river boats for the Edmonton, Dunvegan and British Columbia Ry. for operation on the Peace River in connection with the railway.

## British Columbia and Pacific Coast.

A Victoria press report states that the H.M.C.S. Rainbow will be offered for sale by tender, prior to which her guns will be removed.

Reports from Yukon, about the middle of May, stated that the ice was rapidly breaking up on the Yukon River south of Dawson, and that steamboats were preparing to sail for the south for supplies for Dawson and lower river points.

A steamship service will be inaugurated early in July between Victoria, B.C., and Havre and Calais, France, via the Panama canal. The s.s. Pacific, 6,500 tons, will take the first sailing, and it is expected that grain will form the chief part of the cargo.

The C.P.R. is reported to be contemplating additional passenger accommodation to the s.s. Princess Royal. This, it is stated, will be placed in a new deck house, situated on the after boat deck, and will consist of 10 rooms for 10 passengers, thus giving a total accommodation for 164 state room passengers.

The Atlantic Salvage Co., which is working on the wrecked s.s. Platea, at Sable Island, expects to have the ship in Halifax harbor about the end of May, unless unforeseen difficulties are met with. The s.s. Platea, which was owned formerly by the Thomson Line, St. John, N.B., was sold, about a year ago, to Greek interests, and was wrecked on Sable Island last autumn.

The schooner Lady Mine has been bought by the Lady Mine Shipping & Fishing Co., Vancouver, for operation in the coasting trade from Prince Rupert to Stewart, Anyox and Alice Arm. She was built at Port Ludlow, Wash., in 1880, her dimensions being,—length 76 ft., breadth 21.9 ft., depth 8.4 ft.; tonnage, 55 registered. She is equipped with auxiliary power.

C.P.R. British Columbia Coast Service employes are negotiating with the management for changes in their general working conditions. The company has proposed an increase of $10 a month in wages, on the understanding that the present hours of work are maintained, or in lieu of this a change to an 8-hour day at the present rate of wages. It is also proposed to reclassify the men, whereby there would be two classes instead of three as at present. The whole proposals are said to have been laid before D. C. Coleman, Vice President, Western Lines, C.P.R.

H. G. Kelley, President, Grand Trunk Pacific Ry., replying to a letter from a committee of Prince Rupert men, relative to the operation of the Grand Trunk Pacific Coast Steamship Co. from Prince Rupert, instead of from Vancouver, has written to the effect that it must be admitted that the original selection of Vancouver as headquarters for the steamship line was justified by conditions at the time of organization. Certain changes have been made, and it is felt that conditions have warranted them, and acting on this the accounting office has been removed to Prince Rupert, and a Superintendent has been appointed there. The work on the company's ships is now all being done at the Prince Rupert shipbuilding plant. The force remaining at Vancouver is small in respect to the number of employes, and the whole matter of removal is under consideration, and will probably be dealt with when the whole situation as regards the operation of the company is settled.

## Harbors and Rivers Estimates.

The further supplementary estimates for the year ended Mar. 31, 1920, submitted to the House of Commons recently, contain the following items, under public works, chargeable to income:—

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|---|---|
| **NOVA SCOTIA.** | |
| Avon River bridge at Windsor, to pay Nova Scotia Provincial Government in full final settlement of all claims whatsoever for damage done or that may be done to the bridge by the construction by the Public Works Department in 1897-8 of a shear dam from the bridge abutment on the Falmouth side of the river | $7,164.57 |
| **QUEBEC.** | |
| Fort William, wharf repairs and improvements, further amount required | $ 350.00 |
| Vercheres, wharf, further amount required | 1,504.13 |
| **ONTARIO.** | |
| Belleville harbor, improvement to wharf and warehouse, further amount required | 916.35 |
| Midland, repairs to wharfs, further amount required | 1,800.00 |
| Port Hope, repairs to pier, further amount required | 1,800.00 |
| **MANITOBA.** | |
| Little Pehbina river, diversion to Pelican Lake, further amount required | $1,146.37 |
| **MISCELLANEOUS.** | |
| Surveys and inspection, further amount required | $15,000.00 |

## Mail Subsidies and Steamship Subventions.

The further supplementary estimates for the year ended Mar. 31, 1920, submitted to the House of Commons recently, contain the following items:—

| | |
|---|---|
| Victoria, Vancouver, way ports, and Skagway, steam service between, further amount required | $12,500.00 |
| Vancouver and ports on Howe Sound, steam service between | 3,334.00 |
| Expenses in connection with supervision of subsidized steamship services, further amount required | 500.00 |

**Contracts Let for Marine Public Works.** The Dominion Public Works Department has let the following contracts: General restoration and fitting up of interior, including electric elevator, of marine stone building on King's wharf, Quebec, Que., Apr. 21, L. H. Peters Ltd., Quebec, Que., $8,205; construction of crib work extension to wharf at Sober Island, N.S., Apr. 22, M. Naugle, West Lawrenctown, N.S., schedule of prices; construction of harbor works, turning basin, ventilation channel, breakwater at Toronto, Roger Miller & Sons, Toronto, on basis of cost plus 7½%; construction of wharf at Stewart, B.C., Apr. 22, W. T. Muse, Prince Rupert, B.C., schedule of prices; repairs to dredge no. 1 (Quinlan & Robertson), May 11, Montreal Dry Dock & Ship Repairing Co., Montreal, $13,625.

# Cutting in Two of Steamship North Land.

The s.s. North Land, 400 ft. long, 44¼ ft. beam, 25 ft. moulded depth, 17 ft. draft, 4,870 tons burthen, 2 quadruple compound engines of 3,500 h.p. each and 10 Scotch marine boilers, built, owned and operated by the Northern Steamship Co. to carry passengers between Chicago and Buffalo, and Duluth and Buffalo, in connection with the Northern Pacific Ry., which is said to have been the only steamship of U.S. registry built to carry passengers and no freight, having a capacity of 500 owner. The sister ship, North West, was taken through the same route in 1918; her cabins were taken off and engines and boilers removed, and the ship placed in drydock to be cut in two at a cost of about $250,000. The cost of cutting the North Land in two while afloat and making her ready for the voyage was less than $60,000. Benj. L. Cowles, President, and David Welch, Superintendent, Cowles Shipyard Co., agreed to do the work on the North Land, as heretofore outlined, and guaranteed the passage

Steamship North Land, before being cut in two.

first class passengers, was cut in two parts last autumn at the Cowles shipyard, Buffalo, N.Y., while afloat alongside of its wharf in Buffalo River; wooden bulkheads were placed in the ship about 10 ft. apart and made water tight. The ship was then ballasted with pig iron, so as to float properly after being separated in to two sections, a canvas jacket was placed around the ship on the outside of the hull, and the ship was separated by burning with an acetylene torch. The burning was done through the canal for not to exceed $75,000. The work was done in 6 weeks time. She left Buffalo in two sections, the forward section leaving on Nov. 9, 1919, in tow of the Reid Wrecking Co.'s tugs Smith, and Manistique. She passed through the Welland Canal and laid at Port Dalhousie until Nov. 25, when she left there in tow of the Montreal Transportation Co.'s tugs Bronson and Thompson, arriving in Sorel Dec. 6. The after section left Buffalo Nov. 13 in tow of the tugs Smith and

Steamship North Land, after being cut in two and separated.

in 2 days of 8 hours each, the number of feet burned was 80 below the water line or under water, and in some places, and especially at the keel place at the bottom of the ship, were 3 thicknesses of ¾ in. steel plate. The cutting was begun at the bottom of the ship and proceeded from that to the top of each side. Some experts are said to have declared that this could not be done in water, and the ship made to draw 14 ft. of water to pass through the Canadian canals and St. Lawrence River to Lauzon, Que., where the ship was to be joined together by the Davie Shipbuilding and Repairing Co., which is the new Manistique, passed through the Welland Canal and left Port Dalhousie on Nov. 28, arriving at Coteau Landing, Que., Dec. 12.

It has been impossible to get any definite information as to when and where the North Land's two sections are to be re-joined. It was first reported that the ship had been sold to the Davie Shipbuilding & Repairing Co., and would be re-joined by that company at Lauzon, Que. On enquiring of that company's President, C. A. Barnard, Montreal, we were informed that the ship had been re-transferred to the Northern Steamship Co., represented by E. Parsons, of Parsons & Eggert, insurance brokers., N.Y. An enquiry to him was replied to by Henry Parsons, Vice President, Paragon Shipping Corporation, New York, who stated that he was taking care of all matters in connection with the North Land and that the only information he could give was that, in order that other ships might go through the Coteau Landing lock, the North Land's stern section would probably be moved to the bow section's present location, which, as above stated, we understand to be at Sorel, Que.

Since the above was put in type, we were advised, on May 10, that the North Land's stern section had been taken to Montreal, pending instructions from the Northern Steamship Co.'s directors, as to whether the ship will be sold as it is, or whether the two sections will be joined together again.

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**Rebates on Newfoundland Shipbuilding.**—A bill to amend the Shipbuilding Act passed the Newfoundland House of Assembly May 6, providing rebates of duty paid on materials used in the construction of ships built in the colony, the keels of which were laid after the passing of the act, and of a greater tonnage than 150, and on ships of greater tonnage than 120, the keels of which were laid after Oct. 19, 1917, and before the passing of th eact. It also provides that no bounty, as provided in chap 176 of the statutes, shall be paid on any ship, the keel of which was laid after the passing of the act, whose tonnage on builder's measurement exceeds 150 tons, provided, however, that if the tonnage does exceed 150 tons and does not exceed 160 tons, and it is certified that the builder bona fide attempted to confine the measurement to 15 0tons, the bounty may be paid on 150 tons. Considerable opposition was shown to the retroactive clause of the bill.

**B. C. Yacht and Boat Builders Co. Ltd.** has been incorporated under the British Columbia Companies Act, with $10,000 authorized capital, and office at Victoria, to build and repair mercantile and pleasure ships of every description, and carry on business as engineers, ship chandlers, sail makers, etc. It is stated, locally, that the incorporators are about 12 veterans of the recent war, and that they have obtained a grant of $10,000 from the British Columbia Government, to assist them in the business.

**C. G. S. Canada.**—The Minister of Marine stated in the House of Commons recently, in answer to a question, that no instructions had been issued that the C. G. S. Canada is to be sold, and added that this ship had been replaced by the C. G. S. Hochelaga.

# Dominion Wreck Commissioner's Enquiries and Judgments.

Enquiries have been held and judgments delivered respecting the following casualties:—

**Canadian Voyageur-Howard D. Troop Collision.**

Held at St. John, N.B., Apr. 23, into the collision of Canadian Government Merchant Marine's s.s. Canadian Voyageur, and the St. John pilot boat Howard D. Troop, in the Bay of Fundy, Apr. 17, resulting in the loss of the latter ship, by Capt. J. B. Henry, commissioner, and Capts. A. J. Mulcahy and S. Orr, as nautical assessors. The Howard D. Troop was a schooner rigged ship, with 60 h.p. auxiliary engine, for a 7 knot speed, and at the time of the collision had 4 licensed pilots and 3 apprentice pilots on board. On Apr. 17, when the schooner sighted the steamship, the weather was dark and clear, with a strong east breeze, and a heavy sea, and she was running down the south channel, between Petit Passage and Grand Manan. The usual blue flare was shown by the schooner, and answered, and as the ships approached, the Voyageur's head veered to north and east, showing all three lights, also the lantern on the port side, to indicate the ladder. When the small pilot boat was leaving the schooner, the Voyageur's head veered to south, then making the starboard the lee side, the boat passing round the stern. The schooner then ran down across the Voyageur's bow for about half a mile, under sail only, and when she tacked she was about abeam, or slightly abaft the steamship's beam. After tacking, the helm was put down, preparatory to picking up the small boat, and it was noticed that the Voyageur was not going ahead as expected, but drifted down on the schooner. The schooner, being in the lee of the steamship, did not feel the effect of the breeze on her sail, and the auxiliary engine was not going long enough to enable her to get out of the way. On the Voyageur, the pilot having ordered full speed ahead, and the telegraph having been moved accordingly, the answer came from the engine room, "Stop," and the master went to the engine room to ascertain how long before the engines could proceed, notwithstanding the fact that there is a speaking tube. He returned to the bridge, after an absence of two minutes, and found the pilot boat 30 or 40 ft. from the ship's side, heading at an angle of about 45 deg. from the starboard beam. About two minutes after, he was informed by the engine room that the engines were all right, but it was then too late.

After Section of Steamship North Land, after being separated, showing wooden bulkhead.

The court found that the Canadian Voyageur's engines could not proceed, on account of being choked, and not responding as quickly as the occasion demanded. The master should not have left the bridge without leaving a competent officer in charge, ignoring the speaking tube, when it was of vital importance that he should have remained and signalled the pilot boat that his vessel was temporarily out of control. The opinion was also expressed that the pilot boat did not make sufficient allowance for the lee drift of the steamship, according to the ordinary practice of seamen, and it found that the master of the pilot boat adopted a wrong manoeuver in putting his auxiliary engine full speed ahead, instead of astern, away from danger, at a critical time, and criticized the fact that the man who attended the engine was away on the small boat, and that the master left the wheel to attend to the engine. Everything was done in the Voyageur's engine room that the occasion required, and it was found that Capt. J. D. Mackenzie, of the Canadian Voyageur, and Capt. F. McKelvey, of the Howard D. Troop, committed errors in leaving their respective decks when their duties were to overcome the accident, and that therefore they both contributed to the collision, and were cautioned accordingly.

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**Toronto Harbor Improvements.** — T. Foster, M.P. for York, Ont., asked in the House of Commons recently:—"Is it the government's intention to contribute to the improvements in Toronto harbor in the same proportion as in the other large harbors of the Dominion? If not, why not?" Hon. J. D. Reid, acting Minister of Public Works, replied:—"Up to the commencement of the Canadian Stewart Co.'s contract for Toronto harbor improvements, which was the portion of the comprehensive scheme of development to be done at the direct cost of the government, there has been expended by the Public Works Department in the improvement of Toronto harbor $2,323,-191.75. Since that date, there has been expended on the harbor by the Public Works Department $3,691,068.01, and further work, estimated to cost $1,500,-000, is to be proceeded with during the construction seasons of 1920 and 1921."

**Ships under Board of Railway Commissioners.**—J. E. Armstrong, M.P. for Lambton, Ont., asked in the House of Commons recently, how many ships are under the Board of Railway Commissioners, as regards rates, tolls, tariff agreements, and arrangements, what are their names, the deadweight tonnage of each, and the routes on which they run? The Minister of Railways replied that the Board of Railway Commissioners had not the definite information that would enable it to reply to these questions. Tariffs filed in conformity with the Railway Act, secs. 336 and 358, do not show the names of the ships or their tonnage, nor does the act call for this information.

The C. G. S. **Champlain** has been sold by the Marine Department to the Gulf of St. Lawrence Shipping & Trading Co. for $61,050. She was built at Paisley, Scotland, 1904, and has the following dimensions,—length 120 ft., breadth 30¼ ft., depth 17½ ft.; tonnage, 522 gross, 235 net. She is equipped with compound surface condensing engine, with cylinders 22½ and 46 in. diar. by 24 in. stroke, and supplied with steam by a Scotch boiler, 16 ft. diar. by 11 ft. long, at 120 lb. working pressure. The company has appointed Capt. A. Fournier as master, and J. Costin as chief engineer.

**Toronto Grain Elevators.**—T. Foster, M.P. for York, Ont., asked the following question in the House of Commons recently:—In view of the strong representations made for the construction of elevators in Toronto harbor, is it the policy of the government to build such elevators or grant a bonus to assist in building them? Sir Geo. Foster replied: It is not the present intention of the government to construct or to aid in the construction of grain elevators in Ontario ports.

The Atlantic Coast Shipbuilders' Association states that on April 1st, 104 tankers, or 722,549 gross tons were building in U.S. yards on private account. New orders started during March totaled 129,455 gross tons. Revision of tonnage figures, however, would indicate an increase in tankers under construction at end of March of 133,984 tons, as compared with February.

# Mainly About Marine People.

E. H. Beasley, Managing Director, Union Steamship Co. of British Columbia, Vancouver, was instantly killed May 24, when an aeroplane, in which he was accompanied by Major A. R. Baker, who was seriously injured, fell to the ground from a height of 2,500 ft., while taking a flight over Vancouver and district. At the time of the accident they were preparing to make a landing at Minor Park, Lulu Island. Mrs. Beasley had previously taken a flight in the machine and witnessed the accident.

**Robert Bell**, heretofore chief engineer of the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince George, has been appointed Superintendent Engineer, Canadian Fish & Cold Storage Co., Prince Rupert, B.C.

**Capt. R. Cann**, who died at Yarmouth, N.S., recently, aged 66, was in Hugh Cann & Son's service there for a number of years, in charge of sailing ships, and later was engaged with a New York shipping company, but retired from active service a few years ago.

**G. M. Bosworth**, Chairman, Canadian Pacific Ocean Services, Ltd., and Mrs. Bosworth, who spent the winter at the Ritz-Carlton, Montreal, have gone to their summer home at Senneville, Que.

**Harry F. Bradley**, Assistant General Passenger Agent, Canadian Pacific Ocean Services, Ltd., Montreal, died at Gaspe, Que., May 19, where he had gone for his health. He was born at Waterville, Que., July 20, 1876, and tentered transportation service in 1898, since when he has been, to 1906, in various positions in the Passenger Department, Montreal; 1905 to 1912, General Agent, Toronto; 1912 to July 15, 1917, Manager, Passenger Department, all with H. & A. Allan, General Agents, Allan Line Steamship Co., and from Nov., 1917, was Assistant General Passenger Agent, Canadian Pacific Ocean Services Ltd., Montreal.

**Clarence I. de Sola**, who was prominently engaged in the steamship business in Montreal, and acted as Canadian representative for Swan Hunter and Wigham Richardson, Ltd., shipbuilders, Wallsend-on-Tyne, Eng., died at Boston, Mass, May 12. He was born at Montreal, Aug. 15, 1858, and was appointed Consul for Belgium at Montreal in 1904, in recognition of his services in promoting commerce between Canada and Belgium. From 1887 he was Managing Director of the Comptoir Belgo-Canadian, a syndicate of leading Belgian steel manufaccontractors, and in this capacity he carturers, structural bridge and railway ried out several contracts in Canada, among them being lock gates, etc., on the Soulanges and Trent Canals, the retracking of portions of the Intercolonial and Prince Edward Island Rys., and the construction of several public bridges. As a director and Canadian representative of Swan Hunter and Wigham Richardson Ltd., he was responsible for building several steamships for Canadian trade on the Great Lakes, St. Lawrence River and the Atlantic Ocean, some of these being for Canadian Government service. He was President, Ocean & Inland Transportation Co., director, Donald Steamship Co., Canadian Marine & Commercial Co., President, Oceon Steamship Co. of Canada; Managing Director, Walford Forwarding Co., and was associated with several other transportation companies. During the war he acted as an official of the Canadian Patriotic Fund, was Vice President of the Belgian War Relief Fund, and for his services was made a Chevalier of the Order of Leopold, by the King of the Belgians.

**Capt. Frederick Elliott**, President and Manager, Victoria Navigation Co., Thurso, Que., died suddenly on the train at Calumet, while travelling between Thurso and Montreal, May 9. He was one of the best known navigators on the Ottawa River.

**R. B. Glenn**, a member of the International Joint Waterways Commission, which is holding sittings at various points in the west in connection with the proposals for the improvement of the St. Lawrence route, died suddenly, from heart failure, at Winnipeg, May 16.

**Capt. H. S. Hilton**, master of the Canadian Government Merchant Marine s.s. Canadian Aviator, was presented with a gold mounted walking stick, by the Montreal Harbor Commissioners recently, his being the first ocean steamship to arrive at Montreal this season, viz., Apr. 25.

**Capt. C. Hinckley**, one of the oldest navigators on the St. Lawrence River, died at Kingston, Ont., May 13, aged 79. He served for many years under the Folger Co., out of Kingston, and later under the Richelieu & Ontario Navigation Co.

**Commander B. L. Johnston**, D.S.O., who resigned as Superintendent of British Columbia Pilotage District, Victoria, B.C., recently, is reported to have been appointed Manager of a new whaling company, with a station on Barclay Sound, and to have left for England with the view of buying two steamships for whaling purposes.

**R. Knox**, heretofore chief engineer, Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Albert, has been appointed chief engineer of the same company's s.s. Prince George, vice R. Bell, resigned.

**Sir James McKechnie**, K.B.E., Managing Director, Vickers Ltd., of London, Eng., is visiting Canada, and is touring the properties owned and controlled by the various companies with which his firm is associated, as well as inspecting several ports on the Canadian seaboard and the Great Lakes.

**C. H. Nicholson**, Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C., has been appointed a special commissioner for British Columbia, in connection with the aerial derby round the world, which is to take place between July 4 and Jan. 3, under the auspices of the Aero Club of America and the Aerial League of America. He will supervise the arrangements necessary for the convenience of the flying men on their flight up the Pacific coast en route to Japan.

**J. W. Norcross**, President Canada Steamship Lines, and H. B. Smith, President Northern Navigation Co., left Sarnia, Ont.. May 19, on the s.s. Harmonic, for the head of Lake Superior, accompanied by Sir James McKechnie, Managing Director, Vickers Limited, England, and a number of persons engaged in North Atlantic shipping.

**H. B. Smith**, President, Collingwood Shipbuilding Co., and Northern Navigation Co., and a director Canada Steamship Lines, etc., has removed from Owen Sound, Ont., to Toronto, where he has bought a house at 355 St. Clair Ave. West.

## General Steamship Inspector for Collingwood.

The Civil Service Commission gave notice recently that applications would be received from persons qualified to fill the following position:—A Steamship Inspector (General) at Collingwood, Ont., in the Marine Department, at an initial salary of $2,700 a year, which will be increased upon recommendation for efficient service at the rate of $180 a year, until a maximum of $3,240 has been reached. In addition to the above compensation, the salary will be supplemented by a bonus as provided by law.

Duties.—To inspect the boilers and machinery and hulls and equipment of steamships during construction, and from time to time as required by law, to determine whether they are sufficient for the service intended and in good condition; to examine plans of ships and their equipment, marine machinery and boilers submitted for the purpose of determining by calculation of the strength of the various parts whether they can receive approval; to advise builders, owners and others concerned in the matter of construction of ships and materials required to keep the same in efficient condition; when satisfied as regards the sufficiency of ships, their boilers and machinery, and that the law as regards certified officers, etc., has been complied with, to issue a statutory certificate of inspection; to examine candidates for mining engineer certificates; to act as a member of the Board of Steamship Inspection occasionally as required; to investigate the report on accidents and breakdowns happening to ships, their boilers and machinery; to supervise and report on repairs to government ships, their boilers and machinery; and to perform other related work as required.

Qualifications.—Education equivalent to graduation in engineering from a technical school of recognized standing with a thorough knowledge of the theory and practice of marine engineering and ship construction; at least 12 years practical experience in the design, construction, maintenance or operation of ships, marine engines and boilers. While a definite age limit has not been fixed in this competition, age may be a determining factor when making a selection.

Examination.—Subjects and weight as follows: Education and Experience, 300; Oral Interview, if necessary in the opinion of the Commission, 100.

**Welland Canal Lock Gate Accident.**—The first lock gate accident of the season took place Apr. 29, when the Montreal Transportation Co.'s s.s. Stormount, while upbound and light, struck the upper gates of lock 3, carrying them out, and unstepping and damaging the tow path lower gate, necessitating the placing in position of three spare gates. The accident took place at 5.15 p.m., and the gates were in position and navigation was resumed by noon the next day, and, as there were no ships in the immediate vicinity, there was practically no delay to navigation. The ship was damaged to a minor extent, a line chalk being pulled out from its moorings, a plate in the compressor broken, several rail stanchions and part of the bulwarks broken, and the rudder slightly damaged. The rear slope of the easterly bank at the head of lock 2 was washed out, but not seriously. The cost of repairing the damage was about $7,500. It is stated that the cause of the accident was difficulty experienced in reversing.

# United States Ships to go via the St. Lawrence to the Sea.

During the ensuing navigation season 57 steamships of about 4,250 d.w. tons each and 26 ocean going ships built on the Great Lakes for the United States Shipping Board, Emergency Fleet Corporation, will be taken through the Welland Canal, Lake Ontario, and the St. Lawrence River and Canals to the sea. We are advised by the Emergency Fleet Corporation's Montreal office, E. Quackenbush, agent, and M. A. Baisaire, Port Captain, that 35 of the ships are ready for delivery at the opening of navigation, and that the folowing is the estimated expenditure on them preparatory to their sailing from Montreal:—

**57 Ships of about 4,250 d.w. ton.**

| | |
|---|---|
| Repairs, at $300 each | $17 100 |
| Engineer stores, at $300 each | 17,100 |
| Steward supplies, at $2,000 each | 114,000 |
| Deck stores, at $300 each | 17,100 |
| Fuel oil estimate | 200,000 |

**26 Ocean going tugs, coal burners.**

| | |
|---|---|
| Fuel . . | $ 6,000 |
| Stores, engineers, deck and steward, etc | 2,800 |
| Repairs . . | 1,500 |
| Total . . | $375,600 |

Following is a list of the ships and tugs. The number given of each is the Emergency Fleet Corporation's.—

**Ships to be delivered in 1920.**

| No. | Builders. | Name. |
|---|---|---|
| 1793 | American Ship Bldg Co., Detroit | City of Flint |
| 1794 | " " " " | Detroit-Wayne |
| 1763 | Saginaw Ship Bldg Co., Saginaw | Elmac |
| 1880 | Great Lakes Eng. Works, Ecorse | Elmont Lake |
| 1882 | " " " " | Elmsford Lake |
| 1883 | " " " " | Elmwood Lake |
| 1888 | " " " " | Elsah Lake |
| 1890 | " " " " | Elva Lake |
| 1891 | " " " " | Elwin Lake |
| 1799 | American Ship Bldg. Co., Detroit | Falun Lake |
| 1801 | " " " " | Fandango Lake |
| 1802 | " " " " | Fandon Lake |
| 1861 | McDougal-Duluth Co., Duluth | Fargo |
| 1825 | American Ship Bldg Co., Lorain | Fenn Lake |
| 1826 | " " " " | Feodora Lake |
| 1841 | Toledo Ship Bldg. Co., Toledo | Fillmore Lake |
| 1852 | Globe Ship Bldg Co., Superior | Flag Lake |
| 1864 | McDougal-Duluth Co., Duluth | Floravista Lake |
| 1865 | " " " " | Florian Lake |
| 1866 | " " " " | Floris Lake |
| 1867 | " " " " | Flournoy Lake |
| 1824 | American Ship Bldg Co., Lorain | Franklin County |
| 1761 | Saginaw Ship Bldg. Co., Saginaw | Furnas Lake |
| 1754 | Manitowoc Ship Bldg Co., Manitowoc | Galien Lake |
| 1755 | " " " " | Galisteo Lake |
| 1760 | Saginaw Ship Bldg Co., Saginaw | Ganado Lake |
| 1763 | " " " " | Gano Lake |
| 1764 | " " " " | Gara Lake |
| 1765 | " " " " | Gardeau Lake |
| 1775 | American Ship Bldg Co., Chicago | Gert Lake |
| 1776 | " " " " | Getaway Lake |
| 1777 | " " " " | Geyser Lake |
| 1778 | " " " " | Giddings Lake |
| 2352 | Globe Ship Bldg Co., Superior | Glaucus Lake |
| 1863 | McDougall Duluth Co., Duluth | Great Falls |
| 2353 | Globe Ship Bldg Co., Superior | Gunni Lake |
| 2611 | Manitowoc Ship Bdg Co., Manitowoc | Heresti Lake |
| 1823 | American Ship Bldg Co., Lorain | Henry County |
| 1827 | " " " " | Indiana Harbor |
| 1792 | " " " " | Inglenook Lake |
| 1860z | z " " " Detroit | McCreary County |
| 1797 | American Ship Bldg Co., Detroit | Hancock County |
| 2354 | Globe Ship Bldg Co., Superior | Harminia Lake |
| 2355 | " " " " | Hector Lake |
| 1844 | Toledo Ship Bldg Co., Toledo | Pulaski |
| 1747 | Manitowoc Ship Bldg Co., Manitowoc | Ripon |
| 1842 | Toledo Ship Bldg Co., Toledo | Rushville |
| 1759 | Manitowoc Ship Bldg Co., Manitowoc | Sioux City |
| 1862 | McDougall-Duluth Co., Duluth | Sioux Falls |
| 1881 | Great Lakes Eng. Works, Ecorse | Slavi Lake |
| 1800 | American Ship Bldg. Co., Detroit | Tippah Lake |
| 1798 | " " " " | Treba Lake |
| 1843 | Toledo Ship Bldg Co., Toledo | Union Liberty |
| 1796 | American Ship Bldg Co., Detroit | Vinton County |
| 1758 | Manitowoc Ship Bldg Co., Manitowoc | Wauwatosa |
| 1860 | McDougall-Duluth Company, Duluth | Lacrosse |

**Tubs to be delivered in 1920.**

| No. | Builders. | Name. |
|---|---|---|
| 2811 | Northwest Eng. Co., Green Bay | Allouez |
| 2516 | Dachel-Carter B. Co., Benton Harbor | Badger |
| 2576 | Burger Boat Co., Manitowoc | Beagle |
| 2587 | Leathern & Smith Tow & Wreck Co., Sturgeon Bay | Bear |
| 2785 | " " " " " | Bullock |
| 2788 | " " " " " | Burro |
| 2789 | " " " " " | Camel |
| 2810 | Northwest Eng. Co., Green Bay | Fort Howard |
| 2517 | Dachel-Carter C. Co., Benton Harbor | Leopard |
| 2044 | Whitney Bros. Co., Superior | Kaleen |
| 2066 | Northwest Eng. Co., Green Bay | Moositauke |
| 2069 | " " " " | Outagamie |
| 1786 | Leathern & Smith Tow & Wreck Company, Sturgeon Bay | Ox |
| 2574 | Burger Boat Company, Manitowoc | Pointer |
| 2809 | Northwest Eng. Co., Green Bay | Pottawotamie |
| 2070 | " " " " | Pyos |
| 2575 | Burger Boat Company, Manitowoc | Spaniel |
| 2067 | Northwest Eng. Co., Green Bay | Toopi |
| 2065 | " " " " | Vallonia |
| 2808 | Northwest Eng. Co., Green Bay | Green Bay |
| 2040 | Whitney Bros. Co., Superior | Kipkee |
| 2041 | " " " " | Kiron |
| 2042 | " " " " | Kitchi |
| 2043 | " " " " | Kolda |
| 2573 | Burger Bros. Co., Manitowoc | Setter |
| 2807 | Northwest Eng. Co., Green Bay | Tomah |

## Canadian Notices to Mariners.

The Marine Department has issued the following notices:—

**British Columbia, Cousins Inlet, Wallace Bay.**—T. S. Guns, a British Columbia pilot, Victoria, reports the existence of a rock near Wallace Bay, Cousins Inlet, about ½ mile, 128 degrees, from the light on Wearing Point, at a depth of 8 ft. The locality will be examined by the Hydraulic Survey as soon as possible.

**British Columbia, Vancouver Island, Esquimalt Harbor.**—Unchartered shoal spots have been found in Esquimalt harbor, at 4 points, at 21, 35, 34 and 33 ft. deep, respectively.

**Nova Scotia, South Coast, Lunenburg Harbor.**—The black can buoy on southeast point of Long shoal will be replaced by a black steel cylindrical gas buoy, showing an occulting white light, without further notice.

**Ontario, Lake Erie, Pelee Passage.**—During July the submarine bell, on the southeast shoal lightship, will be run continuously, to enable masters of ships equipped with submarine apparatus to test their apparatus and familiarize themselves with the use of submarine signals.

**Ontario, Lake St. Clair.**—At the mouth of the Thames River, at the outer end of the dredged cut, 1½ miles from the Thames River main light, the gas buoy is adrift; further notice will be given when it has been replaced.

**Ontario, Lake Superior, Otter Island.** It is proposed to establish a fog alarm at Otter Island light station on the northwest end of the island, and the establishment of a light will be deferred until construction is commenced, which will be about midsummer.

**Ontario, Presqu'ile Bay.**—The Brighton no. 1 range light tower has been blown down, and until it is re-erected, a temporary fixed white light, shown from a lantern on a pole, has been placed on the pier.

**Ontario, Rideau Canal.**—All lights on floats and tripods on the Rideau canal between Smiths Falls and Kingston have been discontinued.

**Quebec, River St. Lawrence, Ile Verte.** On the opening of navigation the fixed white range lights on Government wharf, 312 ft. from its outer end, will be changed to fixed red lights.

**Quebec, River St. Lawrence,** Ship channel between Quebec and Montreal.—On the opening of navigation, the spar buoy 79M, on the south side of the channel, south of Ile au Boeuf, will be replaced by a black, steel cylindrical gas buoy, showing an occulting white light.

**Quebec, River St. Lawrence,** Ship Channel between Quebec and Montreal.—On the opening of navigation, the buoys between curve 2 and curve 3, Lake St. Peter, were rearranged. The black spar buoys 45.1 and 69.1 were replaced by black steel cylindrical gas buoys showing occulting white lights. The black gas buoys 47.1 and 67.1 were replaced by wooden spar buoys. A black spar buoy 47 M. has been established on the east side of the channel, in Contrecoeur traverse curve, 1,400 ft. south of black gas buoy 45 M. and other buoys in this curve have been rearranged. At Pointe aux Trembles, the buoys have been rearranged, and a red spar buoy has been established opposite black can buoy 163 M., and numbered 164 M.

**United States, Detroit River.**—On or about May 3, the fixed white light on the east shore of Grosse Isle will be replaced by a flashing white light, showing a flash every two seconds.

**United States, St. Clair River.**—On the opening of navigation, St. Clair Flats canal east pierhead light was discontinued, and the east channel gas buoy 4 was established in lieu thereof; light, occulting red every 10 seconds, at an elevation of 13 ft., in a depth of water of 22 ft. The east channel revetment will be dredged away at this point.

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**Hill & Co. (Exports & Imports) Ltd.,** has been incorporated under the Ontario Companies Act, with $200,000 authorized capital and office at Toronto, to carry on a general import and export business in Canada, for British, colonial and foreign commercial houses, and to conduct a navigation, transportation and warehousing and grain elevating business, and in connection therewith, to own and operate steam and other ships, warehouses, wharves, docks and elevators. The provisional directors are: E. N. Armour, D. C. Skinner, N. F. Allan, H. R. Hollinshead and I. R. McKibbin.

**Harbour Navigation Co. Ltd.,** has been incorporated under the British Columbia Companies Act, with $100,000 capital, and office at Vancouver, to own and operate steam and sailing ships of every description and to carry on a general shipping and forwarding business.

# Harbor, River and Drydock Estimates for 1920-1921.

The Public Works Department's estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently, contain the following items:—

**Harbors and Rivers, Chargeable to Capital**

| | |
|---|---|
| Esquimalt, B.C., new dry dock, which includes a revote of $450,000, being unexpended balance of the 1919-1920 appropriation | $500,000 |
| Port Arthur and Fort William, harbor and river improvements, including revote of $180,000 | 600,000 |
| Quebec Harbor, Champlain dry dock, to complete, including revote of $67,000 | 150,000 |
| St. John Harbor, improvement | 1,250,000 |
| Toronto Harbor, improvements | 1,700,000 |
| Toronto Island, breakwater protection, revote | 200,000 |
| | $4,400,000 |

**Harbors and Rivers, Chargeable to Income.**

NOVA SCOTIA.

| | |
|---|---|
| Arisaig, repairs to wharf | $ 1,500 |
| Battery Point, repairs to breakwater | 1,000 |
| Boisdale, wharf | 2,600 |
| Bayfield, repairs to breakwater | 1,200 |
| Cow Bay (Port Morien), repairs to breakwater | 6,000 |
| D'Escousse, repairs to wharf | 720 |
| Devil's Island, repairs to breakwater | 13,300 |
| Digby, repairs to pier | 5,000 |
| Drum Head, repairs to breakwater | 2,500 |
| East Jordan, repairs to breakwater | 600 |
| Eatonville, repairing and rebuilding breakwaters | 3,500 |
| Friar's Head, harbor improvements | 3,800 |
| Granville Centre, repairs to wharf approach | 1,000 |
| Harbors and rivers generally, repairs and improvements | 60,000 |
| Harborville, repairs to breakwaters | 800 |
| Irish Cove, wharf reconstruction | 2,800 |
| Inverness, harbor improvements | 12,000 |
| Johnston's harbor, repairs to wharf | 500 |
| Larry's River, repairs to breakwater | 3,000 |
| Little Brook, repairs to breakwater | 1,500 |
| Mabou Harbor, repairs to jetties | 1,600 |
| Meteghan, breakwater extension | 16,500 |
| McNair's Cove, repairs to wharf | 1,200 |
| Mosher's Bay, repairs and improvements to breakwater | 6,650 |
| Newport Landing, repairs to wharf | 1,600 |
| New Harbor, repairs to breakwater | 2,000 |
| North Ingonish, reconstruction of breakwater | 11,000 |
| Owl's Head, repairs to wharf | 3,400 |
| Pleasant Harbor, repairs to wharf | 1,500 |
| Portapique, repairs to wharf | 600 |
| Port Beckerton, repairs to wharf | 700 |
| Port George, repairs to wharf and breakwater | 1,800 |
| Port Hawkesbury, to complete repairs to wharf | 3,400 |
| Port Hood, wharf repairs and extension | 7,000 |
| Scotch Cove (White Point), breakwater extension | 9,800 |
| Shenacadie, wharf | 12,000 |
| Sober Island, extension to wharf | 6,000 |
| South Lake, Lakevale, repairs to piers | 1,025 |
| Spry Bay, Josie's, repair to wharf | 2,500 |
| Summerville, repairs to wharf | 5,900 |
| Sydney, wharf | 100,000 |
| Tennycape, repairs to wharf | 1,200 |
| The Wharves, repairs to breakwater and shore protection | 800 |
| Three Fathom Harbor, repairs to breakwater | 6,000 |
| The Points West Bay, repairs to wharf | 1,500 |
| Vogler's Cove, repairs to wharf | 900 |
| West Chezzetcook, repairs to breakwater | 15,100 |
| Westport, repairs to wharf | 4,000 |
| Yarmouth Bar, repairs and improvements | 4,000 |
| | $352,995 |

PRINCE EDWARD ISLAND.

| | |
|---|---|
| Annandale, repairs to wharf | $ 3,500 |
| Cape Traverse, repairs to pier | 2,500 |
| Graham's Pond, repairs to breakwater | 1,500 |
| Harbors and rivers generally, repairs and improvements | 14,000 |
| Hickey's Wharf, repairs and reconstruction | 3,500 |
| Miminigash Harbor, reconstruction of breakwater | 2,700 |
| North Lake, boat harbor | 27,000 |
| Pinette, reconstructing ice break | 1,200 |
| Souris, to repair and strengthen breakwater | 40,000 |
| St. Mary's Bay, repairs to wharf | 1,100 |
| St. Peter's Bay, repairs to breakwater | 2,800 |
| Victoria, repairs to pier | 2,900 |
| West Point, repairs to wharf | 1,600 |
| Wood Islands, repairs to breakwaters | 800 |
| | $105,100 |

NEW BRUNSWICK.

| | |
|---|---|
| Bay du Vin, repairs to wharf | $ 2,400 |
| Buctouche, repairs to wharf | 1,300 |
| Campbellton, repairs to wharf | 2,000 |
| Campbellton, repairs to ferry landing | 1,500 |
| Cape Bald, repairs to breakwater pier | 10,000 |
| Chockfish, to repair breakwater | 1,400 |
| Cocagne repairs to wharf | 1,700 |
| Dalhousie, repairs to wharf and breakwater | 700 |
| Harbors and rivers generally, repairs and improvements | 65,000 |
| Loggieville, repairs to wharf | 1,200 |
| Mill Cove, repairs to wharf | 750 |
| Moncton, repairs to wharf | 2,800 |
| Negro Point, breakwater repairs | 5,500 |
| New Mills, repairs to wharf | 900 |
| North Head, Grand Manan Island, repairs to breakwater wharf | 5,225 |
| Petit Rocher, repairs to breakwater | 15,000 |
| Quaco (St. Martin's), reconstruction of breakwater and repairs to pier | 22,000 |
| Seal Cove, repairs to breakwater | 2,700 |
| Shippigan Gully, repairs to breakwater | 12,000 |
| Stonehaven, repairs to breakwater | 1,500 |
| St. George's, repairs to wharf | 5,000 |
| St. Louis, repairs to wharf | 1,200 |
| Tracadie, repairs to wharf | 2,000 |
| Wilson's Beach, repairs and improvements to breakwater-wharf | 8,700 |
| | $172,525 |

QUEBEC.

| | |
|---|---|
| Anse aux Gascons, wharf | $ 36,000 |
| Aylmer, repairs to wharf | 2,000 |
| Beloeil, repairs to protection piers | 7,700 |
| Berthier (en bas), repairs to wharf | 3,000 |
| Buckingham, wharf | 8,000 |
| Cabano, repairs to wharf | 2,400 |
| Cap St. Ignace, repairs to wharf | 6,000 |
| Caughnawaga, repairs to wharf | 2,500 |
| Chicoutimi, repairs to wharf | 4,500 |
| Contrecoeur, repairs to wharf approch | 3,000 |
| Coteau du Lac, repairs to wharf | 1,100 |
| Esquimalt Point, wharf repairs | 1,700 |
| Fasset, repairs to wharf | 650 |
| Gaspe Basin, wharf repairs | 4,150 |
| Grande Riviere, repairs to pier | 12,900 |
| Grosse Isle Quarantine Station, extension of wharves | 50,000 |
| Grosse Isle, repairs to wharfs | 5,500 |
| Harbors and rivers generally, repairs and improvements | 75,000 |
| Ile Perrot, wharf repairs and improvements | 2,300 |
| Louiseville, repairs to wharf | 1,000 |
| Maguasha, repairs to wharf | 600 |
| Mont Louis, repairs to wharf | 1,250 |
| Montmagny, repairs to wharf | 4,400 |
| Nicolet, repairs to wharf | 600 |
| North Timiskaming, wharf | 13,000 |
| Notre Dame des Sept Douleurs (Isle Verte), completion of landing wharf | 5,000 |
| Pointe aux Trembles, repairs to wharf | 6,000 |
| Pointe Pizeau, Sillery, repairs to wharf | 13,000 |
| Pointe Shea, Amherst, repairs to pier | 10,000 |
| Poltimore, wharf | 3,000 |
| Port Daniel, repairs to wharf | 1,000 |
| Quebec Harbor, River St. Charles, repairs to plant | 15,000 |
| Rimouski, harbor improvements | 13,000 |
| Riviere du Loup (en bas), repairs to wharf | 3,800 |
| Riviere Ouelle, repairs to wharf | 1,200 |
| Ruisseau Le Blanc, repairs to wharf | 600 |
| St. Alphonse, repairs to wharf | 5,000 |
| Ste. Anne de Beaupre, wharf repairs and reconstruction | 30,000 |
| Ste. Anne de Sorel, repairs to wharf | 2,500 |
| St. Denis, repairs to wharf | 1,300 |
| St Famille, wharf repairs and reconstruction | 17,000 |
| St. Francois Sud, repairs to wharf | 33,000 |
| St. Jean d'Orleans, repairs to wharf | 31,000 |
| St. Johns, renewal of booms | 1,400 |
| St. Joseph de Sorel, reconstruction of ice breaker | 3,500 |
| St. Laurent, Island of Orleans, repairs to wharf | 21,000 |
| St. Michel de Bellechasse, repairs to wharf | 36,000 |
| St. Paul, Isle aux Noix, repairs to wharf | 3,000 |
| Sorel, wharf repairs and reconstruction | 10,400 |
| Three Rivers, repairs to coal dock | 3,450 |
| | $519,400 |

ONTARIO.

| | |
|---|---|
| Bayfield, repairs to pier | $ 6,000 |
| Belle River, repairs to harbor walls | 1,700 |
| Blind River, repairs to wharf | 2,000 |
| Burks Falls, repairs to wharf | 5,000 |
| Burlington Channel, repairs to pier | 17,000 |
| Cobourg, repairs to piers | 13,000 |
| Collingwood, breakwater reconstruction | 50,000 |
| Depot Harbor, wharf renewal | 36,000 |
| French River dams, repairs and maintenance | 3,000 |
| Goderich, repairs to docks | 3,500 |
| Grand Bend, repairs to piers | 2,300 |
| Haileybury, repairs to wharves | 1,000 |
| Harbors and rivers generally, repairs and improvements | 65,000 |
| Kagawong, wharf | 12,000 |
| Kenora, extending wharf | 2,500 |
| Kincardine Harbor, contribution to municipality towards protection of government piers | 1,050 |
| Kingston, maintenance and operation of combined wharves and bridge | 12,800 |
| Kingston, repairs to R.M.C. dock | 850 |
| Kingsville, repairs and renewals to piers | 8,000 |
| Leamington, repairs to pier | 9,200 |
| Little Current, rebuilding wharf | 44,000 |
| Liskeard, repairs to wharf | 850 |
| North Bay, repairs to wharf | 800 |
| Oshawa, repairs to wharf | 15,000 |
| Parry Sound, renewals to breastworks at Two and Seven Mile Narrows | 1,500 |
| Parry Sound, repairs to wharves | 7,000 |
| Pelee Island, repairs to piers | 2,750 |
| Pike Creek, repairs to harbor walls | 1,200 |
| Port Burwell, repairs to pier | 7,900 |
| Port Colborne, repairs to breakwaters | 66,500 |
| Port Rowan, repairs to pier | 1,500 |
| Port Stanley, repairs to harbor works | 19,000 |
| Puce, repairs to harbor works | 800 |
| Rondeau, repairs to piers | 17,000 |
| Silver Centre, repairs to wharf | 825 |
| Sault Ste. Marie, repairs to wharf | 6,180 |
| Southampton, repairs to breakwater | 5,000 |
| Thessalon, to complete reconstruction of wharf | 13,500 |
| Wheatley, repairs to pier | 2,100 |
| | $465,305 |

MANITOBA.

| | |
|---|---|
| Dauphin River, wharf | $ 7,500 |
| Gimli, repairs to wharf | 3,000 |
| Harbors and rivers kgenerally, repairs and improvements | 15,000 |
| Red River, repairs to channel protection work | 7,500 |
| Selkirk, repairs to wharf | 3,000 |
| | $36,000 |

SASKATCHEWAN AND ALBERTA.

| | |
|---|---|
| Harbors and rivers generally, repairs and improvements | $ 20,000 |

BRITISH COLUMBIA.

| | |
|---|---|
| Bamfield, repairs to wharf | $ 2,680 |
| Boswell, floating wharf | 6,500 |
| Clayoquot, repairs to wharf | 2,200 |
| Crofton, repairs to wharf | 4,100 |
| Fraser River, improvements at Nicomen Island | 36,000 |
| Fraser River (lower), improvements | 25,000 |
| Fraser River, dredging North Arm | 32,000 |
| Harbors and rivers generally, repairs and improvements | 95,000 |
| Kincloth, wharf renewal | 11,000 |
| Naas River, removal of obstructions | 10,000 |
| Naramata, wharf | 3,000 |
| New Westminster, repairs to wharf | 850 |
| Nootka Island, repairs to wharf | 3,000 |
| Okanagan River, maintaining dam and repairing bank protection work | 3,400 |
| Port Moody, repairs to wharf | 800 |
| Powell River, addition to wharf | 11,000 |
| Prince Rupert, quarantine station, repairs to wharf | 3,500 |
| Princess Creek, floating wharf | 6,500 |
| Refuge Bay, repairs to wharf | 4,000 |
| Robert's Creek, repairs to wharf | 980 |
| Royston, repairs to wharf | 4,000 |
| Spiller River, repairs to wharf | 2,000 |
| Stewart, reconstruction of wharf | 29,000 |
| Stikine River, removal of obstruction | 10,000 |
| Thetis Island, reconstruction of wharf | 8,500 |
| Ucluelet, repairs to wharf | 3,420 |
| Williams Head, quarantine station, repairs to coal wharf | 5,480 |
| | $323,910 |

GENERALLY.

| | |
|---|---|
| Harbors and rivers generally | $ 30,000 |

DREDGING.

| | |
|---|---|
| Maritime Provinces | $500,000 |
| Ontario and Quebec | 450,000 |
| Manitoba, Saskatchewan and Alberta | 75,000 |
| British Columbia | 400,000 |
| | $1,425,000 |

**Drydocks, locks, dams, etc., working expenses, chargeable to collection of revenue.**

| | |
|---|---|
| Champlain graving dock | $20,000 |
| Lorne graving dock | 27,300 |
| Esquimalt graving dock | 22,000 |
| | $69,300 |
| East River, lock and dam | $ 3,000 |
| Burlington channel bridge | 5,800 |
| Montreal River, dam at Latchford | 3,000 |
| River Yamaska, lock and dam | 900 |
| Riviere du Lievre, lock and dam | 2,500 |
| St. Andrews Rapids, lock and dam | 22,700 |
| Selkirk, repair slip | 4,200 |
| | $42,100 |
| Collection of Public Works revenue | $7,000 |

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Consolidated Equipment Co., Ltd., Montreal. Herbert Ewan has sold his half interest in this business to Jas. W. Coleman, Jr., who has thus become sole owner. Mr. Ewan left Montreal May 15 to reside in Sheffield, Eng.

Davis-Bournonville Co., oxy-acetylene welding and cutting apparatus, Jersey City, N.J., has moved its Boston sales office to 44 Federal St., where G. J. Strobel is Manager.

Davis-Bournonville Co., oxy-acetlylene welding and cutting apparatus, Jersey City, N.J., DeWitt V. D. Reiley, formerly Vice President, has been elected President, succeeding Augustine Davis, who resigned last November. C. B. Wortham, Treasurer of the company since its organization, has been elected Vice President, and W. G. McCune, Secretary-Treasurer. The other directors are Augustine Davis, C. J. Mayer, D. E. Evarts and H. Rowntree.

Davis-Bournonville Co., Jersey City, N.J., manufacturer of oxy-acetylene and oxy-hydrogen welding and cutting apparatus, has acquired a new and larger factory location for its Canadian plant, which will be moved from Niagara Falls, Ont., to Toronto, in June. The Toronto sales office will be moved from King St. West to the factory building at 32 Eastern Ave. The company's Montreal sales office will be moved about June 1 from Craig St. West to the Coristine Building.

F. H. Hopkins & Co., Ltd., has been incorporated under the Dominion Companies Act, with authorized capital of $1,000,000, and office at Montreal, to acquire the business carried on heretofore at Montreal by F. H. Hopkins and R. A. C. McNally, as F. H. Hopkins & Co., contractors, marine, mining and railway supplies, etc.

Independent Pneumatic Tool Co. has removed its Detroit, Mich., office and stores to 55 Garfield Building.

Metal & Thermit Corporation, New York, N.Y., has issued a revised edition of its pamphlet "Laboratory Experiments with the Thermit Process of Welding," which is intended as a guide for acquainting students with the substance, characteristics and results of the Thermit reaction. It illustrates and describes various experiments to show the speed of the reaction, the heat produced thereby and the effects obtained by the superheated liquid slag, and the superheated liquid steel.

Metal & Thermit Corporation has appointed to its rail welding department, Chas. F. Lederer, until recently Superintendent of Way, Milwaukee Electric Ry. & Light Co., Milwaukee, Wis.

Northern Electric Co., Montreal, has established a plan for an employes' pension and benefit fund, the whole cost to be borne by the company, there being no contribution by the employes. A committee consisting of the General Superintendent, Secretary, General Sales Manager, Chief Engineer and Chief Accountant has been appointed to administer the fund and to decide all questions relating to the plan. Provision has been made for those employes who left the company's employ for military service, as those who returned to the company previous to Jan. 1, 1920, receive credit for the total period of their military service, when calculating their term of employment.

Ottawa Car Manufacturing Co.—W. H. McIntyre, heretofore Assistant General Superintendent Ottawa Electric Co., and Ottawa Gas Co., has been appointed General Manager, Ottawa Car Manufacturing Co., succeeding W. M. Arnold, resigned.

## Transportation Conventions in 1920

June—American Association of Freight Agents.
June 9-16—American Railroad Association's Mechanical Section, Atlantic City, N.J.
Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.
Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.
Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association — A Eastman, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)— G. C. Ransom 909 Shaughnessy Bldg., Montreal.
Canadian Freight Association (Western lines)— W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Board of Adjustment No. 1— R. Chapple, 263 St. James Street, Montreal.
Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 96 King Street West, Toronto.
Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.
Express Traffic Association of Canada—C. N Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices Montreal.
Hydro-Electric Railway Association of Ontario —T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo N.Y.
Niagara Frontier Summer Rate Committee James Morrison, Montreal.
Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.
Railway Association of Canada—W. M. Neal Montreal.
Shipping Federation of Canada—Thos. Robb Manager, 42 St. Sacrament Street, Montreal.
Transportation Club of Toronto—W. A. Gray 257 Roxton Road, Toronto.
Transportation Club of Vancouver — H. W Schofield, 556 Church St., Vancouver, B.C.

Steel steamships, aggregating 7,692,000 tons, are reported from England as having been under construction all over the world on April 1. It is also stated that shipbuilding in British yards then exceeded that in United States yards by 821,000 tons.

The U.S. Bureau of Navigation reports 164 sailing, steam, gas and unrigged ships, of 251,442 gross tons, as built in the United States and officially numbered during April.


# JUDICIAL SALE

IN THE MATTER OF THE DOMINION PERMANENT LOAN COMPANY; and
IN THE MATTER OF THE WINDING UP ACT AND AMENDMENTS THERETO.

PURSUANT to the Winding Up Order made on the 6th day of February, 1918, tenders will be received up to the 18th day of June, 1920, for the purchase of:

1. Bonds secured by a Trust Deed covering all the real and personal property of the Spokane and British Columbia Railway Company, dated 25th day of April, 1905, being the total issue of bonds secured by the Trust Deed and amounting to $1,500,000.

2. Total issue of capital stock of said Company amounting to $10,000 with par value of $100 each.

Said bonds and shares comprise all securities issued by the said Railway, which commences at Danville on the line between the United States and Canada, near Grand Forks, B.C., and runs to Republic in the State of Washington, U.S.A., a distance of about thirty-six miles more or less. The Railway Company have power to complete their line from Republic to Spokane, and surveys of the proposed right of way have been completed. The track consists of 3,428 tons of sixty pound rails and 264 tons of fifty-six pound rails, and an equipment of:

3 Locomotives.
2 Combination Passenger and Baggage Cars.
13 Flat cars.
10 Dump cars.
3 Box cars.

All taxes, insurance, water rates and similar items are to be adjusted to the date of acceptance of tender.

Terms of payment will be ten per cent. (10%) of the amount tendered on the acceptance of such tender, and the remainder of such tender in three, six and twelve months, with interest at six per cent. per annum, secured to the satisfaction of the Liquidator.

Tenders will be opened at Osgoode Hall, Toronto, on the 19th day of June, 1920, at 11 o'clock.

All tenders must be accompanied by a marked cheque payable to the Liquidator for ten per cent. (10%) of the amount tendered, which will be returned if the tender is not accepted and forfeited if the tender is accepted and not completed by the purchaser.

The highest or any tender not necessarily accepted.

The purchaser shall search the title at his own expense and the Liquidator is not required to furnish any abstract or produce any deeds, declarations or other evidence of title except those in his possession.

The purchaser shall have ten days in which to make any objection or requisition in respect of title and in case the purchaser shall at such time make any objection or requisition which the Vendor shall from any cause be unable or unwilling to remove or answer, the Liquidator may then rescind the sale, in which case the purchaser shall be entitled only to return of deposit money without interest, cost or compensation.

The conditions will be the standing conditions of sale of the Supreme Court of Ontario.

Further particulars as to the property and inventory may be had on application to the Liquidator, G. T. CLARKSON, 15 Wellington Street West, Toronto, Ont., A. B. BUCKWORTH, 407 Hastings Street North, Vancouver, B.C., or to BAIN, BICKNELL, MACDONELL & GORDON, Lumsden Building, Toronto, Solicitors for the Liquidator.

Dated at Toronto this 14th day of May, 1920.

J. A. C. CAMERON,
Official Referee.

# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

**ADVERTISING RATES.**

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.
Allow five words where replies are to be sent to a box number. Minimum order—$1.
Rates under other headings and for display advertisements on application.


## TIES FOR SALE

A few thousand Hemlock, Cedar and Tamarac Ties for immediate shipment.

Write or Wire for prices.

**MUSKOKA WOOD MFG. CO.,**
Huntsville, Ont.


### THE TORONTO, HAMILTON & BUFFALO RAILWAY COMPANY.

Hamilton, Ont., May 1, 1920.

Notice is hereby given that the Annual Meeting of the Shareholders of this Company, for the election of a Board of Directors, and for the transaction of such other business as may be brought before the meeting, will be held at the office of the Company, in the City of Hamilton, Province of Ontario, on Tuesday, June 1st, 1920, at 11 o'clock in the forenoon.

E. F. STEPHENSON,
Secretary.

### THE CANADA SOUTHERN RAILWAY COMPANY.

St. Thomas, Ont., May 1, 1920.

The Annual General Meeting of the Shareholders of The Canadian Southern Railway Company, for the election of Directors, and other general purposes, will be held at the company's Head Office in the City of St. Thomas, Ontario, on Wednesday, the 2nd day of June, 1920, at 11 o'clock in the forenoon.

E. F. STEPHENSON,
Assistant Secretary.

### CANADIAN PACIFIC RAILWAY CO.

**Dividend Notice.**

At a meeting of the Board of Directors held today a dividend of two and one-half per cent. on the Common Stock for the quarter ended 31st March last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, was declared payable on 30th June next to shareholders of record at 3 p.m. on 1st June next.

By order of the Board,
ERNEST ALEXANDER,
Secretary.

Montreal, 5th May, 1920.

### THE VICTORIA ROLLING STOCK & REALTY CO. OF CANADA, LTD.

NOTICE is hereby given that a dividend of 4% on the paid-up capital stock of the Company for the six months ended May 31st, 1920, has been declared payable June 1st, 1920, to the shareholders of record as of the 31st of May, 1920.

By order of the Board,
G. T. CHISHOLM, Secretary.

Toronto, May 2nd, 1920.

### NOTICE.

The General Railway Signal Company of the United States of America, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signalling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents to the fact that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to The General Railway Signal Company of Canada, Limited, Lachine, Province of Quebec, Canada.


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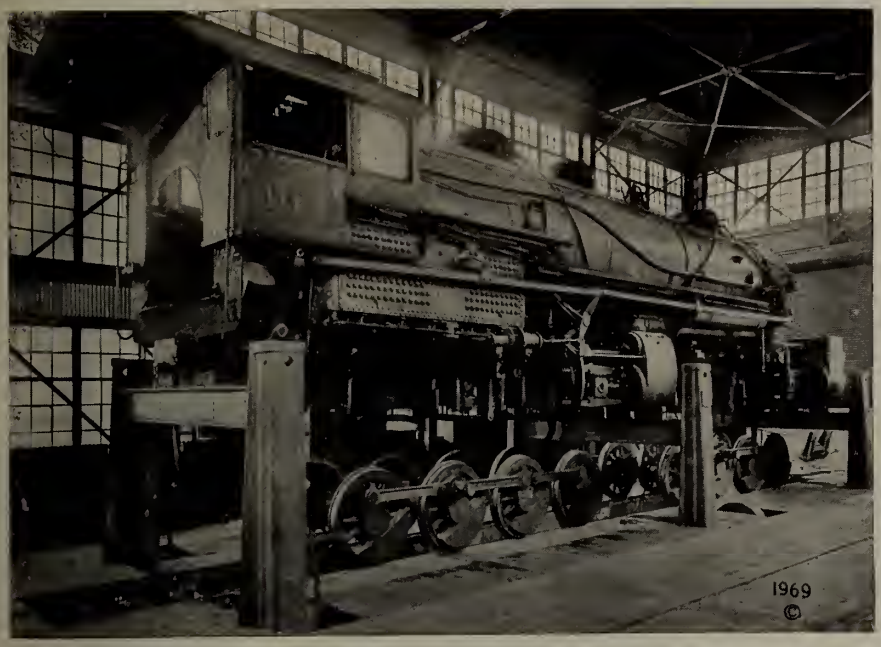


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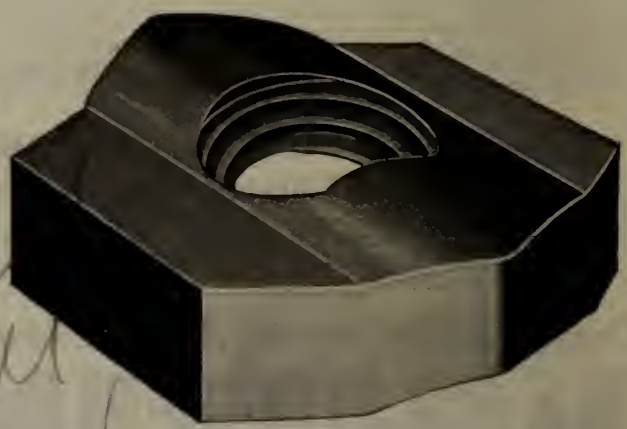

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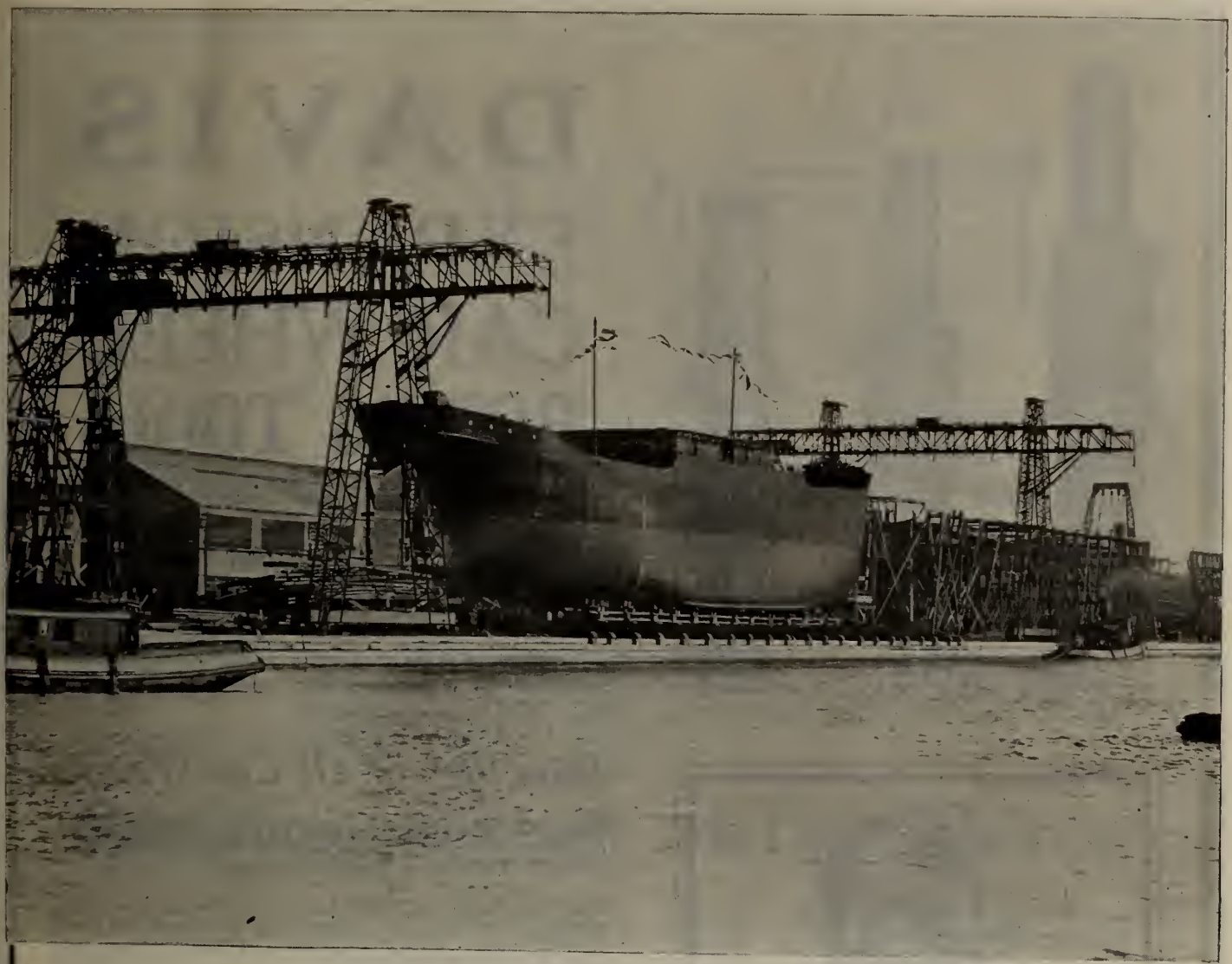

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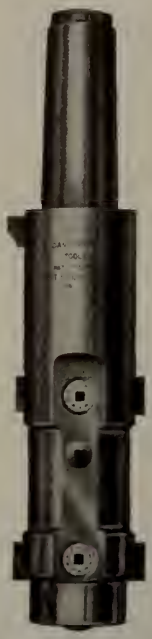

SPECIAL TWO-IN-ONE DAVIS EXPANSION CAR WHEEL BORING TOOL

REGULAR TWO-IN-ONE DAVIS EXPANSION CAR WHEEL BORING TOOL

"STANDARD" DAVIS EXPANSION CAR WHEEL BORING TOOL

# DAVIS EXPANSION CAR WHEEL BORING TOOLS

The world-wide reputation of Davis Expansion Car Wheel Boring Tools is based on their efficient, economical and dependable service in the thousands of shops where they are in use. They are not only recognized throughout the United States as standard equipment for correct wheel boring, but they are also extensively used in Canadian Wheel Shops, as well as in many foreign countries. This wide distribution is evidence of their efficiency and merit.

### MICROMETER ADJUSTMENT

Cutters in Davis Expansion Boring Tools are expanded to compensate for wear and sizes are accurately maintained, at all times, by the micrometer adjusting feature. The expansion mechanism is absolutely simple and thoroughly practical. An expanding wedge travels forward or back along a graduated micrometer adjusting screw (which is held stationary) and when moving forward, forces the cutters out equally, as the screw is turned. A special guide supports the wedge pilot, insuring perfect bearing of wedge against angle on each cutter. A hardened gib, controlled by a special screw, firmly clamps each cutter individually in the tool body. The expansion feature permits the use of fastest feeds and speeds and the rigid method of locking cutters assures absolute accuracy of bore—free from all chatter marks or other imperfections.

WEDGE BEARING

EXPANDING CUTTERS

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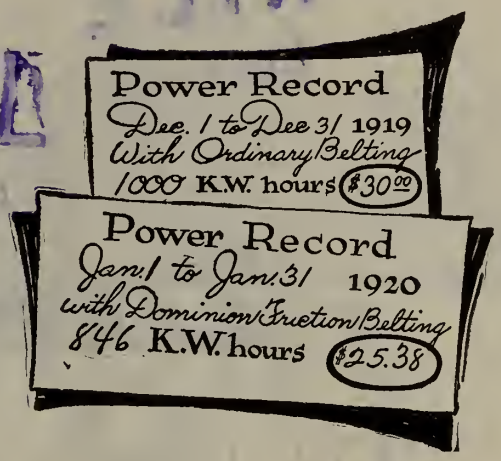


# Decrease Your Operating Cost

Efficient transmission equipment is an important factor in keeping down operating costs. Each repair you have to make to your belting equipment means delays and idle employees—the total cost of which is often greater than you would pay for better belting.

# Dominion Friction Surface Belting

is built for "service first". Through its long life and continuous performance it practically eliminates the necessity for repairs and replacements. It eliminates delays and needless waste of time.

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*Our Dominion Hose, Packing and Industrial Rubber Goods are all the Same High Standard as Dominion Friction Surface Belting.*

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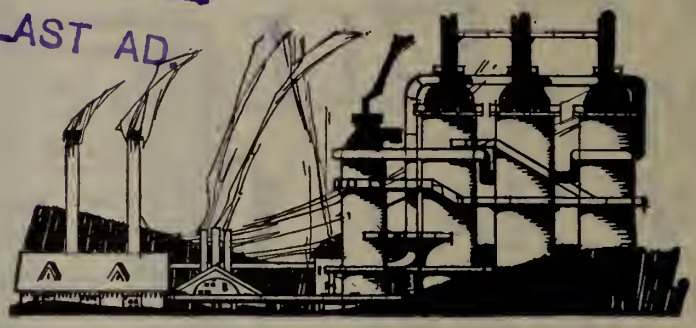

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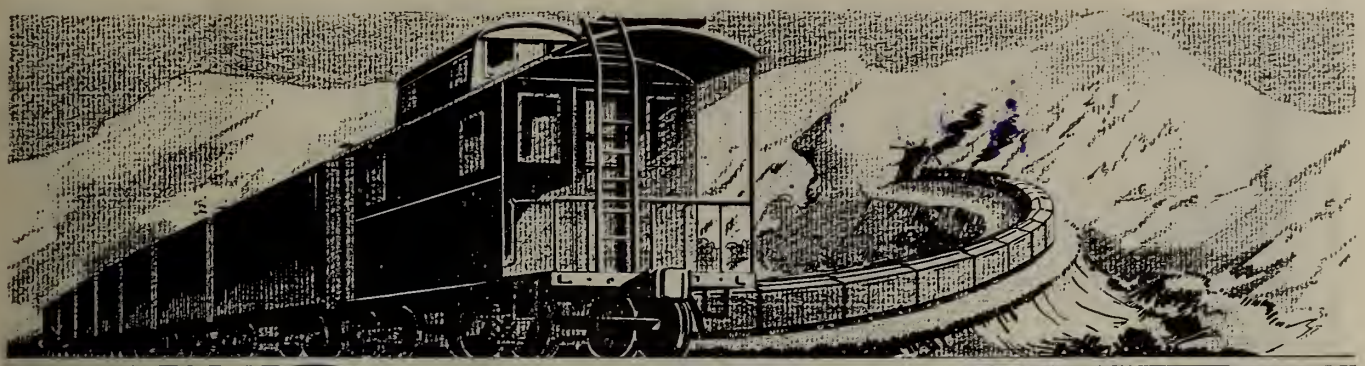

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The essential qualification of a bolster is strength, and yet this must be secured with economy in both weight and space occupied. The HUNTOON BOLSTER fulfills these requirements, for it is a bolster of maximum strength brought about by the economical distribution of metal, resulting automatically in a decided saving in weight.

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Inside this hard-wearing cover is a special, oil-resisting inner tube, and a fabric of such strength that five-ply is found as satisfactory as six or seven-ply of old-style hose.

Records of Goodyear Air Drill Hose giving from 18 months to 2 years' service are in our files. We have similar records of long, satisfactory service and lessened hose costs, due to the use of Goodyear Industrial Hose in other classes of work.

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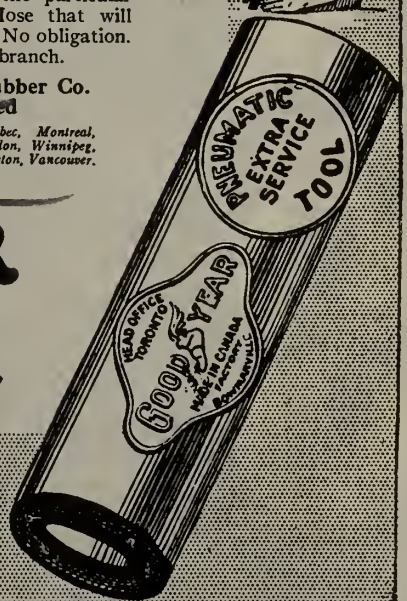


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Send us particulars of your machine and we will supply you on trial, brushes that will save you money and worry. *Now* is the time to give them a trial.

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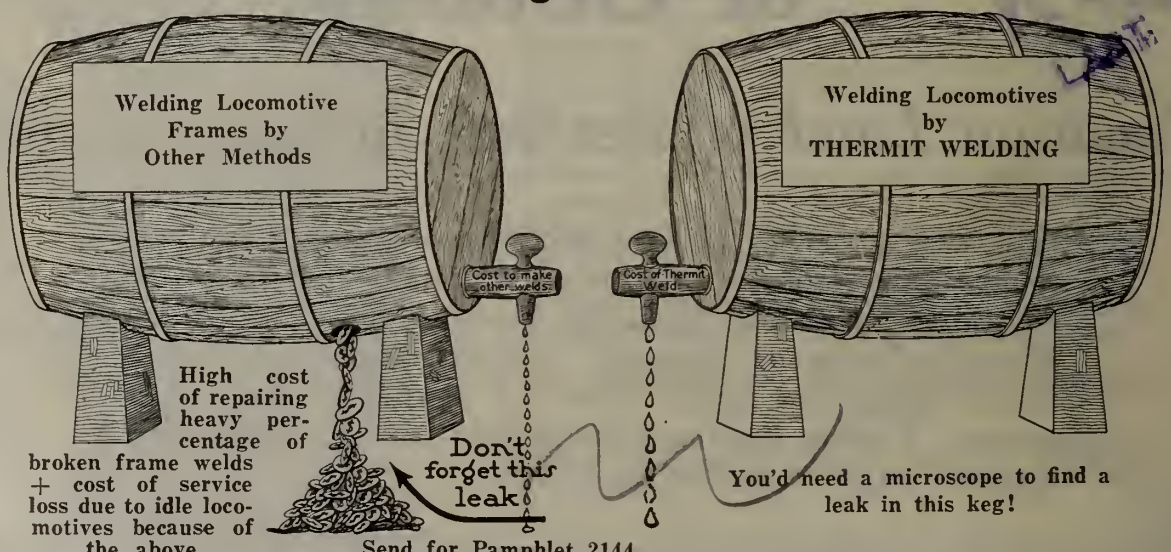
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Cost to make other welds
Welding Locomotives by THERMIT WELDING
Cost of Thermit Weld
Don't forget this leak

High cost of repairing heavy percentage of broken frame welds + cost of service loss due to idle locomotives because of the above.

You'd need a microscope to find a leak in this keg!

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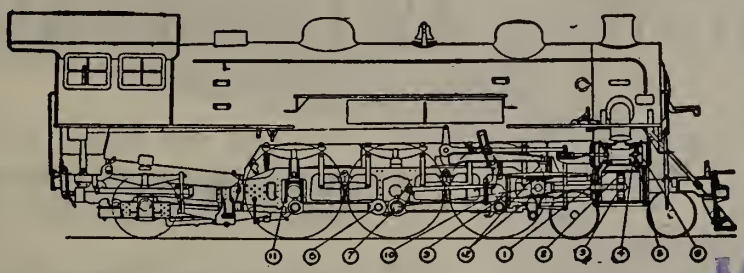

7 Side Rod Bushings
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On modern power, the air pump is a very important item. Its upkeep and dependability has a direct bearing on locomotive maintenance and train operation. True cylinders with wear-resisting walls insure both dependable and economical service.

**Hunt-Spiller Gun Iron**

has been adopted by many of the leading roads as the material best suited for bushings for air pump cylinders.

**Hunt-Spiller Gun Iron**

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May be used with any draft attachment.

In use on thousands of cars, including U.S. R.A. standard cars.

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## PEDLAR'S "PERFECT" TONCAN METAL CULVERTS

WHENEVER you install a Pedlar Culvert you can rest assured that it will always be equal to its job. They have the inherent strength to support the greatest pressures. Being made from the celebrated anti-corrosive TONCAN METAL, heavily galvanized, they will not rot or rust. Frost and ice will never crack them. All you've got to do to solve any culvert problem, whether on railway or highway, is to figure the capacity required, and then send in your order for Pedlar's Culverts. We carry a stock of all sizes at all branch warehouses. Prompt shipment is always assured.

Sizes, 8 to 84 inches. Lengths up to 40 feet, with coupling bands supplied free for longer lengths.

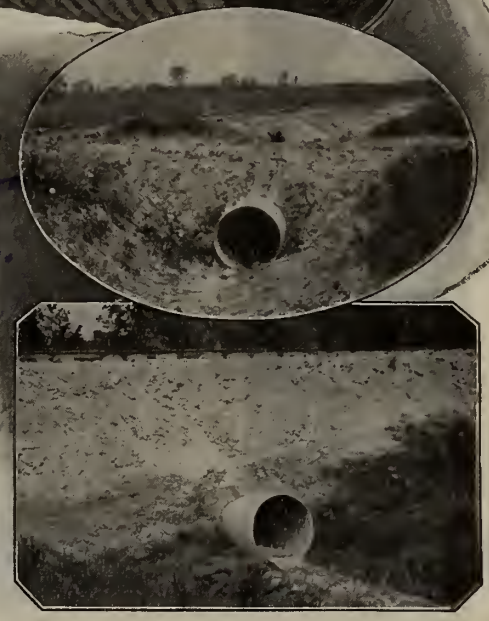
Write for Culvert Booklet R.M.

**The Pedlar People Limited**

(Established 1861)

Executive Office and Factories: OSHAWA, ONT.

Branches: Montreal, Quebec, Halifax, St. John, N.B., Ottawa, Toronto, Winnipeg, Calgary, Vancouver.



# CRANES

Electric and Hand Power Direct or Alternating Current Standard Bridge Cranes.

Revolving Hammer Head and Luffing Boom Types for Shipbuilding and Unloading Wharf.

Also Gantry and Special Types.
(Capacity 2 Tons to 200 Tons)

Coal and Ore Handling Equipments.

# DOMINION BRIDGE COMPANY
## LIMITED

*Head Office:* MONTREAL *Branches:* Ottawa, Toronto, Winnipeg

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50 YEARS IN THE BUSINESS

OVER 60,000,000 FILES A YEAR

And you get it when you specify Famous Five Files.

Made of specially fabricated steel, accurately cut and thoroughly hardened, they do all that can possibly be expected of a file.

Long efficient service, cleanly done jobs, contented workmen, time and money saved, — this is what Famous Five Files mean to you.

They are:

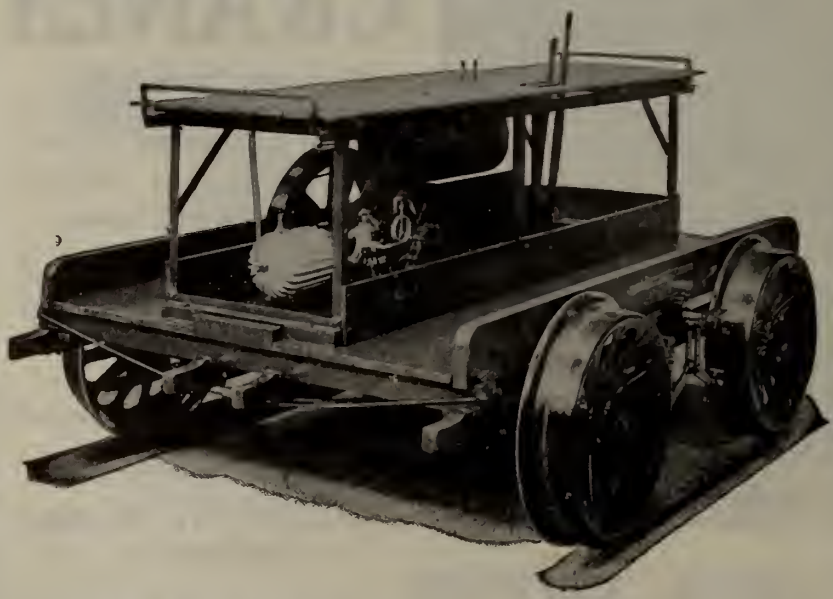
KEARNEY & FOOT GREAT WESTERN
AMERICAN ARCADE GLOBE

Made in Canada by:

**Nicholson File Company**

PORT HOPE ONTARIO

# Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

**Kalamazoo Railway Supply Company**

KALAMAZOO, MICH., U.S.A.

# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

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ANHYDROUS AMMONIA ($N.H_3$.) COLD AIR MACHINERY CARBONIC ANHYDRIDE ($C.O_2$.)

Improved Ethyl Chloride Systems

(MADE IN CANADA)

SOLE BRITISH LICENSEES AND MANUFACTURERS OF

"Viking" Rotary Pump Rotary Air Pumps and Blowers

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Automatic Steam Traps Thermostatic Control Valves and Fittings Automatic Regulators

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Makers of: "Union" Anti-Fouling and Anti-Corrosive Compositions. High grade material used by the British Government, Admiralty, and other prominent leading Organizations.

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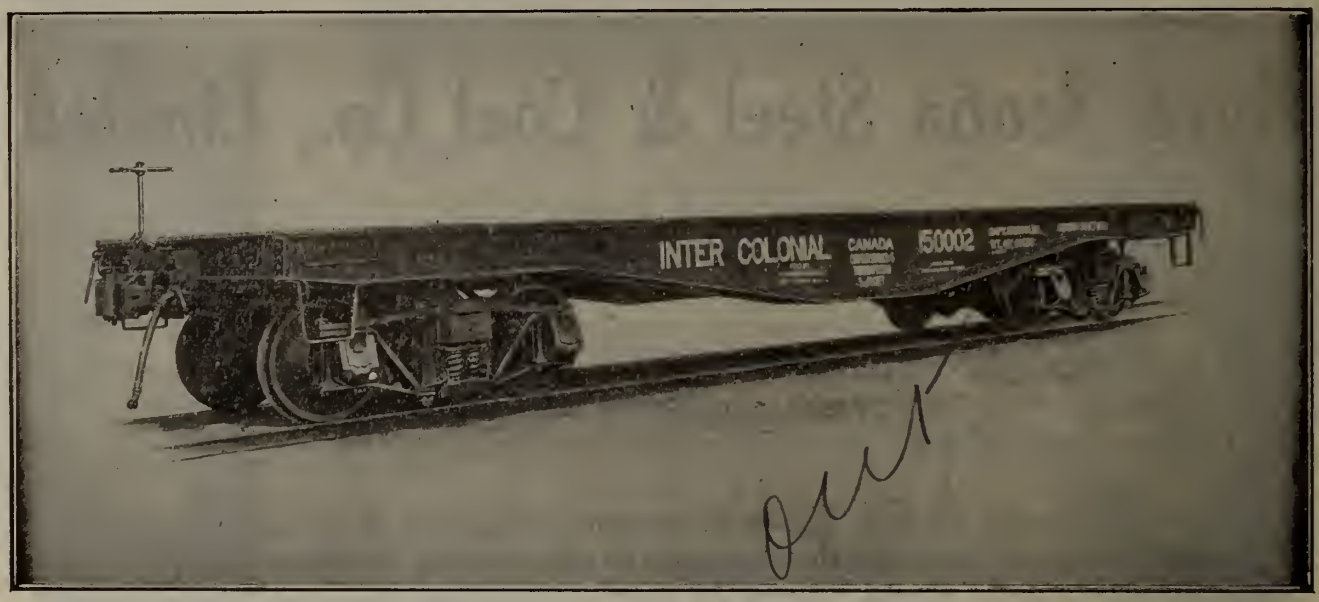
# A. G. KIDSTON & COMPANY

**17 St. John St. - MONTREAL**




75 on Special Pit Car For Canadian Government Railways.

## FLAT CARS, CABOOSES AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

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***Steel Ship Builders and Ship Repairers***

Dry Dock, 550 feet long, 102 feet wide

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**Shipyards, Drydock and Shops - - Halifax, N. S.**
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**Reliable, Efficient and High-Grade**

Reilly Submerged Type Evaporator

We make and supply—
Reilly Feed Heaters, Reilly Evaporators,
Reilly Feed Filters, Reilly Distillers,
Mason Reducing Valves, Mason Pump
Regulators.

"MADE IN CANADA" and guaranteed
as to construction and service.

*We sell a general line of high-class and reliable Power Plant Equipment.*

Mason No. 126 Style Marine Reducing Valve.

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# BOLINDER'S HEAVY CRUDE OIL ENGINE

The New Motor Tanker "Katherine," equipped with 640 B.H.P. Bolinder Engines.

Suez, Egypt,
Febr. 16th, 1920.

Gentlemen:—

The M.S. "Katherine" arrived at Suez on the 15th, 37 days, 7 hours out of Manilla. The engines ran at full speed the entire trip. They never missed a stroke. Everything is in the very best of condition.

We had a light fair wind in the China Sea, calm sea from Singapore to the Red Sea and strong head winds in the Red Sea. The sails were in use but one day between Singapore and Suez (the Bolinder did it).

We will proceed to Rotterdam as soon as fuel can be taken aboard.

Respectfully,
FRANK UHLEIN,
Chief Engineer of the M.S. "Katherine."

The "Katherine" is one of several recent Bolinder installations—all demonstrating Bolinder Efficiency, Economy and Dependability.

## Swedish Steel and Importing Co., Limited

**Shaughnessy Building, Montreal**

# Canada's Premier Machinery House

NEW AND REBUILT

Ironworking and Woodworking Machinery
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We carry a large stock of New and Used Belting, Pulleys, Shafting, Hangers, Pipe and Fittings, Machinist's, Millmen's and Engineer's Supplies of every description.

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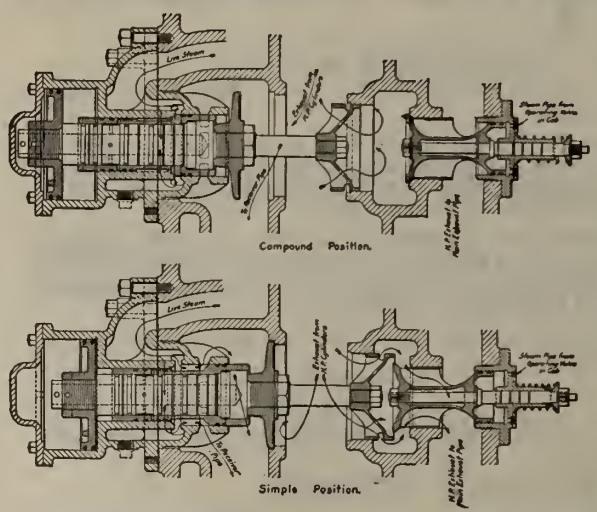
HAMILTON OFFICE—4 KING STREET WEST

# Alco Intercepting Valve




In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

In the ALCO system of compounding these conditions are covered by two of the functions of the intercepting valve.

As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

## Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

# Maintaining Service

Maintaining efficient service entails the use of many materials, not the least important of which, is oil.

Dirty oils, the results of careless storage, hamper maintenance and efficiency.

**BOWSER** ESTABLISHED 1885

stored oils are clean and free-flowing. They retain their useful qualities. Records are accurately kept and time and labor saved by the use of Bowser measuring pumps.

*An analysis by our engineers does not put you under obligation. Write for this service.*

**S. F. BOWSER COMPANY, Limited**
**66-68 Fraser Ave., Toronto, Canada**

*Branch Offices in Principal Cities of the U. S.*

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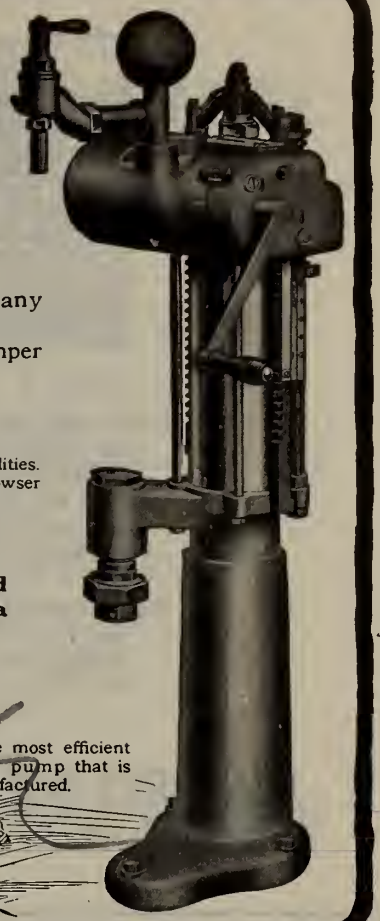
**PARIS** 5 Rue Denis-Poisson
**HAVANA** Lonja del Comercio 427
**SYDNEY** 6 Castlereagh Street

The illustration to the right shows the Bowser Figure 106 gallon pump. Can be used for all lubricating and non-lubricating oils. Rapid and accurate in operation.



The most efficient gallon pump that is manufactured.

# WIRE ROPE

WE are manufacturing Steel Wire Rope for all purposes and have in stock at each of our warehouses a good assortment of standard sizes in Siemens-Martin Steel, Crucible Cast Steel, Plough Steel and Extra Plough Steel Qualities.

We also manufacture and carry in stock all kinds of

***BARE AND INSULATED ELECTRICAL WIRE AND CABLE***

***Write nearest office for quotations***

## Canada Wire and Cable Co., Limited

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**PREPAREDNESS**—Many of our customers have been applying large numbers and in some cases complete installations, of Tate Flexible Staybolts to their locomotive fireboxes, and thus are prepared to handle the heavy business during the present season.

**THE TATE FLEXIBLE STAYBOLT** has been used quite extensively since 1904 in the locomotive fire boxes, and its service records all go to prove that it has done more to improve conditions of staying and preserve the life of the firebox than any staybolt so far used.

**WE RECOMMEND THIS BOLT** to the railroads of Canada and to all users of the firebox type of boiler where staybolts are necessary, with the assurance that it will be found strong, serviceable, economic and most effective in reducing staybolt breakage and firebox repairs.

**OVER 16,000,000 BOLTS IN SERVICE.**

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

**Manufactured and sold in Canada by CANADIAN ALLIS-CHALMERS, Limited, General Offices, Toronto, Ont.**

# RAILWAY AND MARINE LIGHTING

Complete Equipment for Electric or Gas Lighting of Railway Passenger Cars

Complete Apparatus for Harbors and Rivers—Buoys, Beacon Towers and Lanterns

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# CANADIAN STEEL-TIRE AND WHEEL COMPANY, LIMITED

Locomotive and Car Wheel Tires
Steel Tired Wheels of all kinds

KEEP STANDING
LAST ADVERTISEMENT.

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KILL
ACCEPTED.

After five years general service and the most exacting tests, the Pinless Lid Journal Box is offered in Canadian Service.

## McCord & Company

**Montreal - Brantford**

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After thorough investigation
as to all claims in regard to efficiency and safety in operation
The Toronto Railway Company
has adopted

# National Pneumatic Door Control

NEW CAR OF TORONTO RAILWAY CO.—EQUIPPED WITH PNEUMATIC DOOR CONTROL

## NATIONAL PNEUMATIC COMPANY

RAHWAY, N.J. NEW YORK CHICAGO

# LINK-BELT

## LABOR SAVING MACHINERY

Elevators-conveyors
Coaling Stations
Locomotive Cranes

Coal Storage Systems
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Coal Handling Machinery
Coal Loaders and Unloaders
Peck Carriers

Coal Crushers
Chains-Screens-Buckets
Power Transmission Equipment

We will be glad to send catalogs on any of the above products, upon request.

## CANADIAN LINK-BELT COMPANY, LIMITED

WELLINGTON AND PETER STREETS, TORONTO

Concrete Coaling Station. Note ease with which tender is being coaled.

Circular Coal Storage System. The modern method of storing coal adjacent to the coaling station.

View of loading end of two Peck Carriers in Coaling Station. Note arrangement of receiving hoppers, with double reciprocating feeder supplying a crusher over each carrier.

# Butterfield Superiority

in Quality, Finish and Service is built into each and every tool

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Gear, Plain Milling, Side Milling, Step Stocking CUTTERS, Metal, Slitting and Screw Slotting Saws, Slitting Discs.

**Ask for Drill and Cutter Catalog "A"**

## Butterfield & Co., Inc.

**Rock Island, Que.**

# Reinforced Brake Shoes

wear as shown above, before they are scrapped and they wear safely, too. You get your full money's worth in satisfactory service from them always.

Reinforced Car, Coach and Driver Shoes are absolutely essential for safe and economical operation in all classes of railway service.

**Manufactured in Canada.**

**Dominion Brake Shoe Company, Limited**

**350-356 St. James Street, Montreal.**

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KEEP STANDING LAST ADVERTISEMENT

# BARBER

LATERAL MOTION TRUCK DEVICE
ROLLER SIDE BEARINGS—PASSENGER, FREIGHT, LOCOMOTIVES
70-TON DOUBLE ACTION TRUCK, LATERAL AND RADIAL MOTION
SPECIAL ROLLER BEARING CENTER PLATES
LATERAL MOTION ROLLER BEARING JOURNAL BOXES
TILTING BRAKE STAFF—GIVES CLEAR DECK ON FLAT CARS

*For Detailed Information and Drawings Apply*

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"PREVENTION IS BETTER THAN CURE". It costs much less to prevent Varnish mistakes than to make them. I never take any chances. I always use Berry Brothers' Varnishes, Enamels and Stains, because they enable me to guarantee handsome permanent finishing effects.

It is this high grade efficiency that makes Berry Brothers' finishes so desirable for all railway and marine uses.

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Worlds Largest Makers
Varnishes and Paint Specialties
Walkerville, Ont.

# Thomas Rail Anchor Tie Plate

**Chicago Malleable Castings Co., West Pullman, Chicago, Ill.**

Rail Seat inclined and pedestaled
Hook on inside flange of Rail

THE RIGHT WAY—
THE TWO WAY—
THE TIGHT WAY

**MADE IN CANADA**

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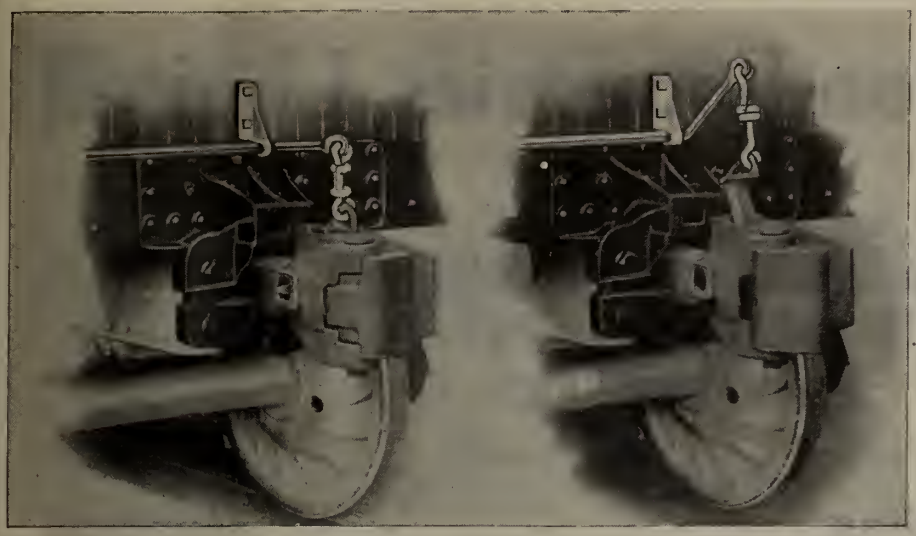
# RAMAPO

## AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps*
*Double Shoulder Solid Bottom*
*Switch Riser Plates*

SWITCHES
FROGS AND CROSSINGS
MANGANESE TRACK WORK A SPECIALTY

## CANADIAN RAMAPO IRON WORKS, LIMITED
NIAGARA FALLS, ONT., CANADA



# "URECO"
## Coupler Release Rigging
(PATENTED)

Positively Prevents Penalty Defects

Requires No Change in Your Standard Hand-Rod

Complies with U.S.R.R. Administration Requirements

**UNION RAILWAY EQUIPMENT CO., McCORMICK BLDG., CHICAGO, ILLS.** ***Works:*** **Hammond, Indiana**

# Superheat and Lubrication

Valves and cylinders must be lubricated. Lubrication is accomplished either by water in the steam, accompanied by heavy and frequent rod swabbing, or direct oil delivery.

Lubrication conditions are a proof of superheat conditions. There is no moisture in superheated steam; therefore, direct oil lubrication is necessary. If it is not necessary, then superheated steam is not being delivered to the cylinders.

Fire tube superheaters are supplying superheated steam to more than 1,800 ships, all using internal lubrication. Result—12 to 20 per cent. fuel saving.

## LOCOMOTIVE SUPERHEATER COMPANY

*Designing Engineers and Manufacturers of Elesco Steam Superheaters and Pipe Coils for all purposes*

**30 Church Street, New York** **Peoples Gas Building, Chicago**

**Money Saving and Efficient**
**The HOLD TITE NUT LOCK**

**STATEMENT**

Showing comparative cost using a Standard Nutlock now on the market and the HOLD TITE NUT LOCK as applied to the car body of a standard 40 ton box car.

STATEMENT was prepared from the specifications of the body of a standard box car which include the truck.

**Summary**

| | |
|---|---|
| Total Cost using a Standard Nutlock on one Box Car Body | $3.36 |
| Total Cost using the HOLD TITE NUT LOCK on one Box Car Body | 1.51 |
| Difference in Cost (per car) in favor using the HOLD TITE NUT LOCK | $1.85 |

**WHAT MORE? NOTE THE SIMPLICITY**—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

**Why not save this Cost by always using the HOLD TITE NUT LOCK?**

The cheapest device used; absolutely effective. Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

**Edward A. Robinson Co., Ltd.** 228 Craig St. West Montreal

**THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF**

# Canada Iron Foundries, Limited

Chilled Tread Cast Iron Car Wheels for All Services
Cast Iron Water, Gas and Culvert Pipe,
Flanged Pipe and Specials
Railway Castings

HEAD OFFICE:

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# Machine Shop, Foundry and Construction Supplies

Micrometers
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"Vulcan"
Pipe Vises
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Pipe Wrenches

In addition to the tools shown, our line includes Set Screws, Cap Screws, Machine Screws, High Speed and Carbon Drills, Files (extra large stock) and a complete line of machinists' tools (Starrett, Brown & Sharpe, etc.)

We also carry a heavy stock of Bar Iron, Sheet Iron, (black and galvanized), Machine Steel, Cast Steel, High Speed Steel, Cold Rolled Steel, etc.

Pleased to quote prices and time of delivery.

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"Red Hot" Torches.

# Carbon Specialties for Oxy-Acetylene Welding

## *Carbons for Electric Welding*

Plates and rods of all shapes and sizes, and carbon paste. Columbia Welding Carbon Products are indispensable where the utmost advantages of oxy-acetylene welding are realized. With carbon dams, retainers, and plugs the heaviest welds are made on castings without dismantling; welds are reinforced to any strength desired; vertical welding is greatly simplified. Where the flow of metal must be restricted to a definite area, there is no substitute for carbon.

Columbia Welding Carbon Products are superior for electric welding and cutting.

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**BUFFALO BEAMS ARE BEST BEAMS**

*Offices*

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Brake Beams for all Classes of Cars, Locomotives and Electric Equipment

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**ASBESTOS AND MAGNESIA MATERIALS**

Locomotive Lagging
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Locomotive Packings, including Air Pump, Throttle, Valve Stem, Cab Cock, Gaskets, etc.
Roofings
Mastic Flooring
Transit and Ebony Asbestos Wood
Transite Smoke Jacks
Refrigerator and Steel Passenger Car Insulation

**POWER PLANT SPECIALTIES**

Pipe Coverings for all classes of service.
High Pressure, Low Pressure and sheet Packings.
High Temperature Cements
Steam Traps
Insulating Cement
Electrical Supplies

**FOR AIR BRAKES ON LOCOMOTIVES AND CARS**

Automatic Slack Take-up.
Packing Cups and Gaskets.
Expander Rings.

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**NEW YORK CITY**
**10 Factories—Branches in 63 Large Cities.**
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# Pole Line Hardware
# Catenary Construction Hardware
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**Acme Stamping & Tool Works Limited**
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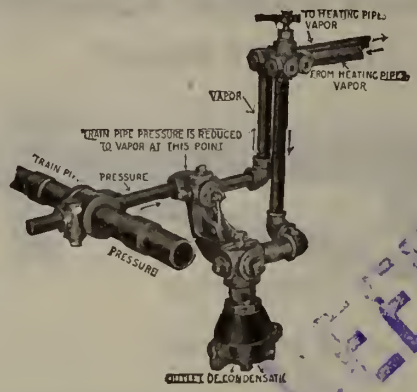
MADE IN CANADA AT

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61 DALHOUSIE STREET - MONTREAL, QUEBEC

F. A. PURDY, SALES REPRESENTATIVE. S. P. HARRIMAN, ASS'T. TREASURER.

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Makers of Base-Supported and 100% Rail Joints for Standard, Girder and Special Rail Sections. Also Joints for Frogs and Switches, Insulated Rail Joints and Step or Compromise Joints.

*PROTECTED BY PATENTS* *Grand Prize, San Francisco, 1915*

Thor

## One-Piece Long Stroke Hammer

CAN'T COME LOOSE

Handle, Barrel and Valve Chambers are all in one solid piece of steel forging, instead of being encased in the usual three parts. More rivets per day.

A Powerful and Durable, Long Stroke Riveting Hammer in which the usual bothers never appear.

**ONE-PIECE** Long Stroke Riveting Hammer. Can also be furnished with inside trigger. Most economical and efficient Air Hammer made.

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# THE PYLE-NATIONAL COMPANY

Type "K-2" 500 watt 32 volt Turbo-Generator

*Manufacturers of*

Locomotive Headlights

and

Steam Turbo-Generators

of all descriptions

**THE PYLE-NATIONAL CO.**
**CHICAGO**

*Canadian Agents*—**The Holden Co., Ltd.**

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# Marconi Wireless Apparatus

INSTALLED — OPERATED — MAINTAINED

EQUITABLE CONTRACT RELIEVING SHIPOWNERS OF RESPONSIBILITY

Concerning maintenance of the Apparatus—Compliance with Government Regulations—Handling of Traffic, Accounting, Etc.

## Marine Switchboards

MADE AND INSTALLED

FOR SHIP LIGHTING AND POWER DISTRIBUTION

*Communicate Your Requirements to :*

KILL
LAST AD.

## The Marconi Wireless Telegraph Company of Canada, Limited

***Contractors to Canadian and British Governments***

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HALIFAX

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ST. JOHNS
NFLD.

**Lagonda Arch Tube Cleaner**

**Lagonda Cleaner Removing Scale from Arch Tubes.**

# Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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St. Henry, MONTREAL

Toronto Office
Traders Bank Building

**PAXTON-MITCHELL LTD.**
Piston Rod and Valve Stem Packing for Super Heat and Saturated Steam.
"Packing that Packs." Manufactured in Canada.

**DUNTLEY-DAYTON**
Pneumatic Tools. Tools that are guaranteed.
Ask for trials or tests and satisfy yourself.

**THE "IMP" DROP-FORGED RIVET SET**
Made in Canada from steel made in Canada.
Conduct Break-down test; satisfy yourself.

**"CULVER" BALL BEARING JACKS**
Once tried always used. Convince yourself—ask for trial. Apply and operate wherever Jacks can be used. Note results.

**"INTERNATIONAL" PLASTIC METALLIC PACKING**
All that its name implies. Good materials are only determined by results obtained in service. Ask about it. This is a Packing that overcomes the necessity for carrying many styles and sizes. "INTERNATIONAL" PLASTIC METALLIC conforms to all sizes and shapes of stuffing boxes.

**INTERNATIONAL "RAPID" HOSE COUPLERS**
Something simpler and better.
We carry in stock full line of Round House, Back Shop and Machine Shop Supplies.

**We are Canadian Distributors for QUAKER CITY RUBBER CO. Their complete line of Mechanical Rubber Goods Carried in Stock. WE RESPECTFULLY SOLICIT YOUR VALUED INQUIRIES.**

**INTERNATIONAL MACHINERY & SUPPLY CO., LTD., 421 St. James St., Montreal**

**Western Representatives—Gordon & Belyea Limited, 148 Alexander St., Vancouver, B.C., and Calgary Machinery and Manufacturing Co., 317 Alberta Corner, Calgary, Alberta.**

# DOMINION IRON & STEEL CO., Limited

**Manufacturers of PIG IRONS—SAND and MACHINE CAST—FOUNDRY and BASIC**

## Basic Open Hearth Steel Products

Rails Blooms Billets Slabs Bars
Wire Rods Wire and Wire Nails

## Coke Oven By-Products

Sulphate of Ammonia Benzol Toluol Xylol
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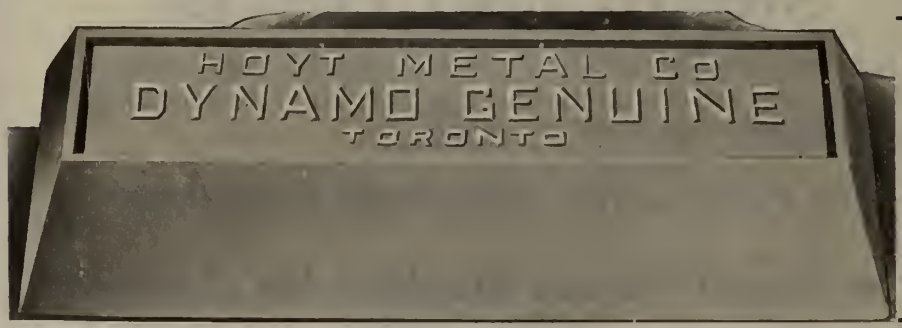


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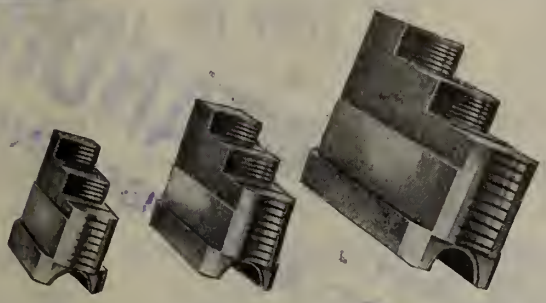

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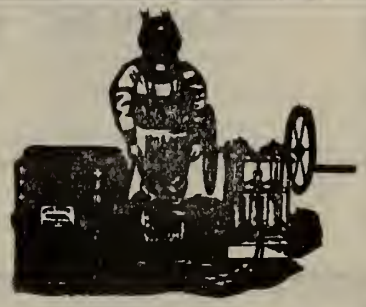

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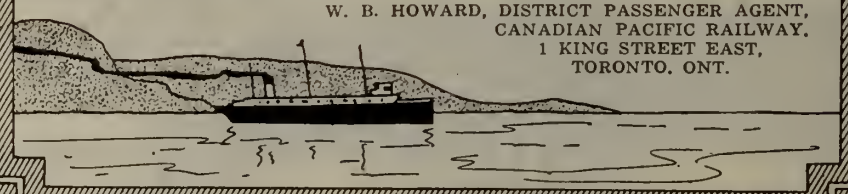

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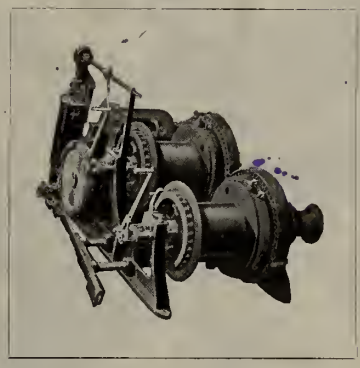

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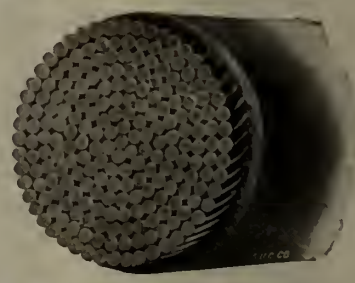

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**Algona, Iowa**

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ESTABLISHED 1898.

Number 269 TORONTO, CANADA, JULY, 1920 Subscription Rates, Page 383


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Will save one-half your labor. It is ***absolutely safe*** and ***trouble proof.***

It cannot be put out of commission by careless workmen.

25 to 100 tons capacity.

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Steam Railways and General, Page 337 Electric Railways, Page 391 Marine and Shipbuilding, Page 401

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Catalog K shows the Brownhoist doing many kinds of work. We will be glad to send you a copy.

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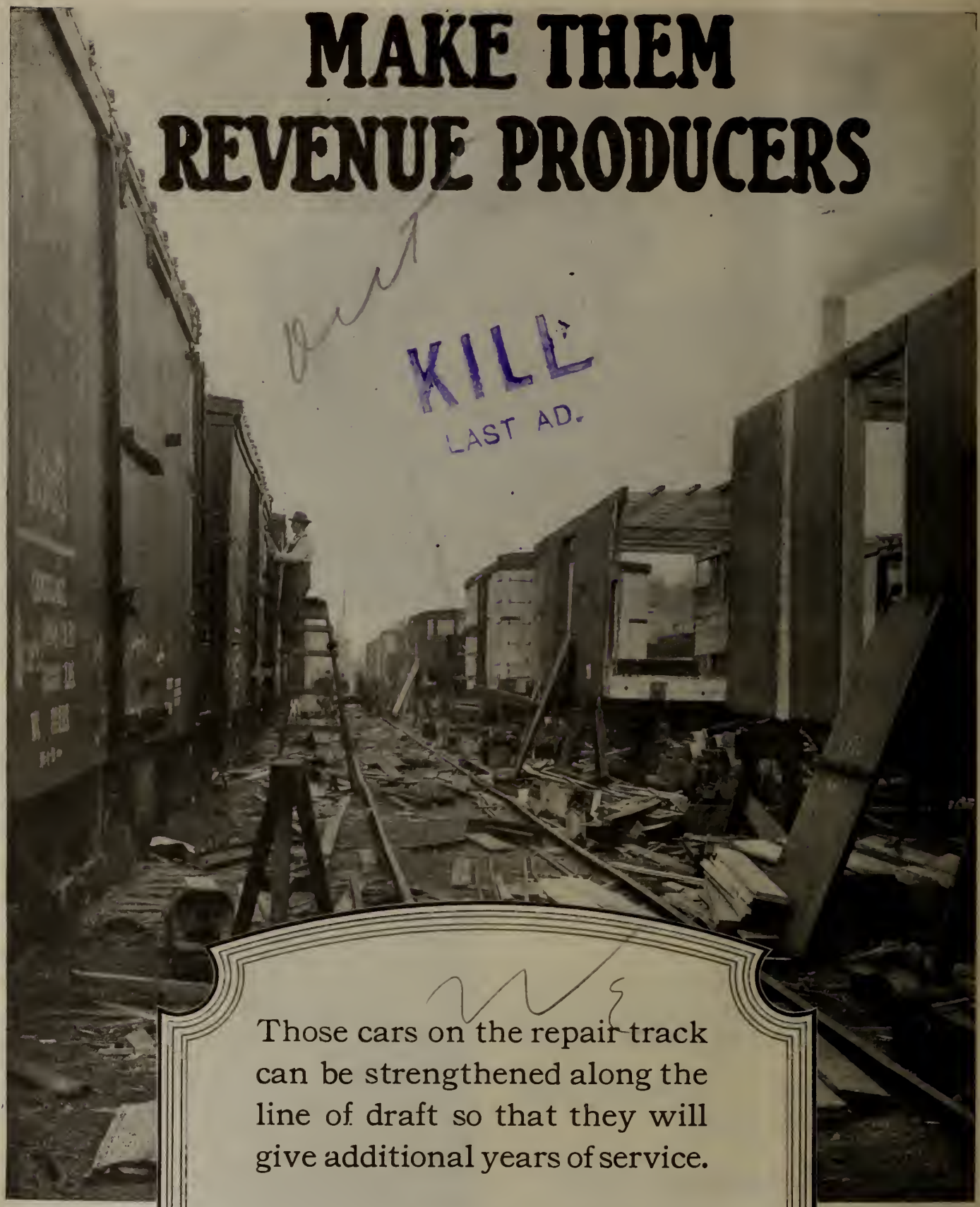


Those cars on the repair track can be strengthened along the line of draft so that they will give additional years of service.

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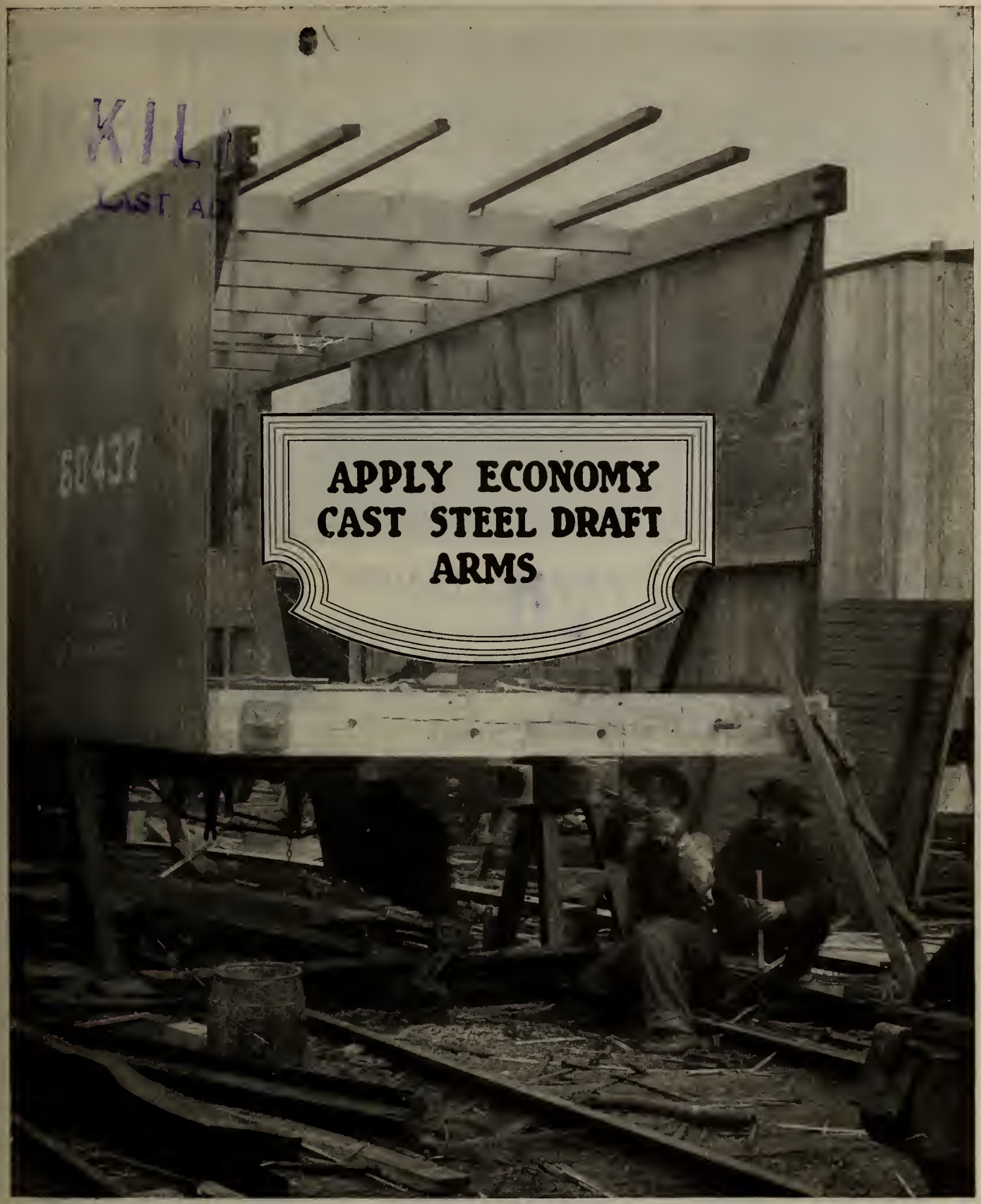


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NEW YORK CHICAGO ST. LOUIS

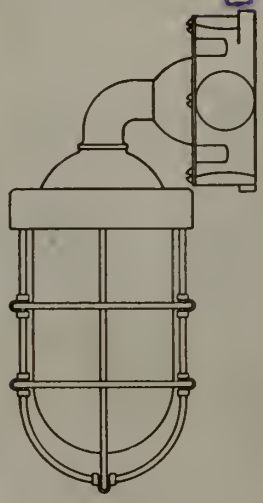
## "CANADIAN TRADER"

2,225 GROSS TONS

Built for the Department of Marine by

PORT ARTHUR SHIPBUILDING COMPANY

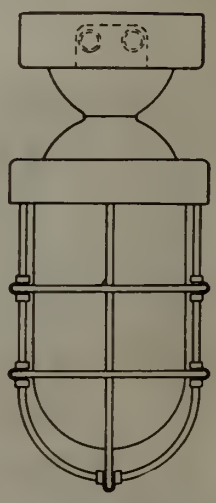
Port Arthur, Ontario



Inside Deck Fitting

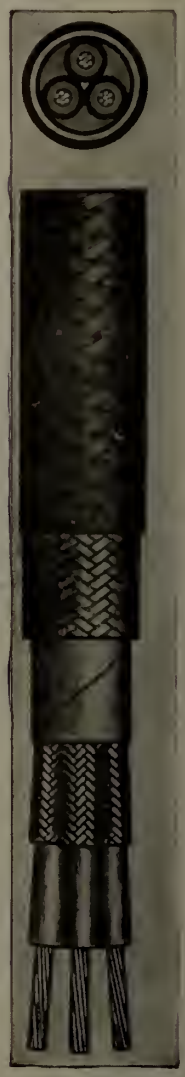
# A Steel Cargo Vessel

Recently delivered to the Canadian Government. She is wired throughout with Cables and Fittings approved by the Department of Marine and *manufactured by*



Outside Deck Fitting

Two Conductor Wire Braided Lead Covered Marine Cable



Three Conductor Wire Braided Lead Covered Marine Cable

# Northern Electric Company

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Single Conductor Wire Braided Lead Covered Marine Cable

# Reduce Your Overhead Expense With Drew Railway Material

In the difficult financial conditions under which electric railways are operating, the minimum expense in adequately maintaining equipment is a most vital problem.

We recommend the Drew devices as a decided factor in curtailing such expense by giving maximum service and most satisfactory operation.

Drew Hanger, for Trolley supported in shallow wooden trough, mines or structures with low head-room.

Drew Screw Clamp Trolley Ear, supplied both in malleable (galvanized by hot dip process) or in bronze.

Drew Samson Splicing Ear, stays upright in the span, cannot make a hard spot in the line and is non-arcing.

Drew Samson Tunnel Approach, for taking trolley into barns, under bridges, elevations or through tunnels where there is minimum clearance.

*Distributed exclusively by*

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LIMITED

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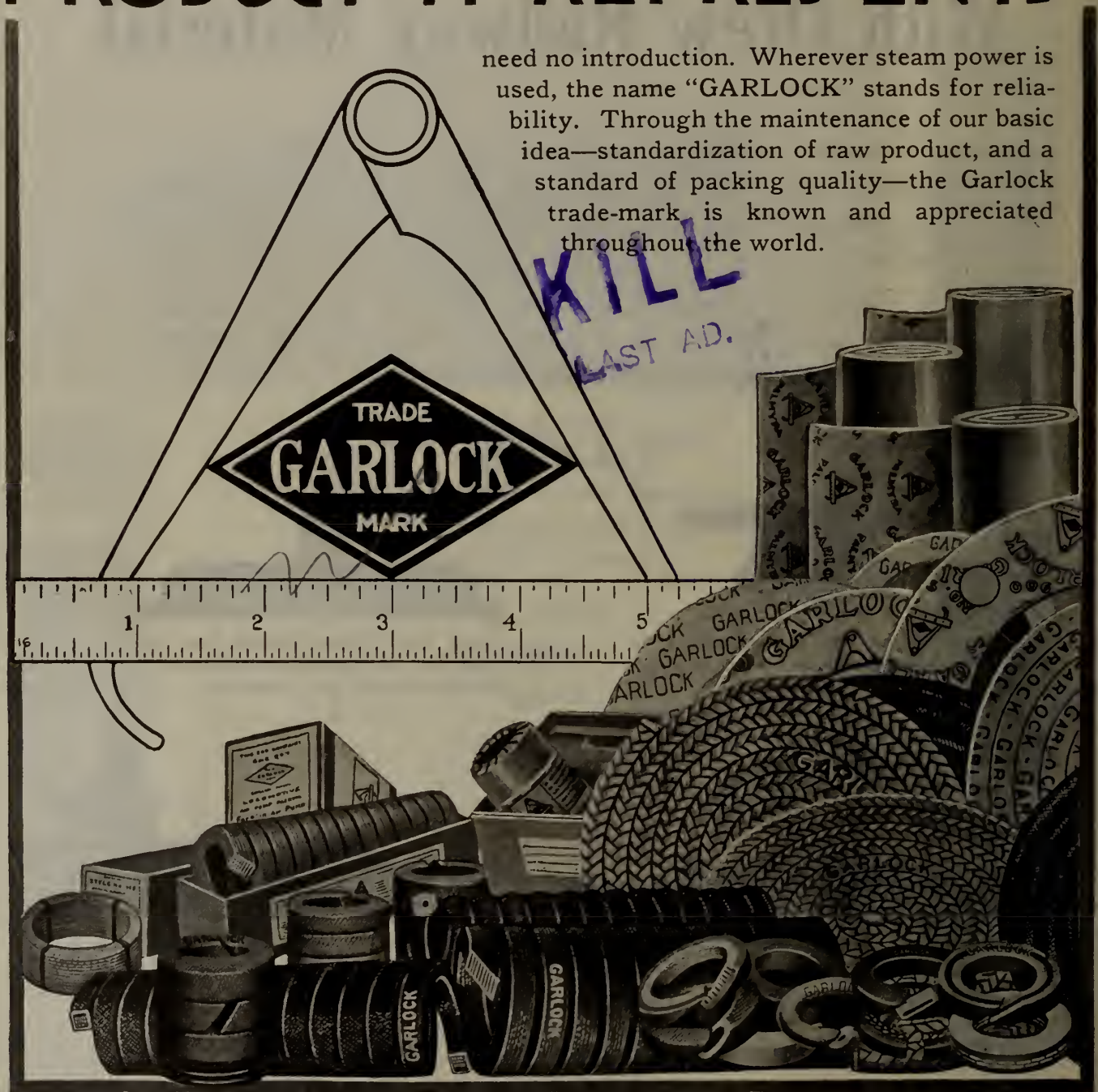
need no introduction. Wherever steam power is used, the name "GARLOCK" stands for reliability. Through the maintenance of our basic idea—standardization of raw product, and a standard of packing quality—the Garlock trade-mark is known and appreciated throughout the world.

KILL LAST AD.

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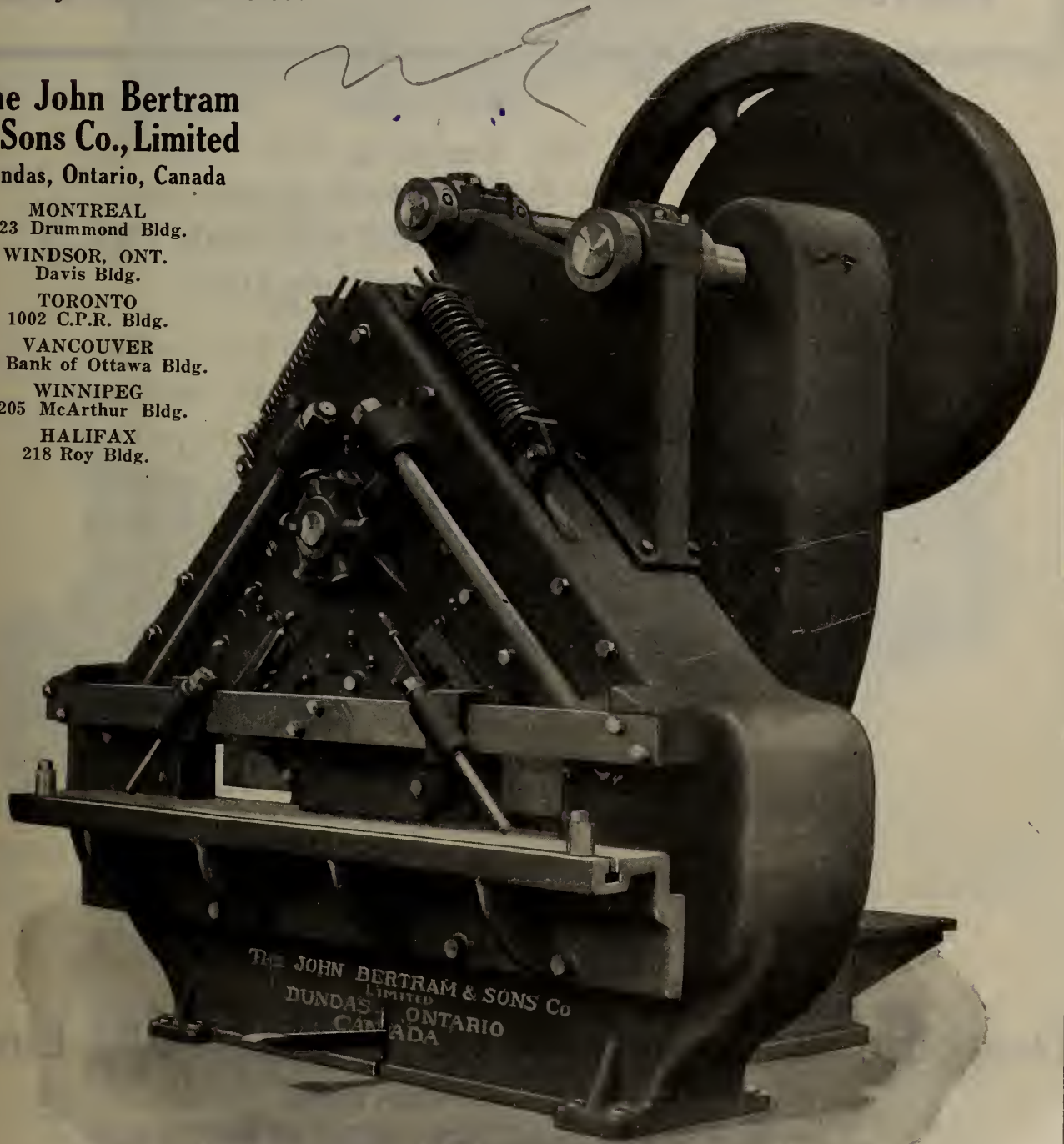


P13201

SAVE COAL by keeping the heating surfaces of your boilers free from scale. One-sixteenth of an inch of scale increases your coal consumption 10.8%.

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SAVE BOILER REPAIRS by reducing the amount of work made necessary by leaks caused by scale in your scale forming water districts, and unnecessary expansion and contraction caused by frequent washing and water changes in your foaming districts.

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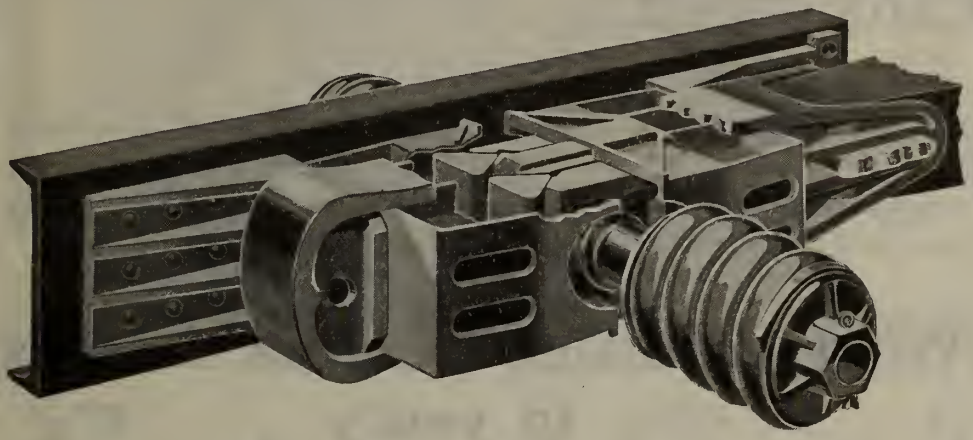
## MADE IN CANADA



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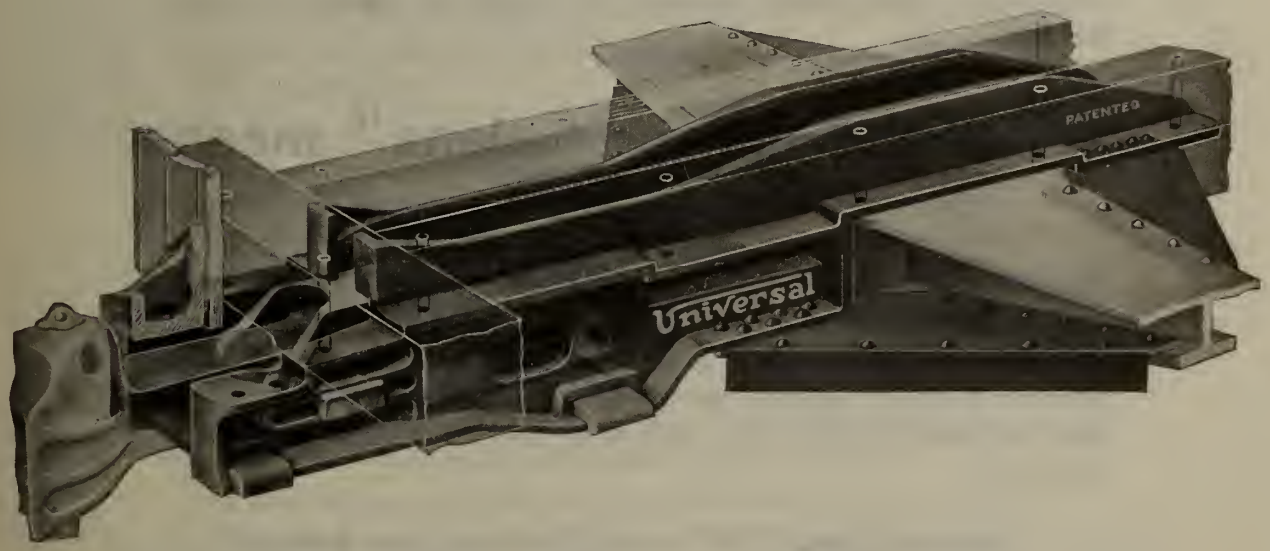


REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
TWIN SPRING DRAFT RIGGING
CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

## MADE IN CANADA

# WEBB. G. KRAUSER
**Transportation Building, MONTREAL**

# Yes! A Good Name Means Much!

Galena

The name *"Galena"* is synonymous with *"the Best"* in railway lubrication the world over. Galena Oils carry a good name—a reputation of worthiness and dependability. A reputation built on a half century's faithful and efficient performance.

## What the name "Galena" means to you

To the customer the Galena name is a guarantee of quality—an assurance of uniform goodness, of efficiency and economy. Galena Oils have always delivered a maximum mileage and demonstrated their ability to stand up under the most severe service conditions. The name *"Galena"* is a seal of safety and satisfaction.

## What the name "Galena" means to us

To this company the word *"Galena"* is a title that is guarded most jealously. A product must be worthy the name before it can carry it. Every care and precaution is taken that each Galena product is up to Galena specifications, a governing principle of this company from which the slightest deviation will not be permitted.

*The name "GALENA" is our Bond and your Security.*

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## Galena-Signal Oil Company

**Works - - - - - Toronto, Ont.**

**Stocks at Ft. William, Winnipeg, Vancouver.**

**Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg., Montreal.**

# Steady, Sturdy, Growth

From one Mudge car in service to over seven thousand has been the accomplished progress of our business years.

Ours has been a steady growth builded on the confidences which you have placed in our cars and in this Company.

Each year has seen more members added to our staff—each year Mudge Motor Cars (*our business seeds*), have been more widely sown and known. Now there are few railroads but who have judged the success, the simplicity and economy of Mudge cars.

And as time has passed, our branches have spread out to facilitate the handling of your business.

Now, with the operation of a new and modernly equipped factory, located in the biggest railroad center in the world, we are more thoroughly prepared to bring to you the quality and quantity production which coming conditions promise to demand.

So with the new year Nineteen-Twenty before us, we are ready to enter an era of progress with an even broader conception of how best to serve and satisfy both our old and our prospective customers.

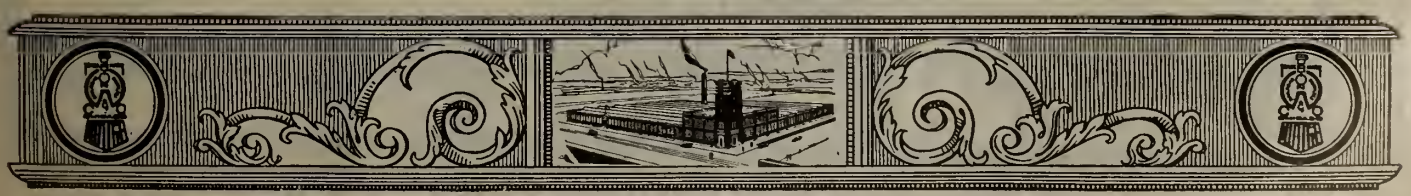
## Mudge & Company

*Manufacturers—Railroad Equipment*

CHICAGO, ILL., U. S. A.

Canuck Supply Co., Ltd., *Canadian Representatives*

Montreal Toronto Winnipeg



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FOR STEAM AND ELECTRIC · RAILWAYS

Do You realize that,
in spite of higher first cost,

## MANGANESE-STEEL

is in the end the really economical material for trackwork at points of intersection or divergence

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## CANADIAN STEEL FOUNDRIES LIMITED

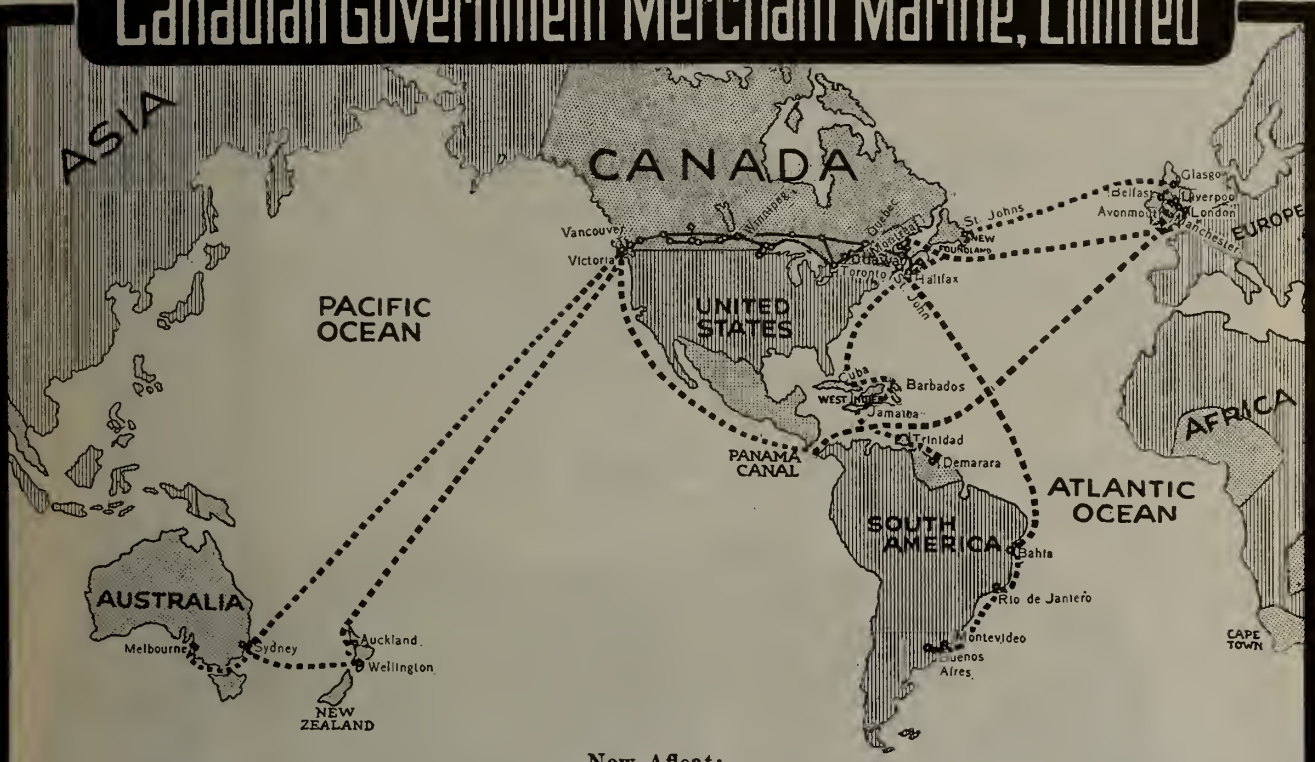
TRANSPORTATION BUILDING
MONTREAL

"60 Vessels"

Canada's Commerce Carriers

"Total Tonnage 325,000"

# Canadian Government Merchant Marine, Limited

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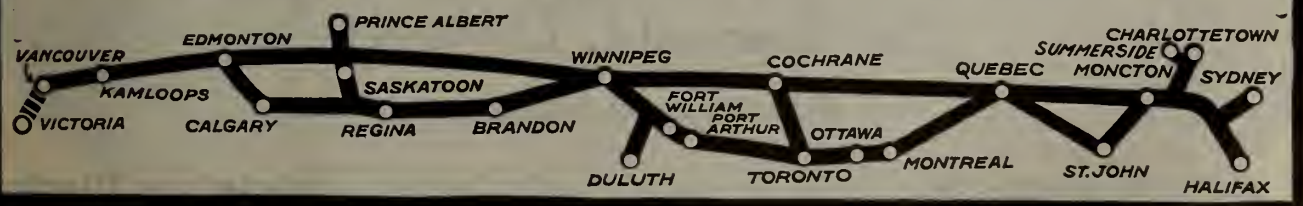
Weekly Freight Service to United Kingdom from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Fortnightly Freight Service to West Indies and Cuba from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter. Monthly Freight Service to Australia and New Zealand from Vancouver.

**For further information apply to any Canadian Railway Agent or**

D. O. WOOD, Traffic Manager, Exp. & Imp. Dept., Canadian National Rys., Toronto, Ont.

W. A. CUNNINGHAM, Exp. & Imp. Freight Agt., 230 St. James Street, Montreal, Que.




# Canadian National Railways

# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

## *"Boss Lock Nuts"*

Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

## Boss Lock Nut Company
### of Canada, Limited

*Write for latest catalogue.*

HEAD OFFICE:
**263 St. James St.**
**MONTREAL, Que.**

**McIntyre Block**
**Winnipeg, Man.**

Quality

# CONFIDENCE

THE GREATNESS OF BRITAIN IS FOUNDED ON HER INTEGRITY.

HER STRENGTH SHE DERIVES FROM WORLD COMMERCE—HER ENDURANCE FROM CONFIDENCE.

THE WAR TEMPORARILY RETARDED HER CONSTRUCTIVE EFFORTS, BUT THE POWER OF THE CONFIDENCE OF THE PEOPLES OF THE WORLD WILL RESTORE TO HER IN MORE BRILLIANT FORM THE LEADERSHIP SHE HAS JUSTLY EARNED AND PROUDLY HELD.

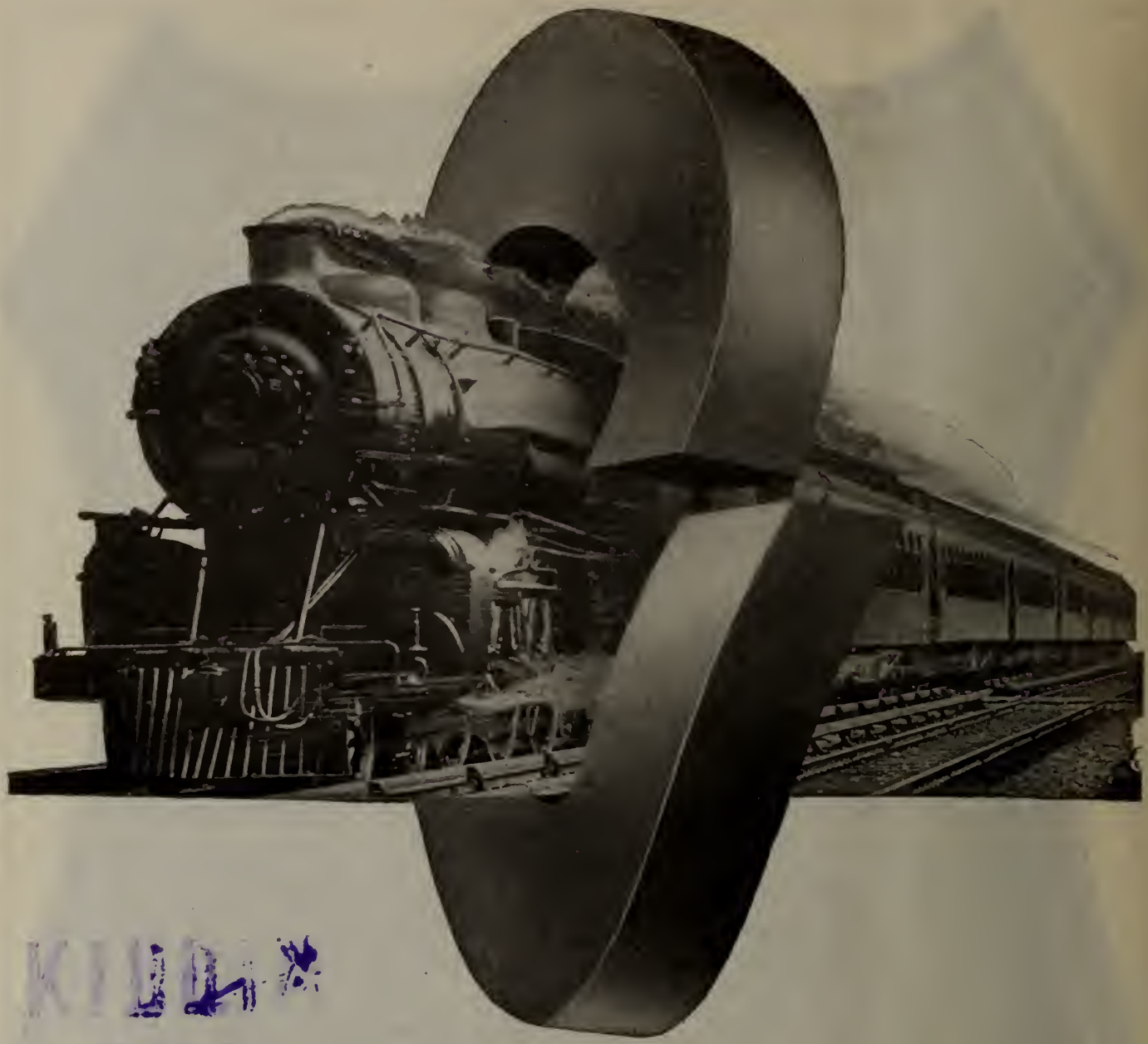
CONFIDENCE IS THE FOUNDATION OF OUR POSITION IN THE WORLD OF IRON AND STEEL—OUR PROGRESS DEPENDS ON IT.

WE HAVE BEEN SUCCESSFUL IN THE PAST—THE FUTURE IS BEFORE US. TO ADVANCE, WE MUST CONTINUE TO MERIT THE CONFIDENCE OF THE BUYERS OF STEEL AND IRON PRODUCTS OF EVERY DESCRIPTION IN CANADA, AND WE ARE DETERMINED TO ADVANCE.

THE
STEEL COMPANY
OF
CANADA
LIMITED
HAMILTON MONTREAL

Service

FILE
LAST AD.



# HIPOWER NUT LOCKS

## Carry 'em Through

## THE NATIONAL LOCK WASHER CO.

Established 1886

NEWARK, N. J.

New York Chicago Detroit

# INCo Monel metal

## *in a record-breaking pumping station*

| | |
|---|---|
| Break h. p. of Turbine | 1600 |
| Speed of Turbine r. p. m. | 3600 |
| Ratio of Gear | 6 to 1 |
| Capacity per 24 hours | 30,000,000 Imp. gals. |
| Head | 210 ft. |
| Pressure | 140 lb. |
| Superheat | 100° F. |

THE above pump—a DeLaval steam turbine centrifugal, installed by E. Laurie Company for the Low Level Pumping Station of the City of Montreal—holds the highest record of duty for any plant of this type yet installed.

The duty calculated on the basis of work delivered by the pump to the water between the suction and discharge nozzles is 134,600,000 ft. lb. per million B. t. u.

Because of its great resistance to the erosive action of superheat Monel Metal was used for the buckets in this turbine. In fact, the superiority of Monel Metal has led the DeLaval Steam Turbine Company, Ltd., which has developed an international reputation for water works installations, to use it for buckets in all of their turbines.

KILL
LAST AD.

The name *Monel* is given to a line of metal products produced by the International Nickel Company from a natural nickel alloy—67% nickel, 28% copper, and 5% other metals. These products include Monel blocks, Monel rods, Monel castings, Monel sheets, Monel wire, Monel strip stock, etc.

Monel Metal resists alkalies, high heats, most acids, and corrosion, abrasion and the erosive action of hot gases. It can be forged, cast, machined, brazed and welded.

If you desire any further information about Monel Metal, our Technical Department is at your service.

The International Nickel Company of Canada, Limited

HARBOUR COMMISSION BUILDING

TORONTO, ONT.

INCo MONEL METAL TRADE MARK

INCo NICKEL TRADE MARK

# Barrett Roofings, Cements Industrial Paints etc.

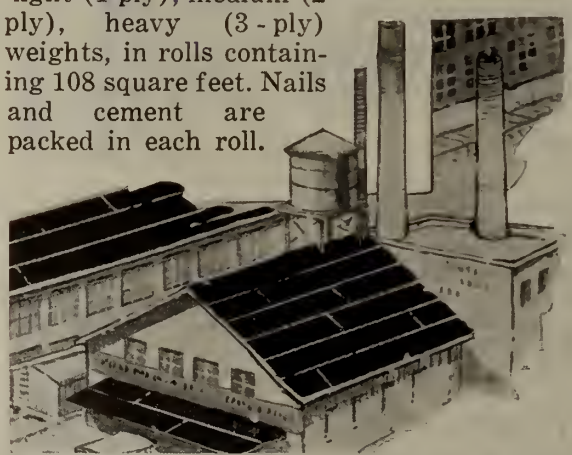
BARRETT PRODUCTS are noted everywhere for their high quality. For many years they have been giving perfect satisfaction to thousands of users. Barrett Products are absolutely dependable—they are *always* good.

## *Everlastic Rubber Roofing*

Everlastic "Rubber" Roofing is a strong, pliable fabric made by thoroughly saturating the best grade of roofing-felt with a high-grade waterproofing composition. It is then heavily coated on both sides so that it will resist not only the elements which attack a roof from its upper side, but will also prevent deterioration from steam, vapors, and gases that often reach the under side.

The hottest sun will not cause it to run. Zero cold will not shrink or crack it. It gives satisfaction under the most extreme climatic changes. Millions of squares of this roofing are in use.

Everlastic "Rubber" Roofing comes in light (1-ply), medium (2-ply), heavy (3-ply) weights, in rolls containing 108 square feet. Nails and cement are packed in each roll.



## *Everlastic Liquid Roofing Cement*

Unequalled for re-surfacing worn-out felt and "rubber" roofs. Has the consistency of thick molasses; is easy to apply and dries quickly into a hard, elastic, wonderfully durable coat. Proof against moisture, acids, alkalies and fumes. Has same base as Barrett Specification Pitch, which is famous for its waterproofing qualities.

Comes ready for use in packages ranging from 1 pint tins to 40 gallon barrels.

## *Elastigum Plastic Patching Cement*

For patching holes and leaks in all kinds of roofs, repairing flashings, relining gutters, etc. Known as the "Plastic Cement of a Thousand Uses."

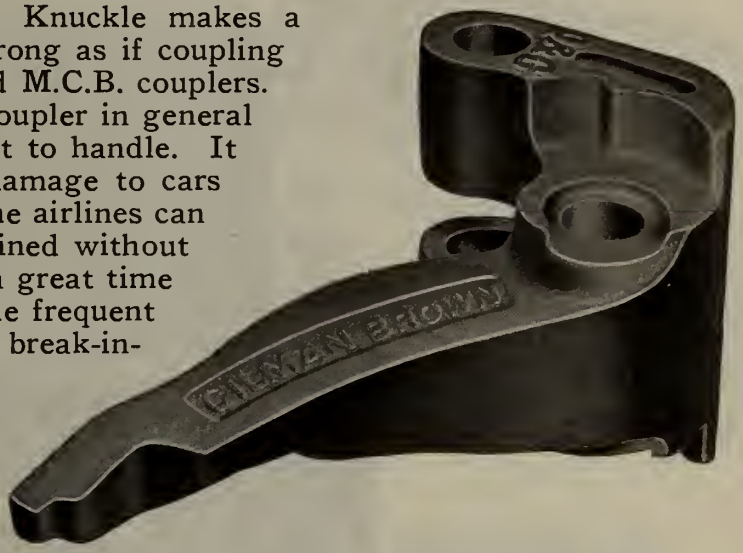
Elastigum is tough, elastic, plastic, water-proof, acid-proof and alkali-proof. Requires no heating or mixing. Very inexpensive. Put up in 1, 5, 25 and 100 lb. packages; ½ barrels and barrels.

*If your dealer cannot supply you with Barrett Products write us and we will. Descriptive booklets regarding these products sent free on request. Address nearest office.*

ST. JOHN, N.B., HALIFAX, N.S. SYDNEY, N.S. The Barrett Company LIMITED. MONTREAL TORONTO WINNIPEG VANCOUVER

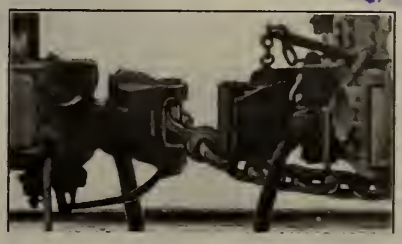
# Gilman-Brown Emergency Knuckle

The Gilman Brown Emergency Knuckle makes a normal coupling, as close and strong as if coupling was made between two uninjured M.C.B. couplers. It fits practically every M.C.B. coupler in general use. Being light, it is convenient to handle. It reduces possibilities of further damage to cars due to chaining up. By its use the airlines can be safely coupled up and maintained without the use of a dummy hose. It is a great time saver for train men and avoids the frequent traffic delays due to mending break-in-twos.




*The Trainman's "Friend in Need"*

*The Right Way*



*The Wrong Way*

*Information gladly given on request.*

## The General Supply Co. of Canada, Ltd.

MONTREAL
TORONTO

**356 Sparks Street**
**OTTAWA**

WINNIPEG
VANCOUVER

# EVAPORATORS

## The New Weir Evaporator

WEIR PATENT
CONTINUOUS BRINING &
AUTOMATIC FEEDING.

## Embodies Three Important Improvements

1. The Patent Brine Ejector.
2. The Automatic Feed Regulator.
3. The Special Tube Coupling.

These devices ensure uniform efficiency, simplify working, and lessen costs of upkeep.

They are fully described and illustrated in our New Evaporator Booklet—Send for it.

## G. & J. Weir, Limited, Scotland

MADE IN CANADA

Contractors to the British Admiralty and War Office and to the Governments of Australia, Canada, Egypt, India, New Zealand, South Africa, Argentine, Belgium, Brazil, Chili, Denmark, France, Greece, Holland, Italy, Japan, Norway, Portugal, Russia, Siam, Spain, Sweden, United States, Etc., Etc., also to the leading Steamship Lines and principal municipalities throughout the world.

MADE IN CANADA

Sole Agents

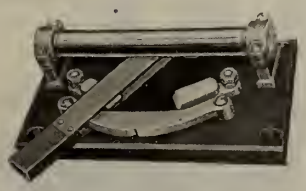
## PEACOCK BROTHERS, LIMITED
MONTREAL

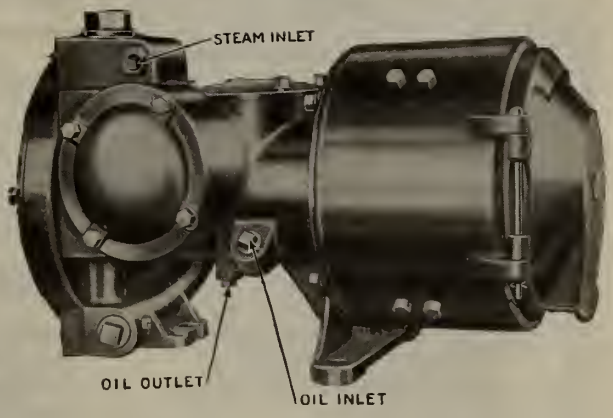
# KEYSTONE LOCOMOTIVE HEADLIGHT EQUIPMENT

*Write for Bulletin No. 166*

## Keystone Material for Steam Railroads

*Wire*
*Keystone Lamp Guards*
*Crane Contact Rail Material*
*Keystone Universal Collectors*
*"Protected" Rail Bonds*
*Overhead Line Material*
*Keystone Turbo-Generators*
*Golden Glow Locomotive Headlights*
*Demountable Mirror Units*
*Focusing Device Adopters*
*Keystone Gauge Lights*
*Keystone Tender Rearlights*
*Keystone Classification Lights*
*Keystone Marker Lights*
*Golden Glow Roundhouse Fixtures*
*Keystone Headlight Switches*
*Junction Boxes*
*Terminal Blocks*
*Connectors*
*Mazda Lamps*
*Miscellaneous Supplies*



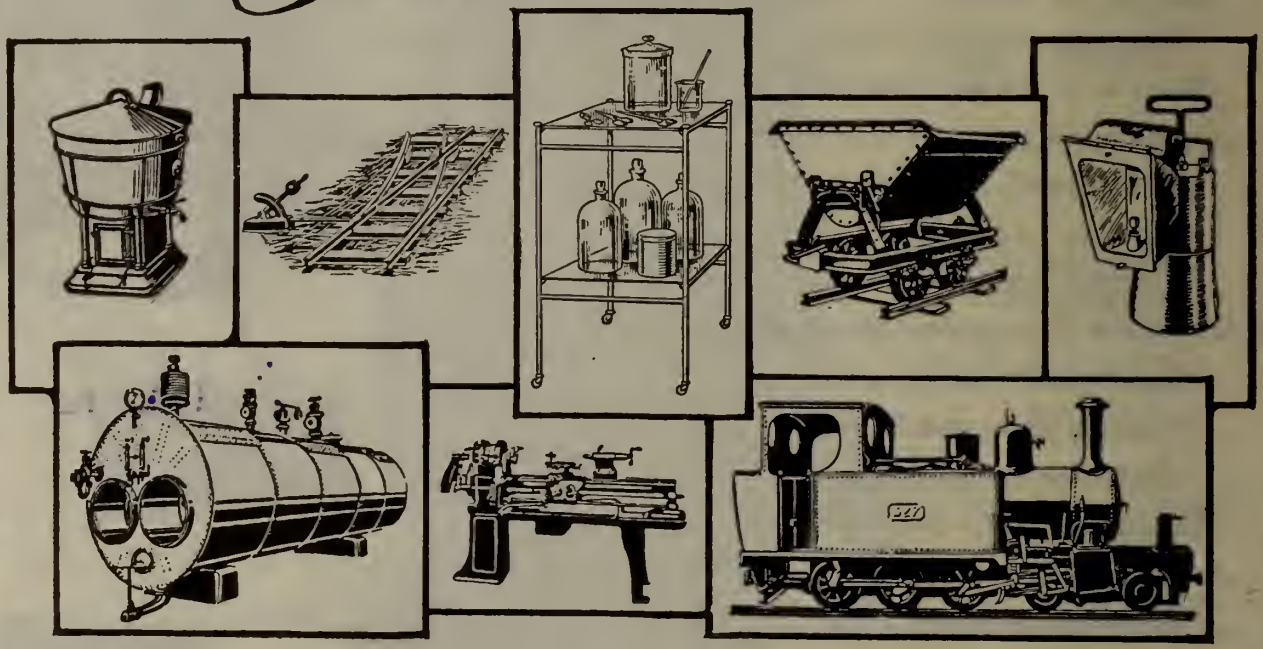



**Electric Service Supplies Co.**
*MANUFACTURERS*
PHILADELPHIA, 17th and Cambria Sts. — NEW YORK, 50 Church St. — CHICAGO, Monadnock Bldg.

**Lyman Tube & Supply Co., Ltd.**
*CANADIAN DISTRIBUTORS*
MONTREAL, Lyman Tube Bldg. — WINNIPEG, 703 Confederation Life Bldg. — TORONTO, 33 Melinda Street

GR MINISTRY of MUNITIONS

# GOVERNMENT PROPERTY For SALE



The Disposal Board
have

## STOCKS

lying in the United Kingdom and Available for Export
of

## ENGINEERING STORES

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| Ferrous and Non-Ferrous Metals | Contractors' Stores | Agricultural Machinery |
| Plant and Machinery | Electrical Instruments and | Aircraft |
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| Factory Stores | Medical Stores | Textiles and Clothing |
| Machine Tools | Chemicals and Explosives | Boots and Leather Equipment |
| Railway Material | Motor Vehicles | Motor Boats, etc., etc. |

Buyers should instruct their representatives in the United Kingdom to communicate with D. B. 8 Canadian Export Department, Ministry of Munitions, Whitehall Place, S.W.

Cable address: "DISPEXPORT, MUNORGIZE, LONDON."

# The Trainmen and the Shopmen Like Them

O-B Catchers and Retrievers are popular with the trainmen because they operate promptly and efficiently—without fuss.

And they are favorites in the shop because their rugged simplicity keeps them on the cars without repairs.

O-B Trolley Catcher
For city service.

## O-B TROLLEY CATCHER
### Has Positive Action

When the pole flies the O-B Trolley Catcher stops it positively.

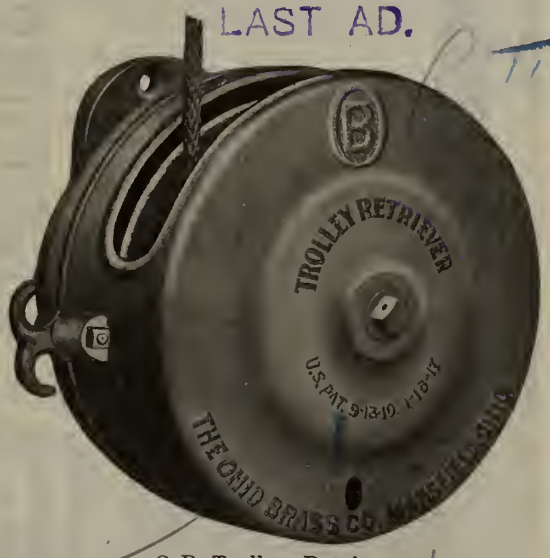
The rebound is never sufficient to release the catcher's hold and permit the pole to "step-up".

KILL
LAST AD.

## O-B RETRIEVER
### Quick on the Trigger

The instant the wheel leaves the wire the O-B Retriever stops the pole and the powerful spring pulls it well below trolley height. Even at very high speed a flying pole does no damage.

Simplicity of mechanism and rugged construction keep O-B Retrievers working




O-B Trolley Retriever
For high speed service

*Write for free trial offer*

## The Ohio Brass Company, Mansfield, Ohio

DOMINION OF CANADA
NOVA SCOTIA
WASHINGTON
OREGON
MONTANA
IDAHO
WYOMING
NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXI
N.DAKOTA
S.DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
MICHIGAN
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
S CAROLINA
N.CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASS
CONN
MARYLAND
49
The map above shows the location of the 49 Foundries in the United States and Canada represented by the Association of Manufacturers of Chilled Car Wheels.
Chicago 3
St Louis 2
Buffalo 4
Pittsburg 2
Cleveland 2
Amherst N.S.
Montreal
Mich. City. Ind.
Louisville.
Mt. Vernon Ill.
Ft Wayne. Ind.
Birmingham
Atlanta.
Savannah
Boston
Detroit
St. Paul.
Kansas City. Kan
Denver
Tacoma
Los Angeles
Rochester N.Y.
Sayre. Pa.
Lime Rock. Conn.
Albany.
Toronto.
New Glasgow N.S.
Madison. Ill
Berwick Pa
Huntingdon. W.Va.
Wilmington. Del.
Houston Tex
Hannibal Mo
Reading Pa
Baltimore
Richmond Va.
Ft William. Ont.
St. Thomas "
Hamilton "
Ramapo. N.Y.
Marshall. Tex
Capacity
20,000
CHILLED
IRON WHEELS
Per Day
25 Million in Service
Association of Manufacturers
of Chilled Car Wheels
1229 McCormick Bldg. Chicago.

4300-Ton Steel Freighter "LE QUESNOY"

# Builders of Steel Ships and Marine Engines, Ship Repairs, etc.

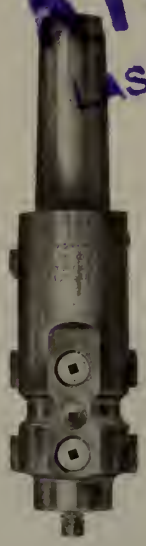
## Dominion Shipbuilding & Repair Co., Limited

**Office, Docks and Yards**
**Foot of Spadina Avenue**

**Toronto** **Canada**

KILL
LAST AD

SPECIAL TWO-IN-ONE DAVIS EXPANSION CAR WHEEL BORING TOOL



REGULAR TWO-IN-ONE DAVIS EXPANSION CAR WHEEL BORING TOOL

"STANDARD" DAVIS EXPANSION CAR WHEEL BORING TOOL

# DAVIS EXPANSION CAR WHEEL BORING TOOLS

The world-wide reputation of Davis Expansion Car Wheel Boring Tools is based on their efficient, economical and dependable service in the thousands of shops where they are in use. They are not only recognized throughout the United States as standard equipment for correct wheel boring, but they are also extensively used in Canadian Wheel Shops, as well as in many foreign countries. This wide distribution is evidence of their efficiency and merit.

### MICROMETER ADJUSTMENT

Cutters in Davis Expansion Boring Tools are expanded to compensate for wear and sizes are accurately maintained, at all times, by the micrometer adjusting feature. The expansion mechanism is absolutely simple and thoroughly practical. An expanding wedge travels forward or back along a graduated micrometer adjusting screw (which is held stationary) and when moving forward, forces the cutters out equally, as the screw is turned. A special guide supports the wedge pilot, insuring perfect bearing of wedge against angle on each cutter. A hardened gib, controlled by a special screw, firmly clamps each cutter individually in the tool body. The expansion feature permits the use of fastest feeds and speeds and the rigid method of locking cutters assures absolute accuracy of bore—free from all chatter marks or other imperfections.

WEDGE BEARING

EXPANDING CUTTERS

## *Bore 98% of all Car Wheels*

Fully 98% of all Car Wheels in the United States are being bored with Davis Expansion Car Wheel Boring Tools and at a saving of at least 25% in cost.

The Davis System of wheel boring will effect a substantial saving in any shop. On repair work, all wheels are bored to fit the axles, saving the expense of turning down good axles to fit the wheels—and on new work, boring the wheels to fit standard gauges, then turning the axles to standard sizes to correspond. This is the adopted standard for correct wheel practice, employed in connection with Davis Expansion Car Wheel Boring Tools—tools with a practical expansion feature for compensation for wear on cutters and for maintaining standard sizes accurately, at all times.

Correct wheel boring will increase the mileage of car wheels and reduce the number of wheel failures due to thin, chipped or broken flanges.

Do it the Davis Way. Be sure all your wheel boring mills are equipped with Davis Expansion Car Wheel Boring Tools. Made in three styles and a number of sizes to meet the requirements of any shop.

*Send for particulars to-day.*

## DAVIS BORING TOOL CO.

— INCORPORATED —

**3742 Forest Park Blvd., - St. Louis, Mo., U. S. A.**

*CANADIAN AGENTS:*

**Williams & Wilson** Montreal, Que. **J. Bertram & Sons** Dundas, Ont. **Niles Bement & Pond** Hamilton, Ont.

# Make Our Engineers Responsible for Your Belting Equipment

Put it up to them to place your transmission equipment on a 100 per cent. efficiency basis. Make recommendations that will create savings, which in turn will practically offset any expenditure they may suggest.

So certain are we that our belting experts can practically eliminate your transmission troubles, we are quite willing to analyze your plant at no cost to you.

It would be an expensive item in your overhead if you were to attempt such an analysis, but our experts will do that work for you just as they have for many of Canada's largest manufacturers who have placed the responsibility for their transmission equipment in our hands.

Practically every plant has one or more drives that are hard on belts. Just such drives as these are now equipped with

# Dominion Friction Surface Belting

which for fifty years has justified every claim by satisfactory performance.

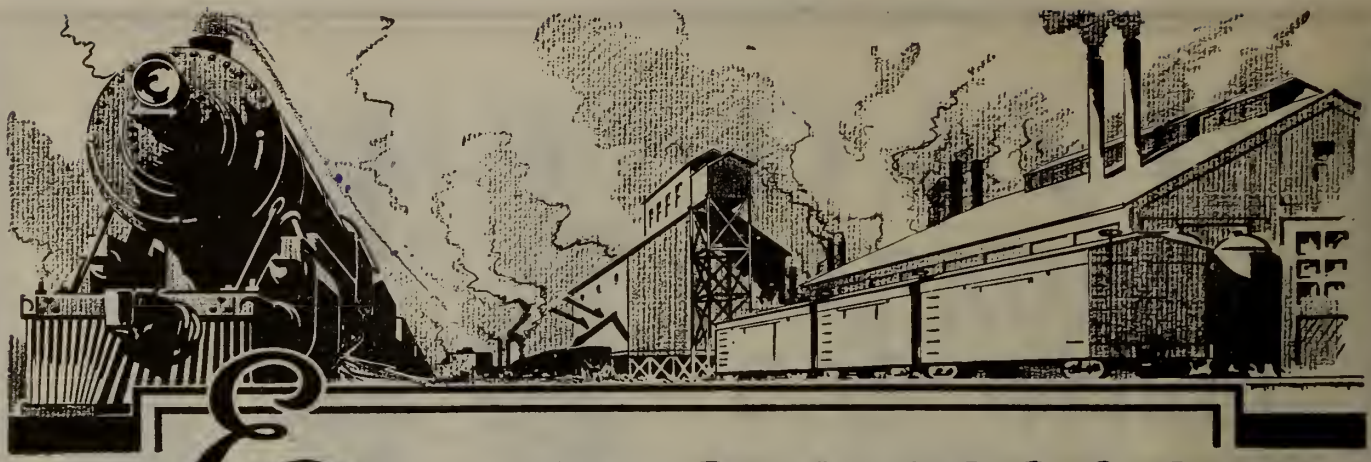
When you have belt trouble 'phone, wire or write our nearest service branch.

CANADIAN CONSOLIDATED RUBBER CO. LIMITED
DOMINION RUBBER SYSTEM
AND ASSOCIATED COMPANIES

*Our Dominion Hose, Packing and Industrial Rubber Goods are all the Same High Standard as Dominion Friction Surface Belting.*

## Dominion Rubber System Service Branches

| | | | |
|---|---|---|---|
| Halifax, | Toronto, | Fort William, | Edmonton, |
| St. John, | Hamilton, | Winnipeg, | Calgary, |
| Quebec, | London, | Brandon, | Lethbridge, |
| Montreal, | Kitchener, | Regina, | Vancouver, |
| Ottawa, | North Bay, | Saskatoon, | Victoria. |



# Economy

HUNTOON ECONOMY BRAKE BEAM With Reversible Strut possesses distinct points of advantage, affording decided benefits in the way of economy. Free from nuts, consequently it has none to get loose and fall off. There are no threads to strip or rust off. Cutting by wheel flange of the tension member is impossible. There are no pockets in the heads or beam to collect and hold moisture, no key slot in strut to cause breakage, and no riveting of the strut to weaken it or the compression member. The same head will fit either end of beam, consequently there are no "rights" or "lefts". The strut being reversible means there is only one beam to carry in stock.

These distinct points of advantage surely entitle the HUNTOON ECONOMY BEAM to your further consideration.

**Canadian Representatives: MOORE, CAMERON & HILL, Ltd.**

284 Beaver Hall Hill, Montreal 431 McIntyre Block, Winnipeg

## Joliet Railway Supply Co

NORTHWESTERN MALLEABLE IRON CO. PROP.

Railway Exchange Bldg. CHICAGO

LAST AD.

## Why Superior Graphite Paint is the Right Paint for Bridges

RIGHT manufacture from high grade materials — records of exceptional service over a period of thirty-five years —have established the reputation of SUPERIOR GRAPHITE PAINT as a leader among paints for the protection of structural steel and bridges.

In practice this reputation is maintained through—

1.—Ability to resist agencies which cause corrosion.

2.—Ability to resist agencies which destroy ordinary paint.

SUPERIOR GRAPHITE PAINT is manufactured under proven formula to meet known service conditions. Because of its durability the need for early repainting of bridges is eliminated.

SUPERIOR GRAPHITE PAINT is elastic—readily expands and contracts with the surface on which it is applied—does not crack or flake off under vibration and is unaffected by oils or gases.

SUPERIOR GRAPHITE PAINT has made good on many of the largest bridges throughout the country. Its use is definite assurance of long service, positive protection—low ultimate cost.

Color cards and painting recommendations on request.

**Dominion Paint Works, Limited**

*Makers of*

*Degraco Paints, Varnishes, Enamels.*

WALKERVILLE, CANADA.

Montreal, Toronto, Winnipeg, Quebec, Vancouver, Sydney.

# SUPERIOR GRAPHITE PAINT

**It Prevents Rust**

# Tradition was Disregarded When Goodyear Built Hose

THE beaten path of established customs has rarely been followed by Goodyear scientists.

Rapidly-changing industrial conditions demanded new and more efficient methods.

Breaking away from preconceived ideas of tire-building created the Goodyear Cord Tire—the finest tire in the world.

Applying the same analytical methods to industry, Goodyear redesigned Industrial Hose—scientifically developed it to meet the needs of present-day industry.

Take Goodyear Water Hose as an example.

Water Hose is rarely destroyed through high pressure. But every year thousands of feet is prematurely worn out because the *outside covering* is not sufficient to stand the constant scuffing and pulling over cinders, pieces of iron—against the edges of machines—and so on.

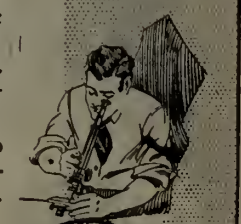
To overcome this, Goodyear Water Hose is built with an extra thick covering of exceptionally tough rubber. A cover which gives greater protection, *longer wear*—lowers costs. And a good inner tube and strong fabric are in keeping with its superior covering.

There is a particular Goodyear hose scientifically designed—as in the case of Goodyear Water Hose—for every Industrial use.

A man trained by Goodyear will be sent to study *your* hose problems—without obligation. Phone, wire, or write the nearest branch.

**The Goodyear Tire & Rubber Co. of Canada, Limited**

*Branches—Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver.*



**GOODYEAR**
MADE IN CANADA
**INDUSTRIAL HOSE**

# Thor

# On The Tough Jobs You Will Find *THOR*

Repairing link cradles with a No. 19 *Thor* Reversible Close Corner Drill. Not necessary to remove the link cradles. Saving in time and labor over 80%.

On the tough complicated jobs, where the workman must have a tool which he can absolutely depend upon, you will find THOR. LEADING RAILROAD SHOPS TODAY ARE USING THOR TOOLS on operations which ordinarily would require a long drawn out process by hand labor.

Grinding super-heater unit connections in a header with *Thor* Piston Air Drill.

Reaming main frame holes with *Thor* Piston Air Drill.

No. 90. *Thor* one-piece pneumatic long stroke hammer driving ¾ in. rivets on steel hopper car.

No. 9 Corner Drill on Locomotive Work in extremely close quarters.

Daily operation in hundreds of railroad shops is proving that: **"If an Air Tool can do it, a THOR will do it quicker, easier and cheaper.**

## INDEPENDENT PNEUMATIC TOOL COMPANY

*Canadian Offices:* **334 ST. JAMES STREET, MONTREAL, QUE.**

*32 Front Street West, Toronto; Galt Building, Winnipeg; 1142 Honer Street, Vancouver*

OFFICES IN U.S.A.:

CHICAGO, NEW YORK, PHILADEI PHIA, PITTSBURGH, BOSTON, CLEVELAND, DETROIT, ST. LOUIS, SAN FRANCISCO, BIRMINGHAM.

# BARBER No. 5

# ROLLER SIDE BEARING

A new principle for self centering the roller in side bearings. The load is distributed directly through the rollers to top and bottom steel wearing plates. No load on housing or trunnions.

Provision made for roller travel sufficient for any normal curves.

Large opening in housing for clearance of dirt and accummulation.

UNITED STATES:

**STANDARD CAR TRUCK COMPANY**

1522 McCormick Building,
Chicago, Illinois.

CANADA:

**CANADIAN APPLIANCE CO., LTD.**

708 New Birks Building,
Montreal, Quebec.

United States Torpedo Boat Destroyer, **"Reid"**
Built in World's Record Time, 45½ working days by the
Bethlehem Shipbuilding Corporation

The shafting for the **"Reid"** and other U. S. Destroyers was completely finished, ready for installation, by

# THE DOMINION STEEL PRODUCTS CO.

**Limited**

**Brantford - Canada**

ROLLING MILL EQUIPMENT

RUBBER WORKING MACHINERY

HERRINGBONE GEAR DRIVES

HEAVY OIL ENGINES MARINE AND STATIONARY TYPE

SHAFTING

LINE, DRIVE

AND

SHIP

**List of purchases made by a Shipbuilding Company**

Airports.
Anchors.
Awnings.
Bilge Pumps.
Binnacles.
Boats.
Boiler Mountings.
Boilers.
Booms, Cargo.
Canvas.
Cargo Winches.
Castings.
Chains.
Clocks.
Cocks and Valves.
Compasses.
Condensers.
Connecting Rods.
Crank Shafts.
Cylinders.
Davits, boat.
Earthenware, Stone.
Electric Bells.
Engines.
Evaporators.
Flags.
Fresh Water Systems.
Furniture.
Galley Fitout.
Glassware.
Grates and Boiler Fittings.
Grease Extractors.
Hatch Tarpaulins.
Hawsers and Tow Lines.
Heaters, Feed Water.
Hoists, Ash.
Hospital Equipment.
Instruments.
Ladders, Iron.
Ladders, Wooden.
Lamps, Kerosene.
Life Belts and Buoys.
Lifeboats.
Lights.
Logs.
Manifolds for Bilges.

CHAPTER 7.

# WHAT SHIPBUILDERS BUY

On behalf of our subscribers in Canada's Shipyards, who have the responsibility of buying the materials that go into the shipbuilding and equipping the ships of which our country is proud, we ask you men who make those materials, that you make an earnest effort to help these busy men to a wise selection.

They will welcome your help, because they must buy so many hundreds of things that no one man, or no group of men, can ever be as well posted on all of them as manufacturers are in each of their own products.

And a very practical way for you to help, is to use our advertising pages, in telling frankly, fairly, and fully the qualities and characteristics of your products.

Read the 188 items given in the adjoining columns. You see, don't you, that this list represents, not 188, but thousands of different things that shipbuilders buy?

Tell them your story, simply, truthfully, taking one item or group at a time; so that the men at the buying end may clip these ads and file them in their buying indexes.

Both you and they—and Canada—will be gainers.

**CANADIAN RAILWAY AND MARINE WORLD**

**Toronto** *Member of* **Canada**

*Audit Bureau of Circulations,*
*Associated Business Papers,*
*Canadian National Newspapers and Periodicals Association,*
*Canadian Press Association.*

**List of purchases made by a Shipbuilding Company**

Masts and Rigging.
Material for Hull.
Nautical Instruments.
Oil Tanks.
Paints.
Pantry Outfit.
Piping.
Plumbing.
Propellers.
Propeller Frames.
Pumps, Air.
Pumps, Ballast Donkey.
Pumps, Circulating.
Pumps, Donkey Feed for Main Boilers.
Pumps, Downtown.
Pumps, General Service.
Pumps, Bilge.
Pumps, Feed.
Reversing Engines.
Rivets.
Shafts, Propeller.
Side Lights.
Skylights.
Slide Valves.
Steering Engines.
Steel Plates.
Sternposts.
Stern Tubes.
Stores, Boatswain's.
Tail Shafts.
Telegraphs.
Thermometers.
Tool Room Equipment.
Tools for Engines and Boilers.
Upholstering.
Valves and Cocks.
Valves, Slide.
Valves, Stop and Throttle.
Ventilators.
Winches.
Windlasses.
Wooden Decks.

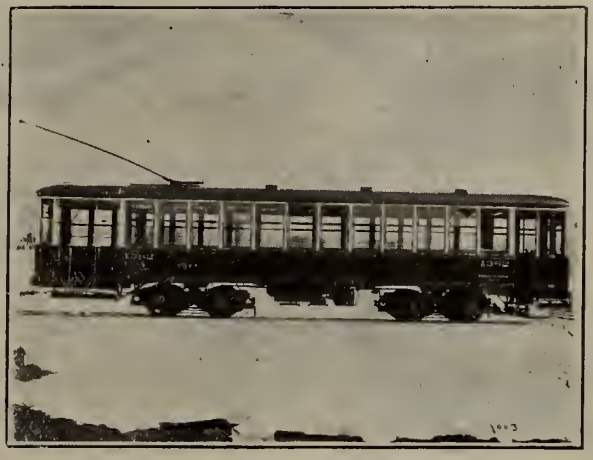
# Ottawa Car Manufacturing Co., Limited

*Designers and Builders of*

Highest Efficiency

Lowest Upkeep Cost

50 Ton 400 H.P. Electric Locomotive.



Electric City and Interurban Passenger Cars, Electric Express Cars and Locomotives, Sprinklers and Work Cars. Car Seats, Car Curtains and a very large variety of brass and bronze car fittings.

Snow Sweepers and Plows—the most perfect

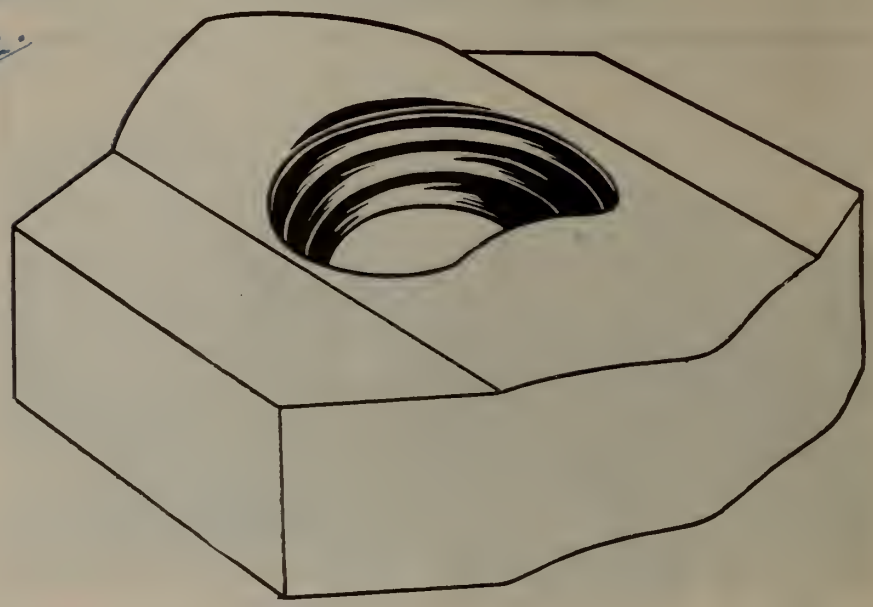
To your own specifications.

Combination Snow Sweeper and Locomotive

**Send them your inquiries,** as they are at your service for specifications, drawings, estimates and prices. Satisfaction assured on all orders, and deliveries made promptly. Always ready for service. Continuous work has proved their worth.

**Corner KENT and SLATER STS., OTTAWA, ONT.**

2 nuts returned July 12.



The man who uses them:-
I like the Grip Nut because it locks on the bolt I don't have to jam it against the bearing surface. When slack shows up the Grip-Nut stays right on the job

**Canada Grip Nut Company, Ltd.**

608 McGill Bldg.
MONTREAL

Plant: St. Johns, Que. Winnipeg

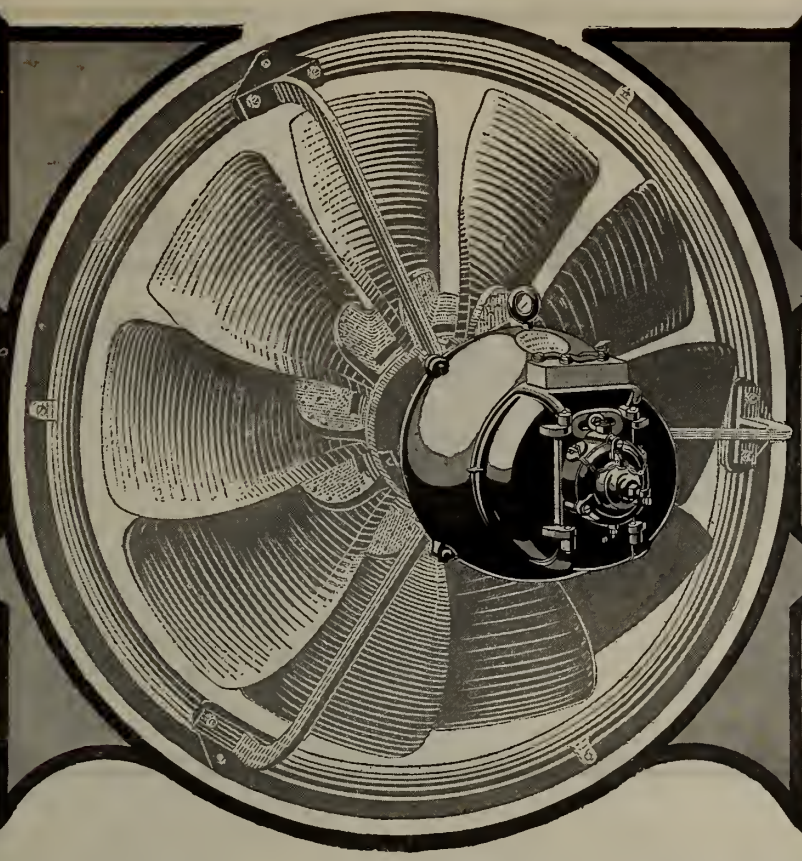
*Hotels Need Them*

*Big Kitchens Should Have Them*

*Theatres and Halls Must Have Them*

*Mills and Factories Can't Do Without Them*

*Hospitals Demand Them*



*In Laboratories They are Necessary*

*Restaurants Swear By Them*

*In Laundries They are Indispensable*

*Big Offices Should be Equipped*

*In Dormitories They are Essential*

# Industrial Fatigue

Elaborate scientific tests have demonstrated that individual efficiency, both mental and physical, is highest and most enduring when the surrounding air is at a temperature of less than 70 deg. F.

The air in great shops and factories, as well as in offices, is often raised above the highest temperature at which the most efficient work can be done.

Nothing will aid ventilation and increase efficiency in poorly ventilated buildings so much as C.G.E. exhaust fans. Why not investigate? A card or phone message to our nearest sales branch is all that is necessary.

**Canadian General Electric Company**
LIMITED

HEAD OFFICE: TORONTO

BRANCH OFFICES: MONTREAL, QUEBEC, HALIFAX, SYDNEY, ST. JOHN, OTTAWA, HAMILTON, LONDON, COBALT, SOUTH PORCUPINE, WINNIPEG, CALGARY, EDMONTON, NELSON, VANCOUVER AND VICTORIA.

Cut returned to C.G.E. Co Aug 6.

# CANADIAN STEEL-TIRE AND WHEEL COMPANY, LIMITED

Locomotive and Car Wheel Tires

Steel Tired Wheels of all kinds

**Works:** Montreal East

**Office:** Transportation Bldg., Montreal

# *The Genie of the Bottle*

Like the Genie from the "Arabian Nights," Prest-O-Lite is a wonderful force confined in a small cylinder.

It is subject to the command of its master—the trained welder and cutter. Under his direction it performs feats of wonder—anywhere, at any time.

In the subway builder's excavation, in the floating dry dock, in fact any place —any time where welding and cutting metals are required, the ready portability of Prest-O-Lite is an asset of genuine worth.

Ask us about the service plan of the Universal Gas with the Universal Service.

**Prest-O-Lite Company of Canada, Limited**

**Dept. C-109, Prest-O-Lite Building,**
**Toronto - Canada**

**Branches: Montreal, Toronto, Winnipeg.**

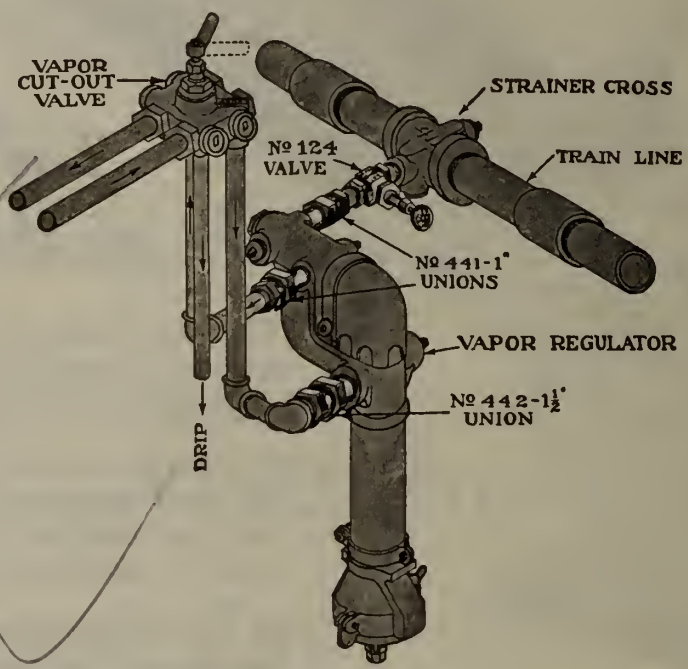
**Plants at Toronto, Ont. St. Boniface, Man.**
**Merritton, Ont. Shawinigan Falls, P.Q.**

# Vapor System

OF

# Passenger Train Car Heating

MADE IN CANADA




## MAINTENANCE COSTS

HEAVY REPAIRS and expensive renewals are eliminated because heating coils in the Vapor System do not freeze and burst.

SEVERAL HUNDRED PASSENGER CARS of the latest design, including sleepers, in operation throughout Canada are equipped with our Vapor System.

NOT A CASE of frozen heating coils during the severest weather.

NOT A CAR removed from service on account of failure of Vapor System.

*Write for particulars and a copy of our No. 22 Catalogue*

## VAPOR CAR HEATING CO.
## OF CANADA, LIMITED

61 DALHOUSIE STREET, MONTREAL, QUE.

# HUNT-SPILLER
## GUN IRON

## The Age of Specialization

Today is the era of specialists — the "jack-of-all-trades" has passed on—to manufacturers as well as individuals. We are specialists in the field of development and manufacture of material for durable, long-wearing locomotive parts.

## Hunt-Spiller Gun Iron for

**Cylinder Bushings**
**Cylinder Packing**
**Pistons**
**Piston Bull Rings**
**Valve Bushings**
**Valve Packing**
**Valve Tee Rings**
**Crosshead Shoes**
**Pedestal Shoes**
**Pedestal Wedges**
**Side Rod Bushings (Switch Engines)**
**Knuckle Pin Bushings**
**Air Pump Bushings**
**Driving Boxes**

means longer service—more revenue from your motive power.

*Made Only by*

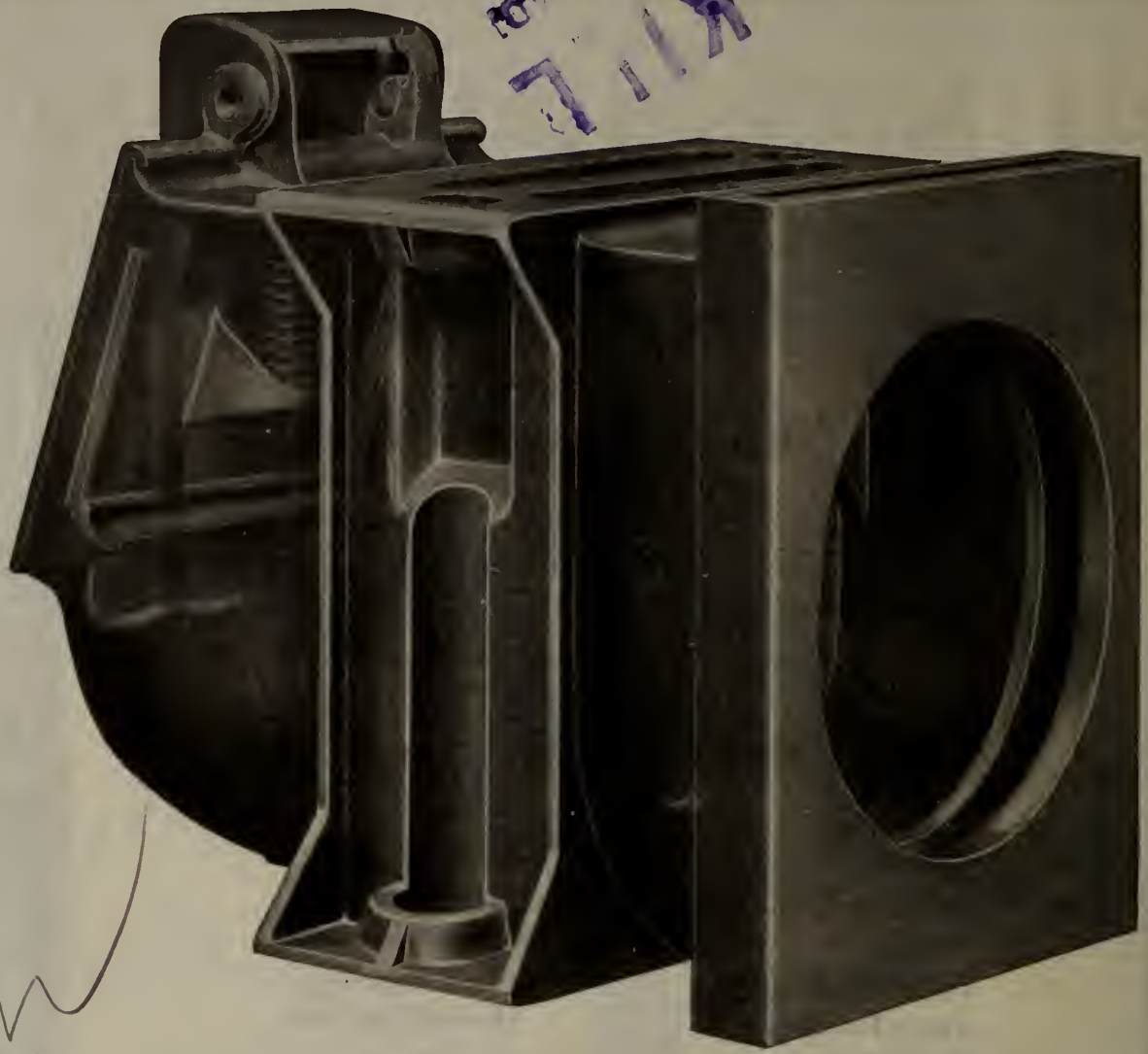
**HUNT-SPILLER MFG. CORPORATION**

W. B. Leach Pres. & Gen. Mgr. J. G. Platt, Vice-Pres. & Sales Mgr.

*Office & Works*

383 Dorchester Ave., SOUTH BOSTON 27, Mass.

Canadian Representative: Canuck Supply Co., 418 St. James St., Montreal, P.Q.



# THE McCORD JOURNAL BOX

IS

Dust Proof—Oil Retaining—Strong and Light
The Pinless Lid Feature Saves Renewals

IT IS A UNIVERSAL STANDARD
BECAUSE THE MANY YEARS OF SERVICE PROVE IT TO BE
PERMANENTLY GOOD

## McCORD & COMPANY

**Montreal** **Brantford**

**The Holden Company, Limited,**
**350-356 St. James Street, Montreal**

**342 Adelaide St. West**
**Toronto, Ont.**

**150 Princess St.**
**Winnipeg, Man.**

**81 Pender St. West**
**Vancouver, B.C.**

# Preventers of Heat Waste

That's what Nonpareil Insulating Brick are. Built into the walls, arches, bottoms and doors of furnaces, boiler settings, ovens, etc., one 4½-inch course will save 60% or more of the large quantity of heat ordinarily lost through the brick work. And the saving in fuel which results will pay for the brick in a year or less.

Let the hottest flame you can find play against the face of a Nonpareil Insulating Brick. Long after the surface has become white hot, you will be able to hold your hand against the opposite side without discomfort. Now try the same experiment with a fire brick or common red brick, and note the difference.

## Nonpareil Insulating Brick

**For Furnaces, Boiler Settings, Ovens, Etc.**

Nonpareil Insulating Brick are composed principally of diatomaceous earth, a peculiar cellular material of high natural insulating value. Each of its minute cells contains "dead" air. The ground earth is mixed with granulated cork, molded into brick form, and then fired. The cork is thus burned out, thereby adding to the number of "dead" air spaces, and materially increasing the heat insulating efficiency of the finished Nonpareil Brick.

These Bricks are especially suitable for the insulation of high temperature equipment. They have an ultimate crushing strength of 10 ton per square foot. Their finished brick form makes them easy to handle and install. Furthermore, Nonpareil Brick are so light, 1.6 pounds each for the 9 x 4½ x 2½ inch size, that when substituted for an equal amount of common brick, the total weight of the insulated structure is reduced materially.

It will interest you to know about the savings that Nonpareil Insulating Brick would effect in your own plant. Copies of the booklets, "Good Furnaces Made Better," and "Saving Fuel," together with a large sample will be sent, free of charge, on request.

Nonpareil High Pressure Covering not affected by water.

## Nonpareil High Pressure Covering

**For high pressure and superheated steam lines, underground heating systems, boilers, breechings and heated surfaces.**

In these days of high fuel and labor prices, the question is not, "Shall I insulate my steam line?" but rather, "What covering will save the most coal?" The answer, as careful investigation will show, is Nonpareil High Pressure Covering.

This—*"The Steam Covering That's Different"*—is composed principally of diatomaceous earth (kieselguhr)—a light, cellular substance that is practically pure silica and an excellent nonconductor of heat. The covering is not only an efficient heat insulator, but will withstand relatively high temperatures without calcining or disintegrating. Furthermore, it is not affected by water and will stand repeated wetting and drying without injury. It is furnished in sectional, block and plastic cement form, making it easy to apply. The bound book, *"Nonpareil High Pressure Covering,"* is worth asking for. It shows how you can determine your radiation losses, also overcome same.

## Armstrong Cork & Insulation Co., Limited

**901 McGill Bldg., MONTREAL** **9 Church Street, TORONTO**

Also manufacturers of Nonpareil Corkboard for refrigerator cars and rooms; Nonpareil Cork Covering for drinking water systems and cold pipes; Linotile and Nonpareil Cork Tile for flooring passenger cars, offices, etc.

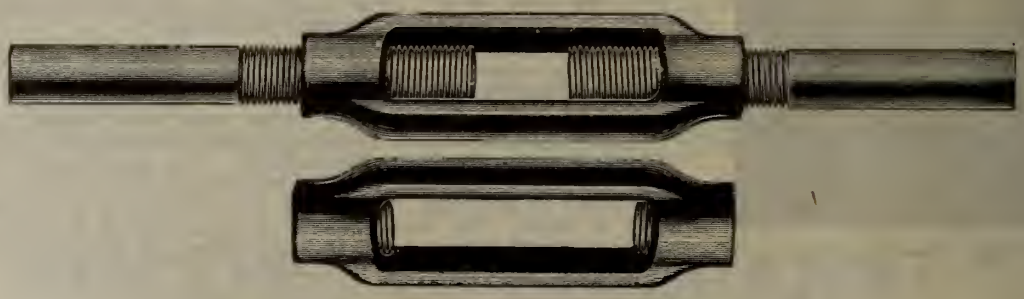
CANADA
FOUNDRIES & FORGINGS
LIMITED

# Drop Forged Steel

**M.C.B. Standard Wedges**

**3 SIZES**

| | | |
|---|---|---|
| 4½ | x | 8 |
| 5 | x | 9 |
| 5½ | x | 10 |



**18 Sizes With or Without Stubs**

**Produced at WELLAND, Canada**

# FARLOW

The Perfect Harness

## DRAFT ATTACHMENT

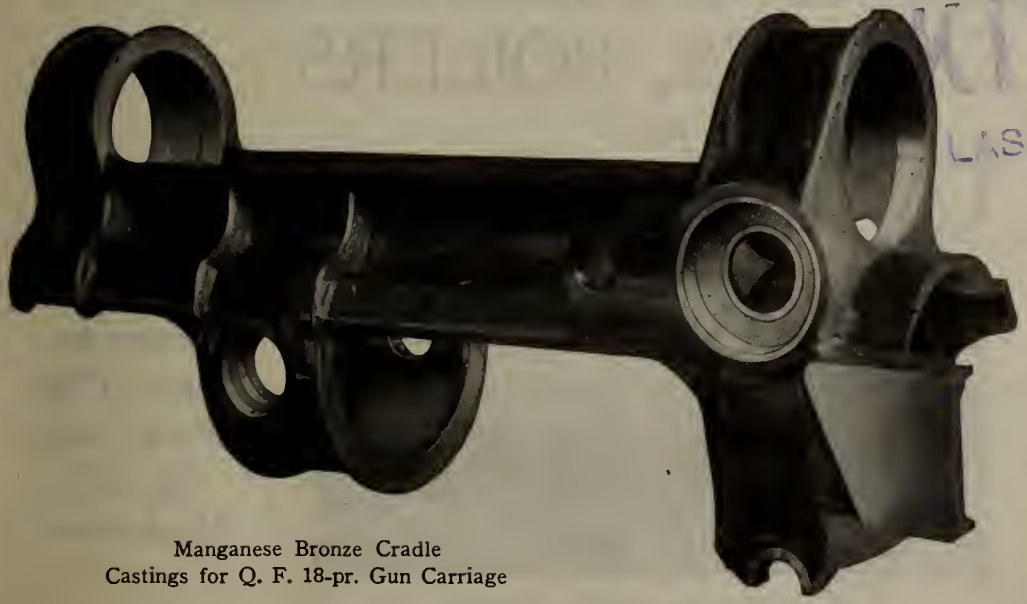
Furnishes the strongest connection between the draft gear and car underframe.

Service buffing and pulling shocks are transmitted to the car frame at a number of points, preventing distortion of sills, breakage of friction barrels or springs, and consequent necessity for repairs.

## The T. H. Symington Company

**New York** **Works at Rochester** **Chicago**

# FOR SHIPBUILDERS



Manganese Bronze Cradle
Castings for Q. F. 18-pr. Gun Carriage

**Castings**
of Every
Description
in
**Brass**
and
**Bronze**
Rough or
Machined
Complete
to Specification

## Ottawa Car Manufacturing Co., Ltd.

*W. M. ARNOLD, General Manager*

**OTTAWA - - ONTARIO**

# Norton Jacks

For all Classes of Service

## 10 to 100 Tons Capacity

In Stock for Immediate Shipment.

*Send for Illustrated Catalogue No. 30*

## A. O. Norton, Limited

**Coaticook, Prov. Que., Canada**

Stock Carried by Canadian Agents: **MUSSENS LIMITED**

Montreal Toronto Winnipeg Cobalt Calgary Vancouver

# THE JOHN INGLIS COMPANY, LIMITED

**ENGINEERS AND BOILER MAKERS**

## ENGINES, BOILERS AND TANKS of all kinds

*Write us for prices and specifications.*

Plant of the John Inglis Co. Limited

Penstocks, Heavy Plate Work, and Special Machinery.

**14 STRACHAN AVE., TORONTO, CANADA**

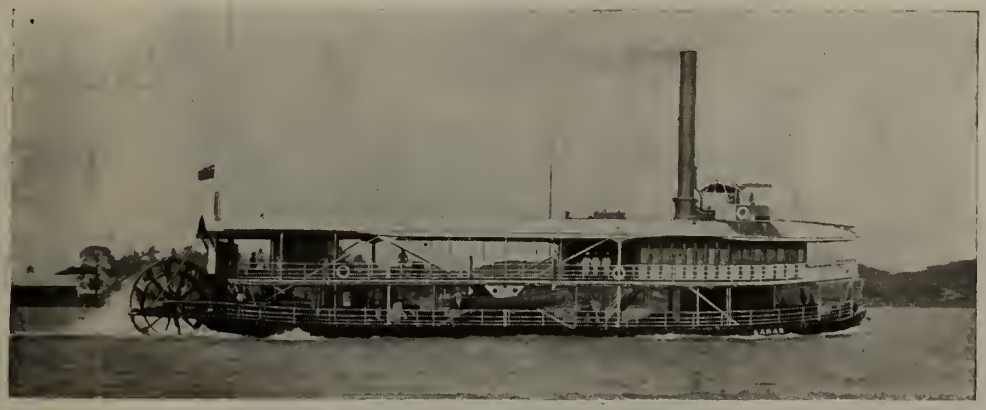
Representatives in Eastern Canada,—JAS. W. PYKE & CO., Ltd., 232 St. James Street, MONTREAL.
Ottawa Representative,—J. W. ANDERSON, 7 Bank Street Chambers.

# YARROWS LTD.

**VICTORIA, B.C., CANADA**

Associated with YARROW & CO. LTD., Glasgow

SHIPBUILDERS SHIP REPAIRERS ENGINEERS



Builders of fast shallow draft vessels propelled by sternwheel or Yarrow Patent system of propellers working in tunnels. Vessels shipped in packing cases ready for re-erection.

ADDRESS FOR LETTERS
P.O. BOX, No. 1595,

| Marine Railway, 315 ft. long, 3000 tons D.W. Capacity. | Esquimalt Dry Dock, 480 ft. x 65 ft. |
|---|---|

TELEGRAMS AND CABLES
"YARROWS, VICTORIA"

# F. E. SMITH, LIMITED

IRON - STEEL - REFRACTORIES

MILL - FOUNDRY - SHIPBUILDING - RAILWAY SUPPLIES

PNEUMATIC TOOLS

Buyers and sellers of steel and iron scrap and second hand equipment of all kinds. Low phos. scrap our specialty.

TRANSPORTATION BLDG.,

MONTREAL

# Port Arthur Shipbuilding Co., Limited

**Port Arthur, Canada**

Canadian Adventurer, launched at Port Arthur, by H.R.H. Prince of Wales, Sept. 8, 1919.

*Designers and Builders of*

Steel Ships

Boilers

Engines

Etc.

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

# For Railroad and Steamship Upholstery

**The answer to the question, "What fabric is universally used for upholstery?"**

CHASE

GOAT BRAND

TRADE MARK

MADE BY SANFORD MILLS

MOHAIR PLUSH

**Mohair is the logical choice of all upholstery fabrics**

Why? **First—Durability. Second—Fast color. Third—Rich appearance. Fourth—Sanitary.**

How long does it last? **According to quality, eight to twenty-five years.**

What evidence that it is sanitary? **Careful scientific tests through many months by some of America's leading railroads, hotels and homes. Particulars gladly furnished on request.**

What is Mohair? **The lustrous fleece of the Angora goat.**

How strong is Mohair compared with wool? **According to Government tests more than two and one-half times.**

**For more than thirty years CHASE Goat Brand Plush has been the standard with America's largest railroads and steamship lines.**

**Recently there was exhibited a seat covering in excellent condition after a constant service of twenty-four years. It was upholstered with CHASE Goat Brand Plush.**

**L. C. CHASE & CO., Boston, New York, Detroit, Chicago, San Francisco**

***Leaders in Manufacturing since 1847***

"Where there's a WILT - there's the Way"

WILT

HIGH SPEED AND CARBON
TWIST DRILLS
REAMERS AND MILLING CUTTERS

*Are You Getting the Production?*

IF you are not securing the maximum results in the use of the Drills, Reamers and Milling Cutters which you are now using, ask for the services of our sales engineer, who will demonstrate the capabilities of Wilt Tools.

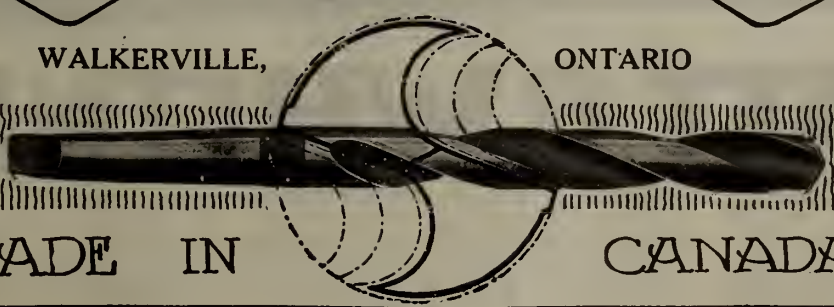
Many of Canada's largest manufacturers have seen their difficulties reduced to the minimum when they became constant users of WILT products.

WILT tools possess the quality that permits of increased speeds and feeds and guarantees the longest service. They are made in Canada by Canadian workmen and represent tool quality equal to the world's highest standard.

WILT TWIST DRILL CO.
OF CANADA, LIMITED

Trade WILT Mark Trade WILT Mark

WALKERVILLE, ONTARIO



MADE IN CANADA

# You Need a Good Die Stock Set

if you need one at all.

Because a **GOOD** Die Stock Set embodies:

1. Accuracy in its product.
2. Adjustment for wear.
3. Free cutting qualities.
4. Provision for sharpening.
5. Ample adjustment for oversize or undersize.

**P. & W.** Die Stock Dies **ARE GOOD DIES.**

**BETTER** than most because of the interchangeable feature in their chasers. A broken chaser in a P. & W. Die doesn't mean a new set of chasers. You can get a new chaser to replace a breakage and the new one "fits in" perfectly in your old set. That's the 6th point, **"ECONOMY IN OPERATION."**

## PRATT & WHITNEY COMPANY
### OF CANADA, LIMITED

Works: Dundas, Ontario

MONTREAL 723 Drummond Bldg.
TORONTO 1002 C.P.R. Bldg.
WINNIPEG 1205 McArthur Bldg.
VANCOUVER B.C. Equipment Co.
WINDSOR Davis Building
HALIFAX Roy Building

# PRATT & WHITNEY.

# Canadian Railway and Marine World

July, 1920

## The June Mechanical Conventions at Atlantic City.

The two great annual railway mechanical conventions of the American Railway Master Mechanics' Association and the Master Car Builders' Association, held principally at Atlantic City, N.J., for many years, were suspended after 1916, in consequence of the United States having entered the war, but meetings of the executive committees were held in Chicago in 1917 and 1918, at which reports of various committees were presented.

In 1919, the Director General of the U.S. Railroads decided to provide, during the period of federal control, a responsible channel through which he might obtain recommendations for the advancement of railway practice. The American Railway Association revised its organization, changed its name to the American Railroad Association, and enlarged its scope by covering the former activities of a number of other railway associations, etc., including among others, the American Railway Master Mechanics' Association, and the Master Car Builders' Association. The American Railroad Association was divided into five sections, viz.: operating, engineering, mechanical, traffic and transportation, respectively. The mechanical section took over the former activities of the American Railway Master Mechanics' Association, and the Master Car Builders' Association, the committee consisting of three representatives of the U.S. Railroad Administration, two representatives of each of the operating regions into which the U.S. was divided and two representatives of Canadian railways. Under the mechanical section's management a convention was held at Atlantic City in June, 1919.

The re-organized American Railroad Association has been continued as outlined above and the mechanical section held its annual convention at Atlantic City this year, June 9-16, the chairman of the general committee being W. J. Tollerton, General Mechanical Superintendent, Chicago, Rock Island & Pacific Rd., the vice chairman being J. Coleman, Assistant to General Superintendent Motive Power and Car Departments, G. T.R., Montreal. W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., Montreal, was also a member of the committee. Locomotive matters were dealt with on June 9-11, the election of officers was held on June 14, and car matters were dealt with on June 14 to 16. The most important features of the convention were, as usual, reports of the standing and special committees, and individual papers presented. The principal ones are given on this and following pages, either in full or in abstract.

## Scheduling and Routing Systems for Locomotive Repair Shops.

The committee, of which Henry Gardner, Supervisor of Apprentices and Shop Schedule Systems, Baltimore & Ohio Rd., was chairman, reported as follows:—Scheduling and routing in railway shops is not new. The first schedules recorded were used in the Chicago & Northwestern shops in 1904. These consisted simply of working sheets, and assigned dates made out and followed up by the shop supervision. Since that time more than 15 railways have adopted some form of schedule system for repairing locomotives, all of which are more or less alike in basic principles. Briefly, the locomotive is brought to the shop on a predetermined date or order, tank disconnected and engine forwarded to the stripping pit. Stripping is handled by a special gang in charge of a leader, and all parts are delivered to each department of the shop. Predetermined dates are then assigned for completing all parts in time to assemble the engine in best practical and logical sequence. These dates are obtained from master schedules which are compiled for each class of repair and for varying numbers of days required to complete the engine. All delays of material or operations are checked daily, and foremen are notified of the delays in their department. No definite time is given in which operations shall be performed and it is only necessary that the work shall be finished on a certain day or date. The result of scheduling the complete capacity of the shop will automatically develop for each operation a stated number of hours which will very closely approximate the minimum number of hours in which that operation can be performed.

The following items cover the necessary steps to be taken for installing an up-to-date and adequate scheduling and routing system as now in operation on some railways: 1—Supervisor of shop schedules and assistant. 2—Schedule office for supervisor. 3—Schedule and planning boards. 4—Shop or job blackboards. 5—Printed forms, master sheets, etc. 6—Calendar slide rules. This list may be modified for smaller shops, but as the general methods and principles are the same, the above installation will be described. It is the committee's opinion that it is not advisable to introduce this shop system where less than 10 locomotives a month are given classified repairs. It is also found inadvisable to employ these methods in locomotive houses and shops making heavy running repairs exclusively. Details covering the above listed subject are given in order below:

1. Supervisor of shop schedules should be a man with practical experience, capable of handling men, and with sufficient technical education to make clear reports and records; preferably a man who has served an apprenticeship and is familiar with all trades. He should report to the superintendent or assistant superintendent of shops. At large shops an assistant may be required.

2. The schedule office should be located conveniently with respect to the machine and erecting shops, preferably in the general foreman's office, or leading from it. A room 10 x 12 ft. will be sufficient, but should be larger if possible. It is important to have this office so located that the supervision can frequently consult with the schedule supervisor and have ready access to and examine the records on the schedule boards.

3. Schedule boards are made to suit local conditions in shops and should be about 36 x 58 in. in size, or smaller. Two boards are necessary, one for current month and one for following months, continuing in succession from month to month. The planning board is used for assigning engines to the shop, with reference to adjusting the class of work to be done to the existing organization, and particularly to avoid overloading any department. This board simplifies the work of the schedule supervisor.

4. Small blackboards are used for conveying dates work is due finished, directly to the man on the job. These blackboard may be employed to the extent of 15 or 20, as may be found desirable. Foremen of gangs, or departments, are expected to keep up these blackboards, crossing out engines and dates when work is completed and delivered.

5. About 20 forms are used for operating this system to best advantage. These forms cover constant or master schedules, delay sheets, check sheets and shop sheets used for conveying dates directly to the department interested. All forms, excepting master schedules, should be printed.

6. The calendar slide rule is indispensable for transferring the constant intervals of time on the master schedules into actual dates on the shop sheets. By the use of this simple device a large number of dates can be assigned quickly and one setting of the rule is sufficient for one schedule on an engine. Items 3, 4, 5 and 6 are covered by figs. 1 to 9 appended to this report.

The above discussion contemplates only the handling of the locomotive and its parts after arriving at the shop and is not directly concerned with the assignment of engines to the shop and their selection for repairs. But this feature is important and has a decided bearing upon the success of the system. Overloading departments with too much boiler work, or too many broken cylinders or frames, will result in delays, and prevent schedules based upon evenly apportioned work from operating effectively. The shop superintendent should have absolute control over engines to be repaired, as he is in best position to adjust the incoming work to his organization and with relation to the work being performed in the shop.

It is not perhaps pertinent to this discussion to treat at length the subject of proper inspection of incoming engines, although this matter has considerable bearing upon successful operation. One

railway has the matter of complete and careful inspection and examination of incoming engines developed to a considerable extent. A chief inspector is assigned, with one or more assistants, to go over the engine with a surface examination, before stripping and during dismantling. These men select all of the parts to be removed and make out regular inspection forms (see fig. 10), giving sizes of all fits, clearances and tolerances for renewals and repairs of all parts requiring same which may develop during the stripping operation. They use micrometer calipers, giving all dimensions in decimal parts of an inch reading to thousandths, thereby ensuring correct and accurate fitting and alignment. These practices result in less movement of parts from one machine to another for fitting, also considerably less movement of men or foremen from one shop to another and discussion between them as to methods of making the repairs in question. Less spoiled work, standardization of parts and a prolonged life of engines will also develop.

The practical operation of this scheduling and routing system may be described as follows: An engine awaiting shop is thoroughly examined by boiler and ma-

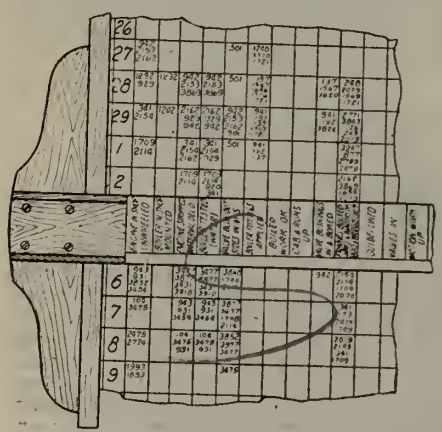


Fig. 1. Detail corner of Schedule Board.

chinery inspectors, who make report as to condition. One copy of this report goes to supervisor of shop schedules, enabling him to define the classification of repairs needed, and assign the proper schedule and number of working days required for completing repairs. The engine is next forwarded to the stripping pit and an itemized list of repairs needed is then forwarded by pit inspectors to supervisor of shop schedules, who is then in a position to assign exact dates and issue sheets to all departments concerned. These dates are posted by supervisor on the schedule boards. At least once a day the supervisor and his assistant visit each foreman, with the check sheets, and examine the work on the engines under repair in the shop on that date. Returning to the schedule office a daily sheet is made out and issued to the supervision, calling their attention to the material and operations delayed, the number of days delayed in the schedule and the cause. These delays are then posted in red ink on the schedule boards, where foremen and workmen can see quickly how their department stands, and determine the status of their delays for the month. An excessive number of red marks in any one vertical column on the schedule board indicates forcibly that this job or department, represented by that particular vertical column, is probably the cause for delaying the engine. The supervisor of schedules has other duties, such as weekly output sheets, re-

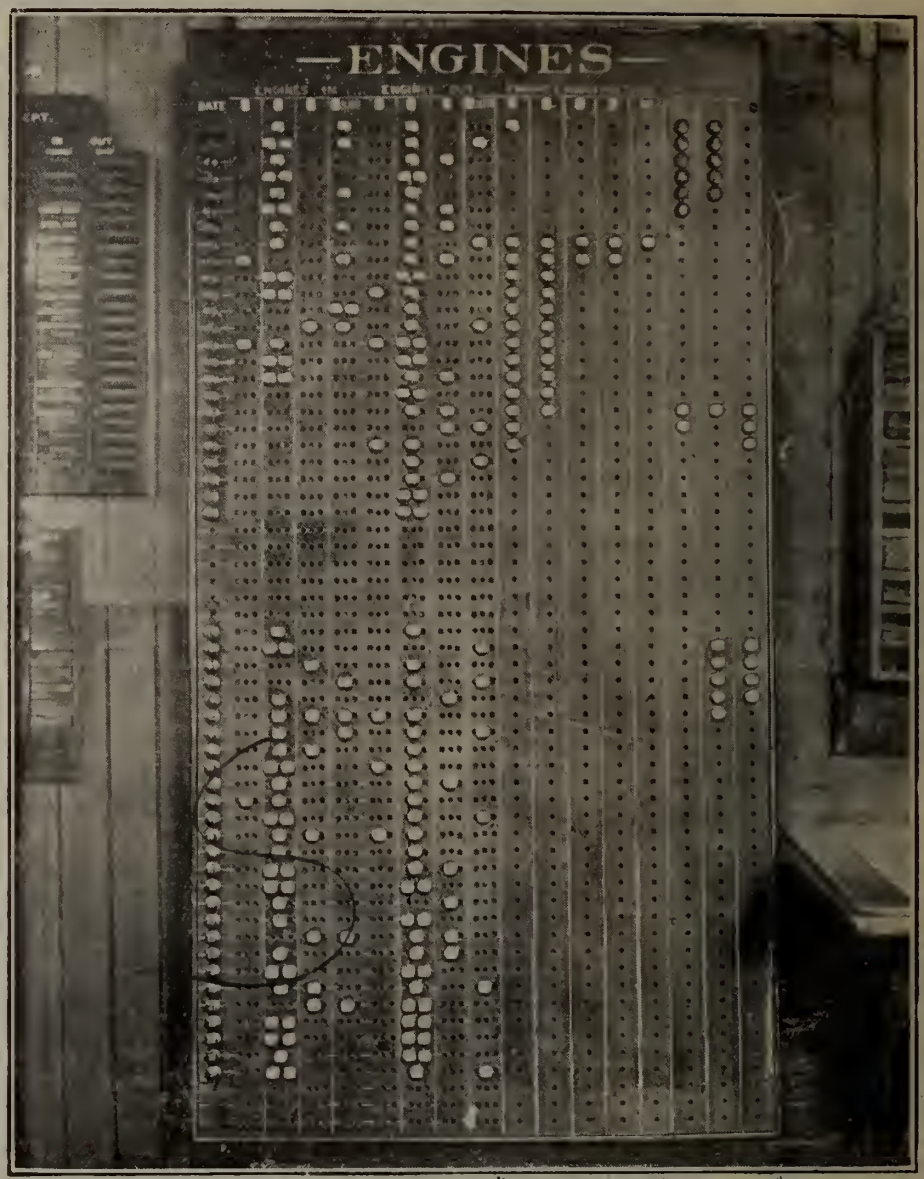



Fig. 2. Planning Board.

Fig. 3. Shop Blackboard.

schedules, statements for higher officials, and other reports and charts as requested. Comparative records are valuable for stimulating interest in this work and keeping departments alive to the fact that they are falling behind and causing delay to the work in entire shop.

The benefits derived from the use of these scheduling and routing methods are considerable. Schedule boards indicate infallibly where delays periodically, or persistently, occur and such departments may be built up or strengthened. Under the piecework plan this system has resulted in men making more money, on account of receiving material more promptly. Under the day work plan the system acts as a stimulant, and to some extent takes the place of interest in the work automatically removed through abolition of piecework methods. Friction between departments is almost entirely eliminated. It is not possible to unload on one department causes for delay which belong to another.

This system to some extent establishes tasks or jobs. Every conscientious foreman or workman likes to have certain work to perform in a stated time, and feels confident that this is exactly what is wanted. Each schedule date delivered to the foreman or workman becomes a written order to that man to deliver the work on that date. Unnecessary driving will be brought to a minimum. Dates are assigned, and if the work is done on these dates no criticism or censure is necessary. The constant reappearance of the daily delay report stimulates foremen and workman to better purpose than criticism.

A visit to shops where this system is in operation resulted in unanimous favorable comment from superintendents and foremen due to its operation. The general foreman's duties are greatly simplified. Heretofore he might go from one department to another trying to fix the responsibility for delays. No system can take the place of foremen, but this system can eliminate a large amount of travelling, by supervision from one department to another.

No definite figures are possible giving the saving in money resulting from the use of these methods. We may, however, consider one saving from the standpoint of the potential value of the power. Assuming that the service of a locomotive is worth, on an average, $50 a day, and if one day is saved in the time that each engine is held on the pit the money saving in a shop having 25 pits and delivering 2 engines per pit, per month, would be $2,500 a month, or $30,000 a year. This statement is based upon the assumption that quicker deliveries of power are

PITTSBURGH & LAKE ERIE RAILROAD

ERECTING SHOP

.....Foreman

Class Rep's.....
Engine No.....
Date In.....
Date Out.....

| CLASS OF WORK. | Wanted Date | Date Finished |
|---|---|---|
| Engine in Shop Unwheeled | | |
| Engine Stripped Material Delivered | | |
| Boiler off or Stripped | | |
| Superheater Units Out | | |
| Flues O. K. | | |
| Smoke Box Work | | |
| Stay Bolts | | |
| Flue Sheet | | |
| Side Sheet and Crown Sheet | | |
| Ash Pan and Grates | | |
| Boiler Tested | | |
| Saddle Bolts & Boiler Waist Sheet | | |
| Frame Braces and Pads O. K. | | |
| Frame and Cylinder Bolts | | |
| Cylinders Bushed or Bored | | |
| Valve Seats Planed or Bushing Bored | | |
| Shoes & Wedges and Binders O.K. | | |
| Spring Rigging Up | | |
| Guides Lined | | |
| Motion Work Up | | |
| Engine Truck O. K. | | |
| Boiler Fittings, Air Pump & Parts | | |
| Steam Pipes and Throttle Valve In | | |
| Boiler Lagged | | |
| Engine Wheeled | | |
| Boiler Jacket O. K. | | |
| Cab and Running Boards O. K. | | |
| Superheater O. K. | | |
| Main Rods Up | | |
| Velvet Set | | |
| Boiler Trimmings O. K. | | |
| Pipe Work O. K. | | |
| Brake Rigging O. K. | | |
| Side Rods O. K. | | |
| Eng. Despatched | | |

| MATERIAL | Wanted from Machine Shop |
|---|---|
| Frames or Tongues | |
| Rockers and Boxes | |
| Cylinder Bushings | |
| Valve Bushings | |
| Braces, Pads and Waist Sheets | |
| Engine Truck Parts | |
| Engine Truck Wheels | |
| Spring Rigging Parts | |
| Boiler Fittings, Air Pump & Parts | |
| Motion Work | |
| Cross Heads | |
| Main and Side Rods | |
| Piston and Valve Packing | |
| Throttle Valve and Parts | |
| Driving and Trailer Boxes | |
| Pistons and Rods | |
| Valves and Yokes | |
| Steam Pipes and Dry Pipes | |
| Driving and Trailer Wheels | |
| Eccentrics and Straps | |
| Engine Brake Rigging Parts | |
| Steam Chest and Cylinder Heads | |
| Frame and Cylinder Bolts | |
| Guides and Knees | |
| Shoes and Wedges and Binders | |
| | **Wanted from Smith Shop** |
| Frames and Tongues | |
| Braces or Pads | |
| Rocker Arms or Guides | |
| Spring Rigging Parts | |
| Engine Brake Rigging Parts | |
| Engine Truck Parts | |
| Binders and Yokes | |
| Tender Parts | |

..... General Foreman.

Fig. 4. Erecting Shop Operation Sheet.

SCHEDULE CONSTANTS—LOCOMOTIVE SHOPS.

ERECTING SHOP — Foreman

| Operations | Date Wanted | Material | Wanted in Machine Shop | Wanted from Machine Shop |
|---|---|---|---|---|
| Engine in shop unwheeled | 1 | Cylinder bushings | | 11 |
| Engine stripped, material delivered | 2 | Engine truck wheels | 2 | 11 |
| Flues out | 3 | Spring rigging | 2 | 11 |
| Stayboits and radials out | 6 | Boiler fittings | 2 | 12 |
| Frames and Cylinders bolted | 11 | Cross-heads, guides and blocks | 2 | 13 |
| Cylinders bushed or bored | 12 | Steam pipes | 2 | 13 |
| Shoes and wedges laid off | 12 | Motion work, eccentric and straps | 2 | 13 |
| Spring rigging up | 13 | Driving and trailer wheels and boxes | 2 | 13 |
| Flues set | 13 | Shoes and wedges | 12 | 13 |
| Guides lined | 13 | Engine brake rigging | 2 | 15 |
| Stayboits and radials in. | 13 | Valves and yokes | 2 | 15 |
| Engine truck O. K. | 13 | Pistons and rods | 2 | 16 |
| Boiler fittings O. K. | 14 | Main and side rods | 1 | 16 |
| Boiler tested | 14 | Material | Wanted in A. B. Shop | Wanted from A. B. Shop |
| Engine wheeled | 14 | | | |
| Steam pipes in. | 15 | Engine brake equipment | 2 | 14 |
| Cab and runs O. K. | 16 | | | |
| Boiler lagged | 15 | | | |
| Boiler jacket O. K. | 16 | | | |
| Motion work up | 16 | | | |
| Valves set | 16 | | | |
| Main and side rods up | 17 | | | |
| Ash pan and grates O. K. | 17 | | | |
| Smoke box work and superheater O. K. | 17 | | | |
| Engine brake rigging O. K. | 17 | | | |
| Pipe work O. K. | 16 | | | |
| Engine dispatched | 16 | | | |

MACHINE SHOP — Foreman

| Class of Work | Wanted from Erecting Shop | Wanted from Smith Shop | Wanted in Erecting Shop |
|---|---|---|---|
| Cylinder bushings | | | 11 |
| Engine truck wheels | 2 | | 11 |
| Boiler fittings | 2 | | 12 |
| Steam pipes | 2 | | 13 |
| Driving and trailer wheels and boxes | 2 | | 13 |
| Shoes and wedges | 12 | | 13 |
| Valves and yokes | 2 | | 15 |
| Pistons and rods | 2 | | 15 |
| Spring rigging | 2 | 9 | 11 |
| Cross-heads, guides and blocks | 2 | 9 | 12 |
| Motion work, eccentric and straps | 2 | 10 | 13 |
| Engine brake rigging | 2 | 11 | 15 |
| Main and side rods | 1 | 12 | 16 |

BOILER SHOP — Foreman

| Class of Work | Wanted O. K. in Erecting Shop | Wanted in Smith Shop |
|---|---|---|
| Flues | 11 | 3 |
| Flue lengths | | 5 |
| Flues, set | 13 | |
| Patches or fire box sheets | 12 | |
| Stayboits and radials out | 6 | |
| Stayboits and radials in | 13 | |
| Boiler tested | 14 | |
| Smoke box work and superheater | 17 | |
| Ash pan and grates | 17 | |

PIPE, TIN AND AIR BRAKE SHOP — Foreman

| Class of Work | Wanted from Erecting Shop | Wanted in Erecting Shop |
|---|---|---|
| Engine brake equipment | 2 | 14 |
| Jacket | 2 | 16 |
| Pipe work | 2 | 18 |

CAB AND TENDER SHOP

| Class of Work | Wanted in Tender Shop | Wanted O. K. |
|---|---|---|
| Tender | 6 | 14 |
| Cab | | 15 |
| Lagging | | 15 |

SMITH SHOP — Foreman

| Class of Work | Wanted from Erecting Shop | Wanted in Machine Shop | Wanted in Erecting Shop |
|---|---|---|---|
| Binders | 2 | | 9 |
| Flue lengths | 8 | | |
| Flues | 3 | | 11 |
| Spring rigging | 2 | 8 | 11 |
| Guides and blocks | 2 | 9 | 12 |
| Motion work | 2 | 10 | 13 |
| Engine brake rigging | 2 | 11 | 15 |
| Main and side rods | 1 | 12 | 16 |

PAINT SHOP — Foreman

| Class of Work | Wanted O. K. for Paint | Wanted Painted |
|---|---|---|
| Cab | 15 | 17 |
| Tender | 14 | 17 |
| Engine | 18 | 18 |

Days allowed 18
Class repairs 3

H. C.
Total 130.—R. W.

Fig. 5. Constant Sheet, or Master Schedule.

THE PITTSBURGH & LAKE ERIE RAILROAD COMPANY

SCHEDULE OFFICE

REPORT OF ENGINES DESPATCHED McKEES ROCKS SHOP

MONTH OF.....1917 TOTAL.....

| Engine Number | Class Repairs | Date In | Sched. Date Desp. | Actual Date Desp. | Days Allow. | Actual Days | Days Late | Days Early | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Fig. 6. Report of Engines Dispatched.

directly attributable to the methods described in this report. Other savings, including labor, material, overhead, etc., will always result from more systematic operating methods.

Your committee is of the opinion that the system as outlined in this report can be used in passanger and freight car repair shops and recommends its wider installation in locomotive repair shops.

OUTPUT OF _____ SHOPS

MONTH OF _____ 191__

Schedule Office

CLASSIFIED REPAIRS

| NUMBER OF ENGINES | | TOTAL NUMBER OF ENGINES | | | TOTAL DAYS IN SHOP | | AVERAGE DAYS IN SHOP | | AVERAGE DAYS PER ENGINE | |
|---|---|---|---|---|---|---|---|---|---|---|
| Scheduled | Carried Over | Early | On Time | Late | Schedule | Actual | Schedule | Actual | Early | Late |
| | | | | | | | | | | |

Total engines despatched _____
Percent of total engines scheduled _____
Number of engines rescheduled _____
Percent of total engines on time and early _____
Average number of delays per day _____

HEAVY RUNNING REPAIRS

| NUMBER OF ENGINES | | TOTAL NUMBER OF ENGINES | | | TOTAL DAYS IN SHOP | | AVERAGE DAYS IN SHOP | | AVERAGE DAYS PER ENGINE | |
|---|---|---|---|---|---|---|---|---|---|---|
| Scheduled | Carried Over | Early | On Time | Late | Schedule | Actual | Schedule | Actual | Early | Late |
| | | | | | | | | | | |

Total engines despatched _____
Percent of total engines scheduled _____
Number of engines rescheduled _____
Percent of total engines on time and early _____
Average number of delays per day _____

OUTPUT

Class 1 repairs _____
" 2 " _____
" 3 " _____
" 4 " _____
" 5 " _____
Total _____
Heavy running repairs _____

COPY TO

_____
_____
_____
_____

S. S. _____
M. M.

Fig. 7. Monthly Report.

BALTIMORE AND OHIO RAILROAD

M. P. DEPARTMENT—SCHEDULE OFFICE

_____ S. S.

DAILY DELAY SHEET _____ 191__

_____ G. F.

| MACHINE SHOP | Engine Number | Days Late | Cause of Delay |
|---|---|---|---|
| Frames or Tongues | | | |
| Rockers and Boxes | | | |
| Cylinder and Valve Bushings | | | |
| Braces, Pads and Waist Sheets | | | |
| Engine Truck Wheels | | | |
| Steam Pipes | | | |
| Spring Rigging | | | |
| Boiler Fittings | | | |
| Driver Brake Fulcrums | | | |
| Motion Work | | | |
| Crossheads, Guides and Blocks | | | |
| Driver and Trailer Wheels and Boxes | | | |
| Shoes and Wedges | | | |
| Pistons and Rods | | | |
| Valves and Yokes | | | |
| Main and Side Rods | | | |
| Engine Brake Rigging | | | |
| Eccentrics and Straps | | | |
| BOILER SHOP | | | |
| Patches or Firebox Sheets | | | |

| SMITH SHOP | Engine Number | Days Late | Cause of Delay |
|---|---|---|---|
| Frames or Tongues | | | |
| Braces, Pads and Waist Sheets | | | |
| Binders | | | |
| Flue Lengths | | | |
| Flues | | | |
| Rockers and Boxes | | | |
| Spring Rigging | | | |
| Tender Parts | | | |
| Guides and Blocks | | | |
| Motion Work | | | |
| Engine Truck Parts | | | |
| Engine Brake Rigging | | | |
| Main and Side Rods | | | |
| TENDER SHOP | | | |
| Tender O. K. for Paint | | | |
| Cab O. K. for Paint | | | |
| PAINT SHOP | | | |
| Cab | | | |
| Tender | | | |

SIGNED _____

Fig. 8. Daily Delay and Check Sheet.

Valve Motion—All Classes.

ALL CASE HARDENED PARTS, new or repaired, to be tested with file on wearing surface, and if soft must be recase hardened.

ALL DIMENSIONS shown on form to be filled in at time of prelimintary inspection or in case of reamed taper holes, after reaming is complete. Give the finished size required after allowing for force or running fit. If parts will not finish to size given, notify inspector who will correct shop and office copy to size finished.

Running Fit.

VALVE JAW PINS.—Straight bearing surface. Final grind 0.004 in. to 0.0006 in. smaller than companion bushing. Tapers grind to dimensions given.

LINKS AND BLOCKS.—After grinding, space between link and block 0.004 in. to 0.006 in.

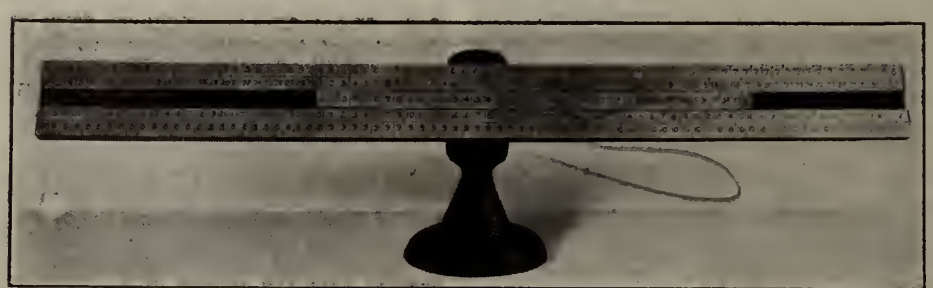


Fig. 9. Calendar Slide Rule.

LINK BRACKET CASTINGS. BUSHINGS FOR LINK.—If removed, the holes in castings for same to be measured for alignment and diameter. If not in line, or out of round, to be reamed or removed and ground. Size for grinding outside of bushing to be given by inspector. Inside of bushing before applying to be ground 0.004 in. larger than standard gauge to allow for closing when applying.

The distance, collar to collar, of bushings when applied must be to standard dimensions within limits plus or minus 0.010 in. This distance to be obtained by grinding faces of collars. Inspector to give thickness for bushing collars.

Renewals and Repairs.

JAW BOLT PIN AND BUSHING.—When play between pin and bushing exceeds 0.030 in. renewals should be made.

BUSHINGS. — Outside surface for pressing into levers to be final ground 0.004 in. to 0.006 in. larger than hole to while to be applied to allow for force fit.

Inside bearing surface. Final finish grind to standard plug gauge.

For link saddle. Inside to be final ground for force fit on pin of link saddle or bridle. Outside to be final ground, after applying, 0.006 in. to 0.008 in. smaller than companion bushings in link bracket casting. (See below for bushings used in link bracket casting.)

TAPER HOLES.—Test with taper gauge. If worn or not reamed properly, to be reamed to step size as shown on taper plug gauge.

HOLES FOR BUSHING IN LEVERS. FINISH.—If worn, tapered, rough or out of round, to be reamed or ground true and size recorded on blank.

LINKS. — Inside surfaces for link blocks. Grind when variations in any two dimensions exceed 0.015 in., or when out of radius more than 0.062 in.

LINK AND SADDLE.—To be assembled complete in valve motion department in assembling fixture and properly lined to work freely in the same. The distance, collar to collar, of bushings when link is assembled must be such as to allow between 0.025 in. and 0.035 in. lateral motion in link bracket. This distance to be adjusted by use of liners or varying thickness of bushing collars.

**Department to Make Repairs—Lift, Shaft, Bracket and Supports.**

All repairs to be made by valve motion department. Pins and bushings to be fitted as specified above. Bearings on lift shaft to be trued up when more than 0000 in. out of round. Bearing in brackets for same to be rebabbitted when 0000 in. larger than shaft bearing.

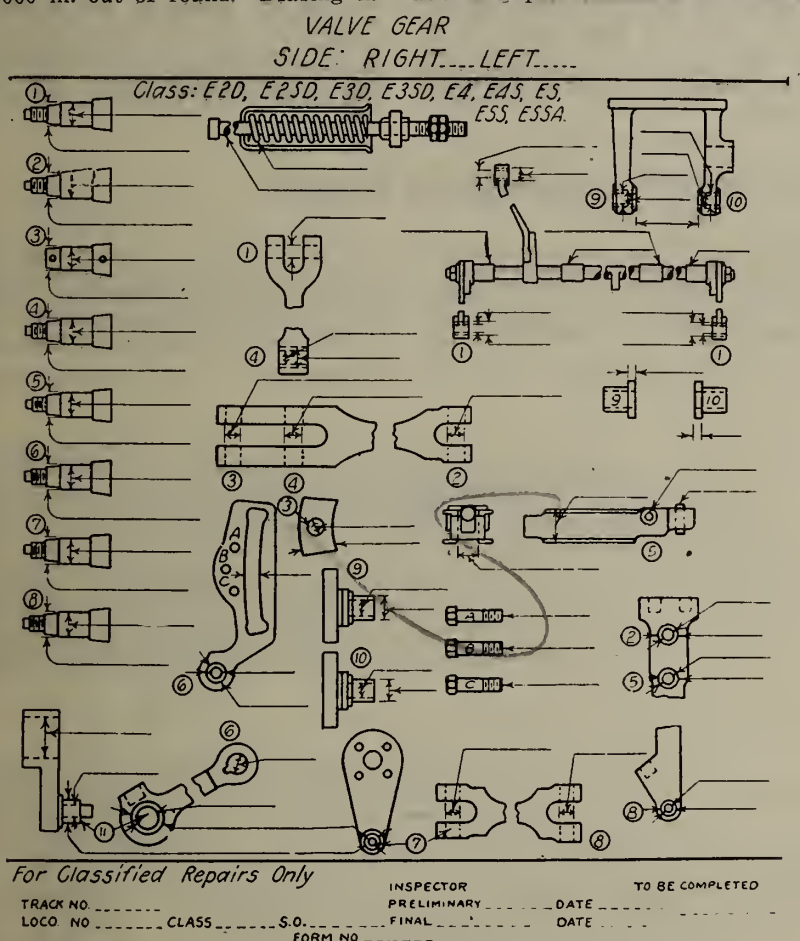

VALVE GEAR
SIDE: RIGHT.... LEFT.....
Class: E2D, E2SD, E3D, E3SD, E4, E4S, ES, ESS, ESSA.
For Classified Repairs Only
INSPECTOR
TO BE COMPLETED
TRACK NO. _____
PRELIMINARY _____ DATE _____
LOCO. NO _____ CLASS _____ S.O. _____
FINAL _____ DATE _____
FORM NO _____

Fig. 10. Valve Gear Inspection Sheet.

**Eccentric Crank.**

FIT ON CRANK PIN.—Valve motion department to be responsible for fit of eccentric crank and bolts and nuts for the same and must properly fit the same to crank pin.

**Valve Stem Cross-head.**

FIT, VALVE STEM IN SAME.—Valve motion gauge to be responsible for fit of valve stem in valve stem cross-head and also the key for same, and shall see that these parts fit properly.

**Link Saddle and Link Hanger Casting.**

FITTING.—Valve motion department to apply bushing in hanger and be responsible for proper fitting.

**Letters to Be Used to Designate Finish, Etc.**

X—Renew.
B—Rebore.
L—Reline.
G—Grind.
P—Patch.
W—Weld.
R—Ream.
F—Refinish.
S—Straighten.
H. T.—Heat Treatment.
O—Not to be removed.
O. K.—Correct, no work required.
D—Dress to standard dimensions.
R. S.—Reset to standard dimensions.

## Feed Water Heaters for Locomotives.

The committee, of which F. M. Waring, Engineer of Tests, Pennsylvania Rd., was chairman and of which W. H. Sample, General Superintendent MotivePower and Car Departments, G.T.R., was a member, reported as follows:—The conditions now appear to your committee to be favorable for a renewal of interest in feed water heaters for locomotives, and while the trials of them have been somewhat retarded by the unusual conditions of the past few years, we appear to be upon the eve of an extensive application of heaters, under more favorable conditions than at any previous time, on account of the high cost of fuel and the greater need for its conservation. After consideration of the development and present state of feed water heaters for locomotives, your committee believes that the early phases of the subject have been very fully covered in reports and individual papers, and they will, therefore, confine their discussion to heaters of recent production, either in use or immediately available for application.

The members of the association have before them the very valuable individual paper by J. Snowden Bell, Associate Member. (See 1917-1918 proceedings.) The author's conclusion, stated in par. 95 of his paper, as "beyond question," is, that a feed-water heater "can and will be developed and adopted with the most substantial benefit in locomotive operation" and this, after giving the history and description of most or all of the important devices of this character, as applied to locomotives, during the preceding 116 years.

Paragraph 4 of the paper classifies feed-water heaters as of two different types which may be termed respectively, (a) surface or closed heaters, and (b) injection or open heaters. At the same time mentioning the fact that the type (a), in which the heat transfer, to the feed-water, is effected through walls of comparatively thin metal, has been the more frequently experimented with, and, for several reasons, has heretofore seemed to be the more practical and desirable of the two types. Your committee wishes to draw careful attention to this latter statement, because, while this opinion has no doubt been more or less generally held, the latest developments suggest that the open heater, which operates under practically atmospheric pressure, has no small tubes as heating surface, and delivers the heated feed water and condensed exhaust under suction to the boiler feed pump, using an oil separator, has fully as good, if not a better chance of final success, considering the conditions which should obtain in an efficient heater.

Your committee, for the present at least, is not considering heaters using waste gases from the flues, but only the exhaust steam as the heating medium; because these two sources of heat are independent of each other and require separate heaters, and where both of them are employed in conjunction, the exhaust steam must or should be used first, although usually in tandem with the other and the exhaust steam carries much larger portion of the waste heat, (approximately six times that in the waste gases) and this heat is more readily available, and with the open heater especially, it is believed has been much more successfully employed than that of the waste gases, without interference with the working of the locomotive.

Your committee began its work by endeavoring to accumulate information by means of a circular addressed to the members, and replies were received from 86 railways. Seven roads report that they now have, or very recently have had, feed-water heaters in service and give full replies to the circular. Four roads that they they contemplate the use of heaters. The remainder of the replies are to the effect that 76 roads have had no recent experience in the use of feed-water heating appliances. A tabulation of the replies, which were made in full, describing feed-water heating systems in use at present, or but recently removed from service, is given in appendix 1 to the report. Appendix 2 gives data on open and closed heaters tested by the Pennsylvania Rd. Appendix 3 gives comments by the Baltimore & Ohio Rd. on its experience. Appendix 4 gives some comments by Boston & Albany Rd. Appendix 5 gives comments by the Canadian Pacific Ry.

It appears from this survey, that at the present, there are in use in this country but two general types of feed-water heaters, the closed heater, having a number of small tubes; and the open heater, in which the exhaust steam is condensed by a jet of cold feed-water.

From some of the replies to our circular, it appears that attempts at heating the feed-water while in the tender tank have been made by using the air compressor exhaust for this purpose. The arrangements were not entirely successful or satisfactory on account of the difficulty in pumping the heated water to the boiler. When the temperature of the water was low enough to be handled by an injector the saving was very small.

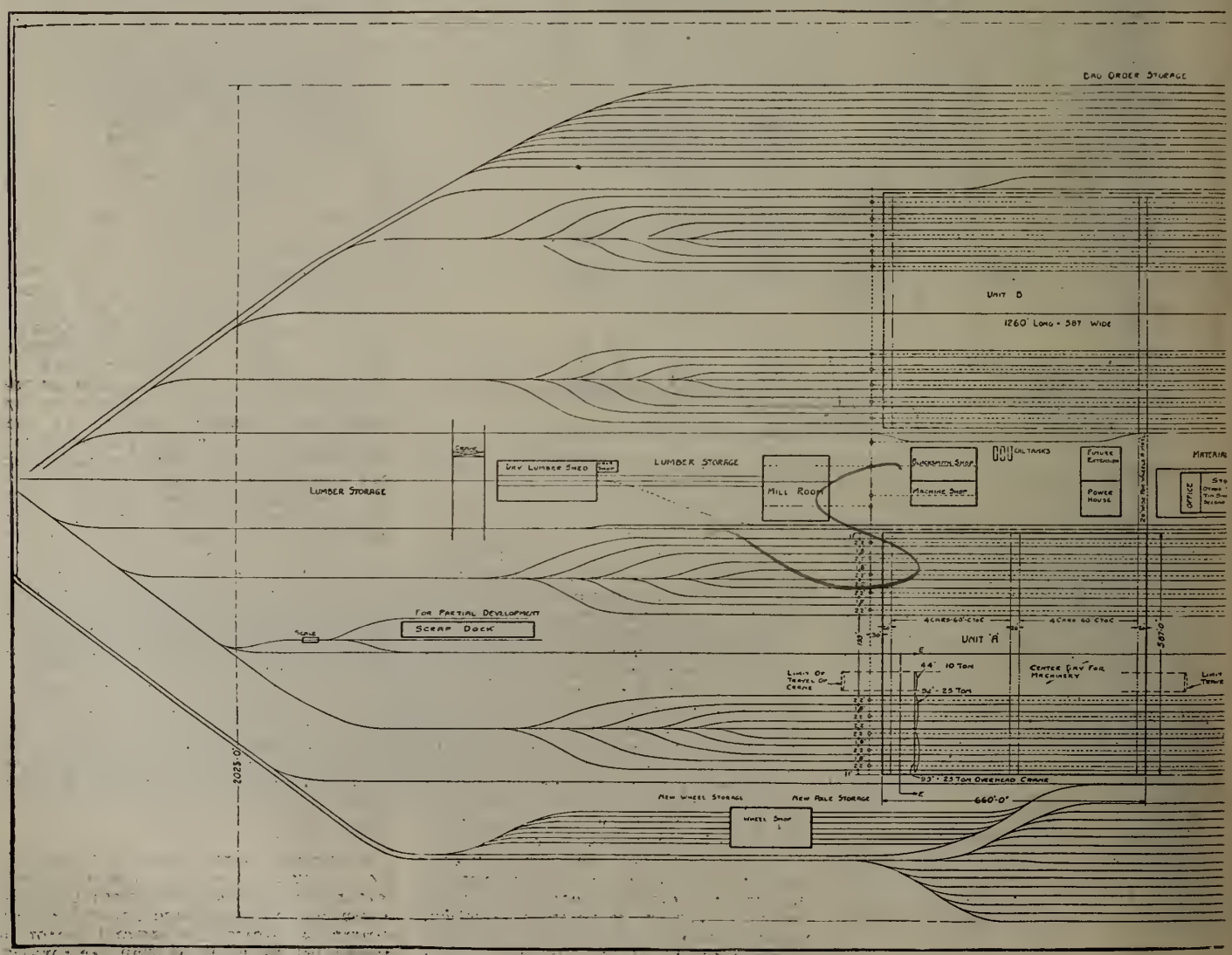
It has been suggested that water having a high percentage of incrusting solids would make feed heating impossible, on account of the scale deposited on the tubes of the heater. Such water would, no doubt, be troublesome if used in a closed type heater. The open type heater, however, could be expected to handle such water with no more difficulty than when injectors are used.

The location of the heater apparatus on the locomotive is of considerable importance. The exhaust steam should have short and direct passages into the heater; and heater, pumps and piping should be placed so as to be easily drained. The attachment of the heater and pumps to the side of the boiler has been found of advantage in the prevention of freezing. It has been found that the superheat of the steam is reduced when the feed heater is used, and a new basis should be established for determining the necessary superheating surface for feed heater locomotives. It is thought, however, that an enlargement of the superheater should be considered for new construction only, the reduction in superheat not being sufficient to require a revision of existing superheaters when feed-water heaters are applied to old locomotives. It appears from present indications, that feed-water heating for locomotives, is about to be given a thorough trial on a few roads, and, with the improved heaters now available, we believe that a satisfactory arrangement of heater can be developed and that the association members should assist by installing heaters on their various roads in order that data may be obtained under as many different operating conditions as possible.

Appendix 5. Canadian Pacific Ry. officials state that they have experimented for the past 15 years with various types of waste gas and exhaust steam feed water heaters. A great deal of information has been obtained, although practically the majority of arrangements throughout the past have proved unsuitable for one reason or another. They are now designing a feed water heater which they propose to try thoroughly in competition with other feed water heaters on the market. They feel there is a considerable amount of experimental work to be done yet, before any satisfactory heater is discovered for their own climatic conditions, but they feel that the future will bring forth a heater which can readily be applied to any type of locomotive. In their past experiments the heater was placed crosswise over the door of the smokebox, and in front of the stack. They are also experimenting with an entirely new design, the details of which are not complete. This heater will be an integral part of the locomotive.

## Repair Shop Layouts Committee's Report.

The committee, of which I. S. Downing, General Master Car Builder, Cleveland, Cincinnati & St. Louis Rd., was chairman, and of which W. J. Robider, General Master Car Builder, C.P.R., Montreal, was a member, reported as follows:—Preliminary considerations of the subject assigned to this committee clearly indicated that the efforts of the first year should tend to establish certain basic principles rather than to develop a complete and concrete report. The committee is submitting a tentative shop layout, embodying general features in such detail as is deemed immediately




Proposed A.R.A. Freight Car Repair Shop. Plan of buildings and tracks.

essential, together with their general observations on the subject. Criticism is invited, which should tend toward the development of complete and specific recommendation some time in the future. From the progress so far to be reported, and discussions it is anticipated will follow, it is felt there will be currently available considerable information which it is hoped the members of the association will take advantage of in consideration of their immediate needs and work contemplated. The work of the committee thus being progressively constructive.

It was decided in the preliminary layout of a repair shop to submit the general characteristics of a shop with an ultimate 100 car a day output, such units providing for 25 cars a day, and recommendations being submitted in the expansion programme so mapped out that the layout would be expanded in units of 20 cars a day until the ultimate capacity of 100 was reached.

Some investigations developed the fact that space should be proportioned from the following data:

### (A) Steel Car Plant.

(1) Twenty-five steel car spots for heavy repairs will turn out from each spot one car every six 8-hour days, or 4 cars a day.

(2) Twenty-five steel car spots for medium heavy or heavy light repairs will turn out from each spot one car every three 8-hour days, or 8 cars a day.

(3) Fifty steel car spots for light repairs will turn out one car from each spot every 8-hour day, or 50 cars a day.

### (B) Wood Car Plant.

(1) Twenty-five wood car spots for heavy repairs will turn out from each spot one car every six 8-hour days, or 4 cars a day.

(2) Twenty-five wood car spots for medium heavy or light repairs will turn out from each spot one car every three 8-hour days, or 8 cars a day.

(3) Fifty wood car spots for light repairs will turn out one car from each spot every 8-hour day, or 50 cars a day.

While the committee provides, in the general plan of the 100-car shop, space for wood cars, and while it is recognized that for a great many years there will be wood cars to consider, and for a considerable time longer, steel cars with a certain amount of wood work to be performed, the major part of the committee's considerations are devoted to steel cars.

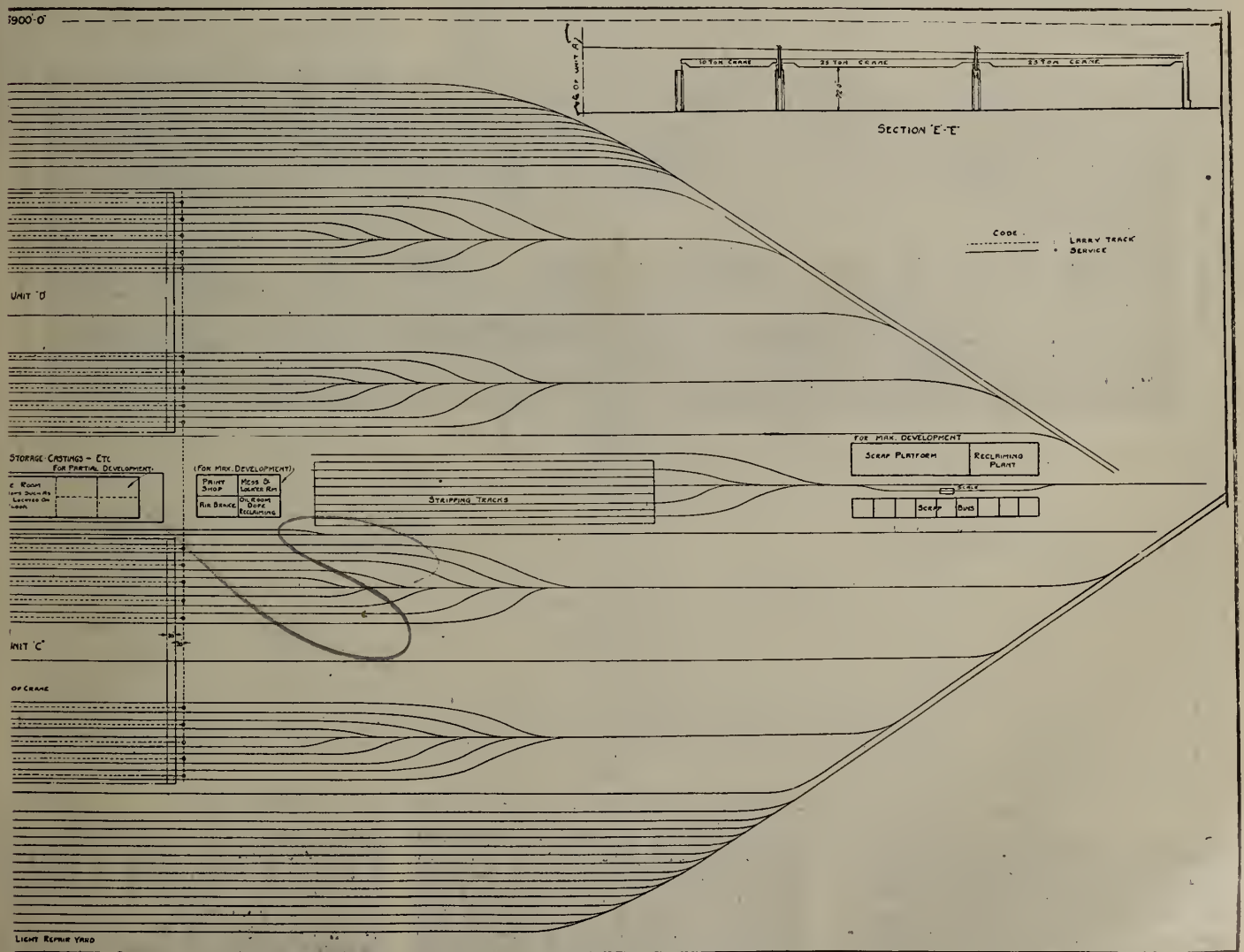
Consideration of the units of measure decided above is invited in order to develop what the actual conditions are over the country as a whole; and to what extent they vary for various sections of the country; and as to just why these variations occur, as certain modifications will have to be made ultimately of such specific recommendations as are made should these limits of measure vary between considerable limits.

The construction of buildings, it is believed by the committee, when ultimately developed, should be the joint work of the engineering and car shop committee. For the present, it is thought sufficient to conform to buildings which are in plan practically square. Roof construction involves the geographical location of the buildings and their layout relative to the points of the compass. Several materials are largely construction matters, not essential to the general subject other than in final consideration of the cost. Briefly, the development of the plant and facilities as to capacity, efficiency and economy of operation should first be completed, and construction as reflected in first cost worked out as secondary considerations.

It is believed that track spacings such as shown for larry and service tracks are representative. Height of buildings will be largely governed by operations taking place therein and the extent to which cranes are installed. Where cranes are used, a clearance from rail to bottom of crane girder of 22 ft. is suggested. All larry track should be of standard gauge, and plan between rails for tractor service.

Gas and electric cutting stations should be considered in general, but specific advantages should be more clearly established before final recommendations are made.

The distribution of compressed air is largely one of local preference and conditions, but the ultimate capacity of




**Proposed A.R.A. Freight Car Repair Shop. Plan of buildings and tracks.**

the plant considered, it is deemed advisable to provide several electrically driven air compressors, located near points of consumption, in preference to two or more large units located at a central point, both on account of economy of distribution and continuity of service.

The question of machine tools, as reflected by the plans accompanying this report, is a matter for considerable discussion. The committee report containing such layout of tools and their number is more as a suggestion than as a concrete recommendation. In this connection it should be recognized that, up to the present, the steel car repair work is carried on largely by machine tools primarily designed for locomotive work, and that, no doubt, great economies can be perfected by the design of machine tools specifically adapted to car repair work.

The location of cranes and their installation, as shown by the committee's plans, are recognized as facilities the installation of which need not be carried on to the maximum point at the time of initial construction of shop, but should be provided and installed as conditions indicate their economy.

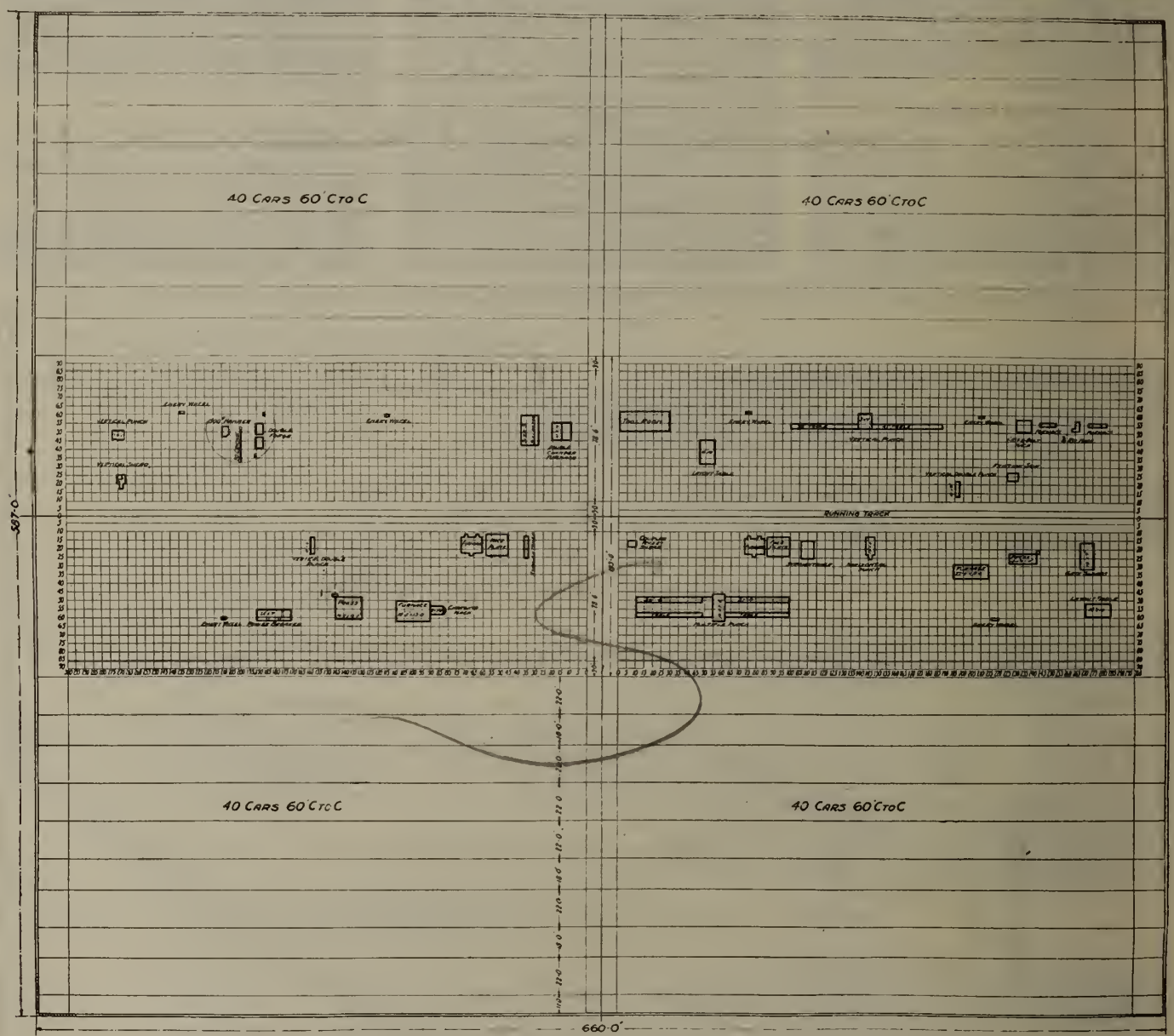
Other illustrations relating to this article appear below, and on pages 345 and 346.

## Locomotive Headlights and Classification Lamps.

The committee, of which H. T. Bentley, Superintendent Motive Power and Machinery, Chicago & Northwestern Rd., was chairman, and of which W. H. Flynn, Superintendent Motive Power, Michigan Central Rd., was a member, reported as follows:—Following the progress report submitted at the 1919 convention, and in line with the discussion at that time on the various phases and details of electric lights on locomotives, your committee has kept in touch with the progress and practices of the various railways during the past year. There appears to be a desirability for uniformity in practices as regards capacity of generator, type of steam driving unit, details of connections and wearing parts of both generator and steam unit, sizes of lamp, reflector, etc.

The incandescent headlight lamp has now been practically made standard on the railways in this country. With such a lamp for that particular use on both road and switch locomotives, together with a generally uniform practice as to the size of lamps in cabs, markers, and classification signals, it is practical to indicate a somewhat close specification for the generator and steam driving unit. Taking into account the necessity of being able to transfer on short notice the equipment from one locomotive to any other, it is believed that such an equipment should be of 500-watt capacity, of the turbine driven type, and capable of developing 32 volts and full load at a steam gauge pressure of 100 lb. The governor should also regulate the speed of turbine properly, under a range of steam pressure between 100 lb. minimum and 250 lb. maximum.

For the generator and turbine there are many details that past practices in handling somewhat similar equipments indicate uniformity in certain dimensions



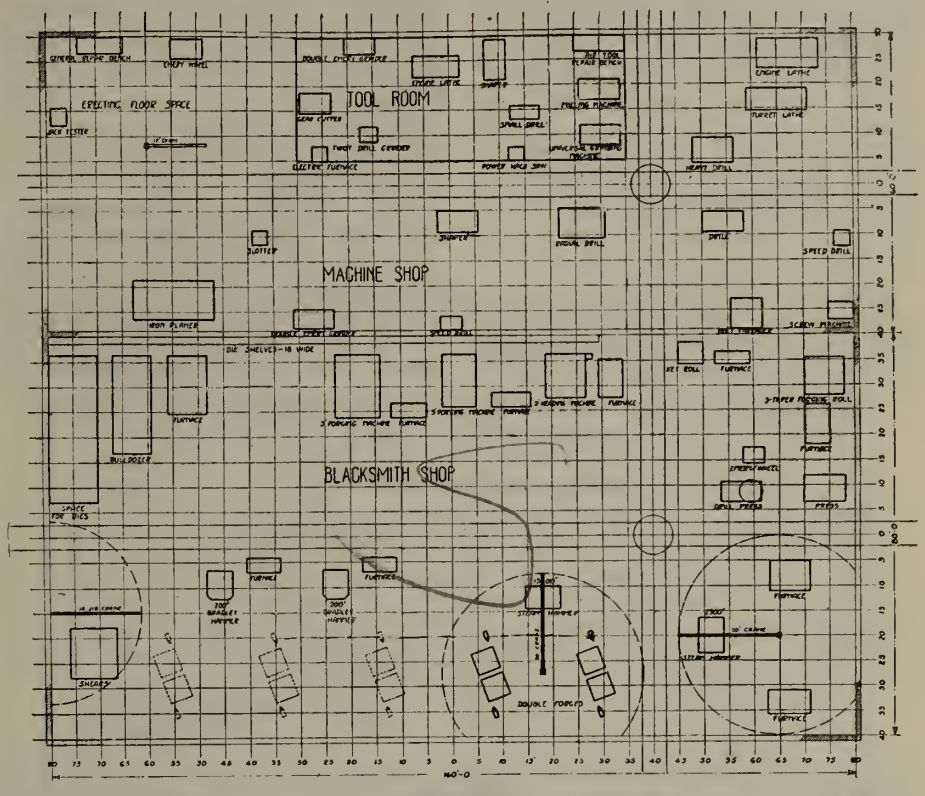

Proposed A.R.A. Freight Car Repair Shop. Main shop, tool layout (center bay); 25-car output per day.

and arrangement on equipments, as furnished by the several manufacturers, that should be maintained. This is, of course, for the express purpose of obtaining prompt interchangeability in service, and reduction in the stock of renewal parts where different makes of machines are used and locomotives are interchanged. It will be apparent that the bolt spacing of the base should be the same on all equipment, also that the size of steam pipe required should be the same. In this same connection, it would be advantageous if the location of the steam exhaust and drain connections were identical on all makes of headlight turbo-generators. As to the renewal parts, the ball bearings can be made similar, brushes can all be the same size and all bolt and screw threads should be standard.

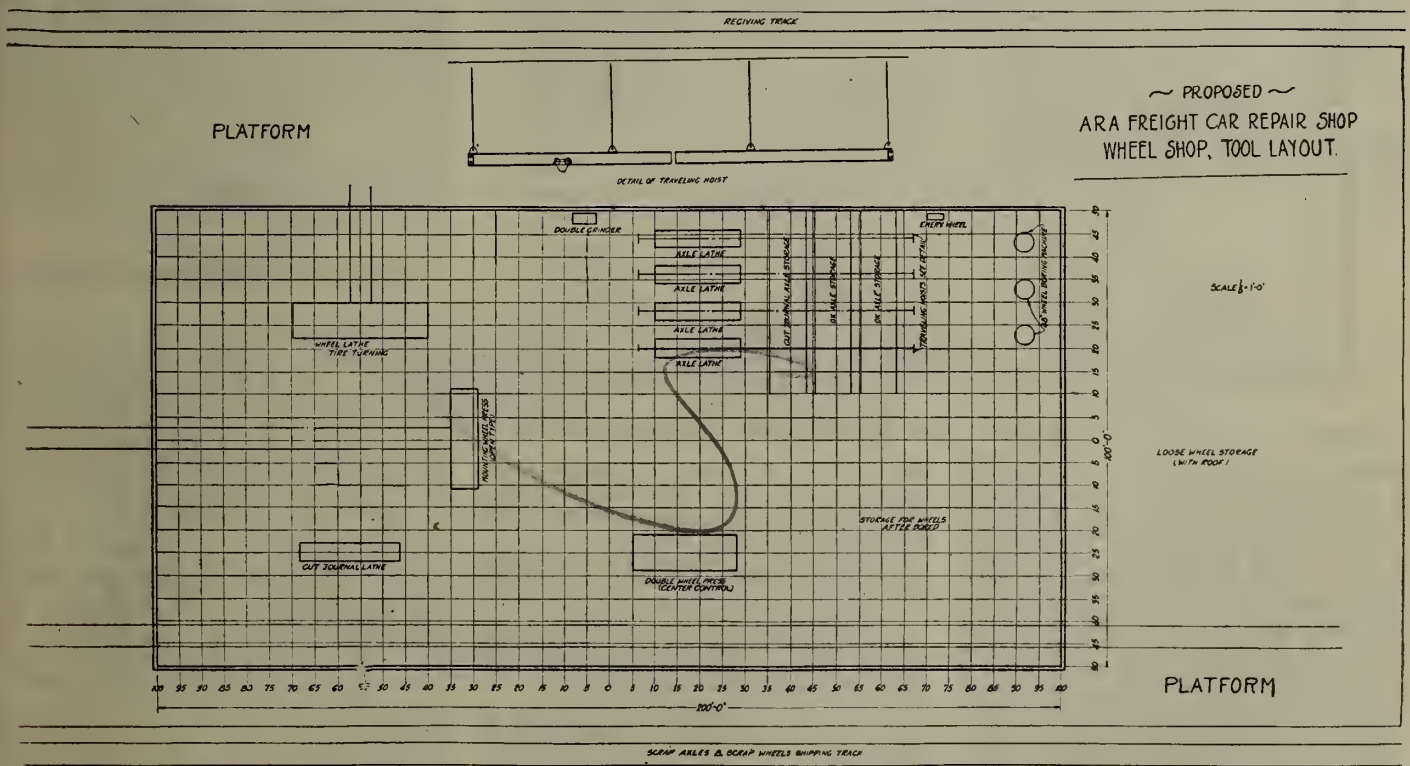
In locating the turbo-generator on the locomotive four details must be considered, all of approximately equal importance. In the first place, short steam pipes are necessary. Long pipes are difficult to maintain and they do increase radiation losses. The location must be one that is accessible for inspection, and also not interfere with the inspection and care of other parts of the boiler or machinery that require both inspection and renewal. It must not in any way interfere with the vision ahead of the locomotive crew, and the exhaust steam cannot be permitted to cloud up the front cab windows, condense over the cab roof, or in any way become a nuisance to the locomotive man or fireman. It is desirable, therefore, and seems to be the general practice, to have the generator set placed near the cab. Many roads are placing it longitudinally with the boiler and on the left-hand side where the wire conduit to the headlight is placed. The generator end is usually set toward the cab to avoid the collecting of snow and ice or water inside the generator and commutator protection. This position has a further advantage in being able to be reached by a man standing on the running board, as well as being away from the condensation and moisture that collects in and around the unit from the whistle and safety valve discharge and leaks of steam therefrom, particularly when it is placed on top of the boiler just ahead of the cab.

There is a rather strong preference indicated for the use of metal conduit in wiring of cabs. For outside wiring, that is, to the headlight and the lamps, both at the front of the locomotive and the rear of the tender, this is the general practice. When used in the cab, the conduit placed on the ceiling and on the sides should not be rigidly connected. With either open or metal conduit wiring in the cabs, all drops should be made through suitable fittings, so that in ordinary maintenance or the overcoming of trouble on the road no joints in the wires will have to be disconnected.

The use of a 250-watt, G-30, 32-volt concentrated filament lamp for headlights of road locomotives and of a 15-watt, S-17, 33-volt special cab lamp for all lights in cabs, classification signals, markers, etc., is practically standard everywhere. For switch locomotive headlights there is still considerable and very




**Proposed A.R.A. Freight Car Repair Shop. Blacksmith and Machines Shops, Tool Layout; 25-car output per day.**



strong difference of opinion as to what size lamp can be used, and meet both the requirements as to the 300-ft. vision and the frequent objections of yard crews to a light that is too dazzling. In this connection, the National Lamp Association has under consideration a series of road tests to determine the vision range of headlight lamps of different capacities. They have requested this committee to be represented at these tests and this invitation has been accepted. The committee has suggested that the scope of the investigation should include lamps of various capacities combined with reflectors of different sizes and construction, the idea being that it could then be determined as to the size of lamps needed, with type and size of reflector to meet definite vision requirements.

Since the 1919 convention, under instructions, marker lights and other lights on rear of tender, as well as classification lights on the engine, are being wired for electric lamps. This requires a considerable change in the arrangements already in use on most roads and the plans being followed vary considerably. A large number of the members have, as requested, furnished the committee with blue-prints showing what they have adopted to meet this requirement. It is hoped that these plans can be reviewed critically and from them a recommendation made for presentation at the convention.

There is a growing demand for a headlight reflector that will not require such constant attention to keep clean as it is necessary to give the usual silvered copper reflector, so that it will function properly. This is particularly the case in connection with yard locomotives which often are kept away from the locomotive-house for days at a time. Several types of reflectors are being developed along this line and it is expected that after the lamp tests mentioned above are made some definite information will be available for the members.

Your committee would recommend the following for submitting to letter ballot as recommended practice:

1. For electric headlight equipment, incandescent lamps be used with a 500-watt turbo-generator capable of developing 32 volts and full load, at a steam gauge pressure of 100 lb., the governor to regulate the speed of turbine properly between steam pressure range of 100 lb. minimum and 250 lb. maximum without the necessity for change of nozzle or governor parts.

2. The turbo-generator should be located as near the cab as practicable, preferably set longitudinally with the boiler, on the left-hand side, with generator end toward the locomotive cab and in a position so as not to obstruct the vision of the fireman. Where conditions will not permit location of turbo-generator in this manner, it should be placed on the top of boiler, with dynamo end toward side equipped with the conduit system (preferably the left side).

3. The use of a 250-watt, G-30, 32-volt concentrated filament lamp in headlights of road engines.

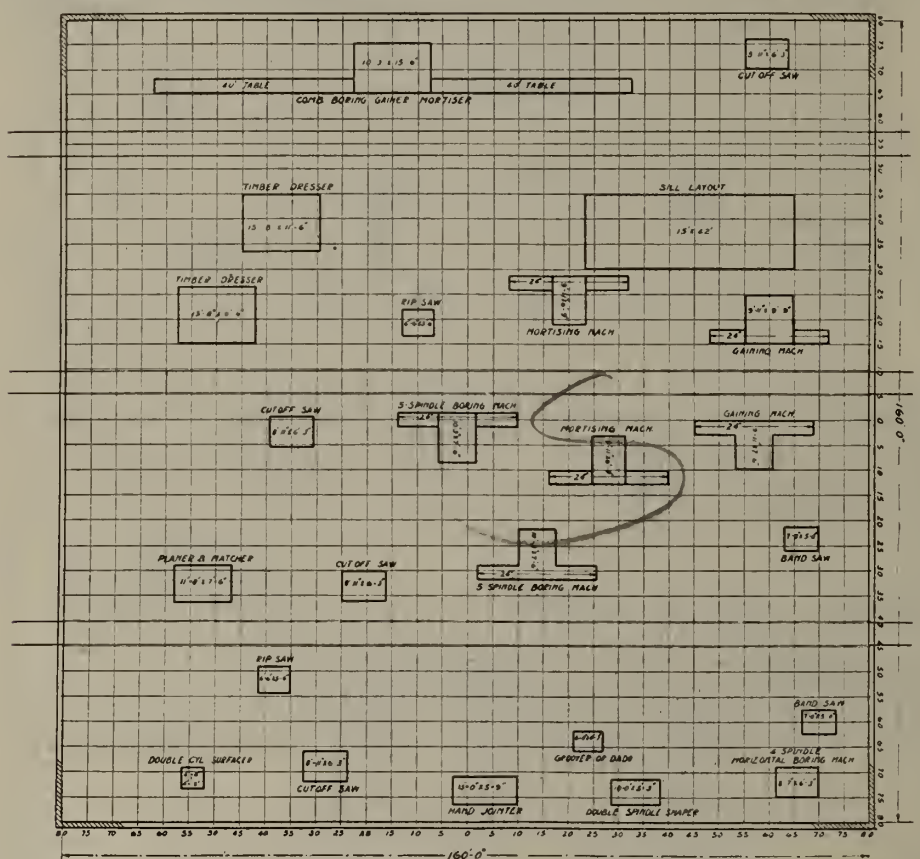
4. The use of a 15-watt, S-17, 33-volt special cab lamp in cabs, signal or locomotive number lights and all other outlets, other than the headlight lamp.

5. The use of a dimmer in connection with road locomotive's headlights, so wired that the locomotive can reduce the intensity of the light as desired and in accord with the rules.

6. That all wiring in cabs be in metal conduits so applied that it may be removed intact, a loose connection being arranged between the conduit placed on the ceiling and on the sides of the cab.

7. All drops should be made through suitable fittings placed on the ceiling of cab where possible, in back of and not directly over the boiler so that they are readily accessible.

Your committee would also request approval of the plan to work jointly with the manufacturers of headlight turbo-generators, and the Association of Railway Electrical Engineers in developing standard practices as to: bolt spacing of the base; size of steam, exhaust and drain pipes; location of steam, exhaust and drain pipe connections; size of ball bearing; size of commutator brushes; bolt and screw threads.




**Proposed A.R.A. Freight Car Repair Shop. Wood Mill, Tool Layout; 25-car output per day.**

## Standard Blocking for Cradles of Car Dumping Machines.

The committee, of which J. McMullen, Superintendent, Car Department, Erie Rd., was chairman, reported as follows: The committee appointed to make recommendations covering standard blocking for cradles of car dumping machines have made investigation and find that two machines have been equipped with the recommended practice for blocking for cradles of car dumping machines. As the recommended practice was adopted after the close of navigation, there has been very little opportunity to observe the working of the machines so equipped. It is felt, however, that the cars will be better supported, and less damage will result to them if the recommended blocking is applied.

The committee would like to receive reports from any of the members who may observe car dumping machines which are equipped with the recommended blocking. Members of the committee will make inspection of the blocking on car dumping machines within their territory prior to the opening of the lake boat season, also as often as possible during the season, to observe the condition of the blocking and make report to the committee. It was also decided to recommend to the committee on car construction that any type of car that is liable to be used in connection with dumping machines be so constructed as to readily fit to the dumping machine, with the recommended standard blocking, without damage to the car.

## Autogenous and Electric Welding.

The committee, of which J.T. Wallis, Chief Superintendent of Motive Power, Pennsylvania Rd., was chairman, reported as follows: The report of your committee to the last convention was adopted by letter ballot and incorporated in the American Railroad Association Code of Rules (M. C. B.) governing the condition of, and repairs to, freight and passenger cars in the interchange of traffic. There were three subjects referred back to your committee for further investigation and report, viz.: 1—Building up flat spots on steel and steel tired wheels. 2—Building up of worn collars at the journal ends of axle. 3—Welding of fractures in couplers. The committee has done considerable work on these subjects during the past year, but has not to date concluded its investigation and tests. In addition to the subjects left over last year, your committee is making a thorough study of the relative merits of autogenous, gas and electric welding on the various parts of car and locomotive equipment. Your committee, therefore, desires to submit this as a progress report, pending the conclusion of the investigations and tests which they now have under way.

# Standard Method of Packing Journal Boxes.

The committee, of which C. J. Bodemer, Assistant Superintendent of Machinery, Louisville & Nashville Rd., was chairman, reported as follows:—Your committee respectfully submits the following report covering a standard method of packing, cleaning and assembling of journal boxes on locomotive tenders and cars, and recommends that it be submitted to letter ballot for adoption as recommended practice:

**Preparation of New Packing.** — The waste must be loosened, placed in a saturating vat and kept completely submerged in car oil, at a temperature of not less than 70 degrees Fahrenheit, for at least 48 hours to ensure thorough saturation. It shall then be drained for the purpose of removing the excess oil, until the packing is in a resilient or elastic condition.

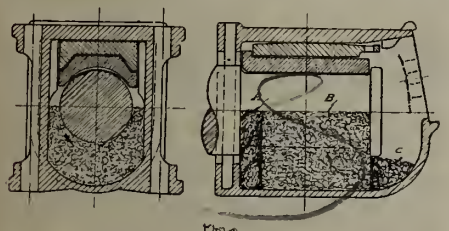


Figure 1.

Prepared packing in storage should be turned over at least once each 24 hours, or the oil which has accumulated in the bottom of the container shall be drawn off and poured over the top of the prepared packing.

**Preparation of Renovated Packing.**—All packing, when removed from journal boxes for the purpose of periodical repacking or renovating, should be pulled into a container, avoiding contact with the ground or any other place where it may pick up dirt, and taken to the waste-reclaiming plant. This packing must not be reused until renovated.

In reclaiming packing it should be first picked over carefully, and dirt, metal, etc., shaken out, the knotted strands of waste pulled apart, and then placed in hot oil in renovating tank for a short time, working it with a fork for the purpose of thoroughly washing and loosening it. It should then be rinsed in clean oil, then drained for the purpose of removing the excess oil.

**Cleaning Boxes.**—Before packing a journal box the oil cellar shall be thoroughly cleaned of all dirt, sand, scale and grit, and if water is present it must be removed. When new journal boxes are applied, or when reapplying journal boxes, the interior of the box, including the dustguard well, shall be so treated, and close-fitting dust guards and lids should be applied.

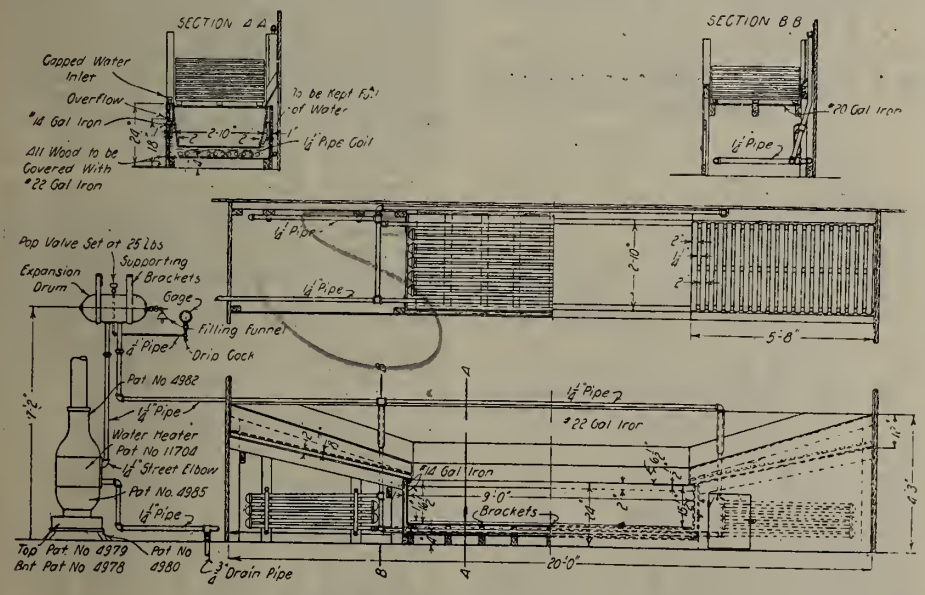



Fig. 2. Waste Reclaiming Plant, using stove to heat water.

**Cleaning and Applying Bearings.**—Before applying journal bearings they shall be thoroughly clean, have a smooth bearing surface, free from irregularities, and shall have a proper bearing. Under no circumstances is it permissible to use sand paper, emery paper or emery cloth for the purpose of removing irregularities from the bearing surface. A half-round file or scraper should be used. Care must be taken that the wedge has a good contact on the crown of journal bearing. The surface of the journal should be smooth and thoroughly clean before bearing is applied. When applying a journal bearing, a coat of lubricating oil must be applied to the bearing surface of same. Never wipe the bearing surface of the journal bearing with waste.

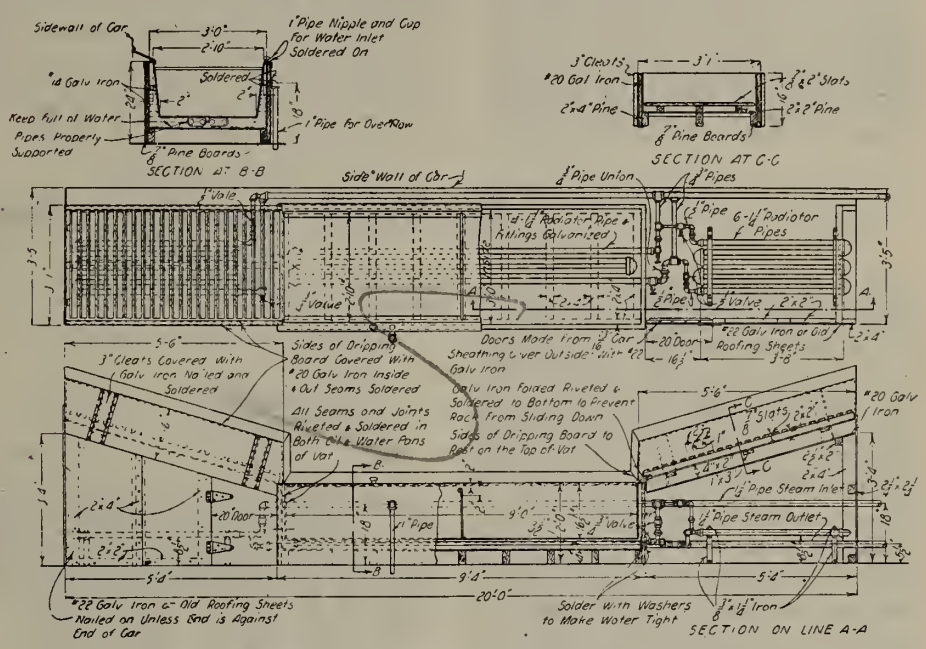

Sidewall of Car
1" Pipe Nipple and Cup for Water Inlet Soldered On
#14 Galv Iron
Soldered
Keep Full of Water
Pipes Properly Supported
1" Pipe for Overflow
7/8" Pine Boards
SECTION AT B-B
3" Cleats
#20 Gal Iron
2"x4" Pine
2"x2" Slats
2"x2" Pine
7/8" Pine Boards
SECTION AT C-C
Side Wall of Car
1" Pipe Union
1" Pipes
1" Vale
1" Pipe 6-1 1/4" Radiator Pipe Fittings Galvanized
1" Pipes
1" Valve
2"x2"
3" Cleats Covered with Galv Iron Nailed and Soldered
Sides of Dripping Board Covered With #20 Galv Iron Inside & Out Seams Soldered
All Seams and Joints Riveted & Soldered in Both Oil & Water Pans of Vat
Doors Made from Car Sheathing over Outside Galv Iron
#22 Galv Iron or Old Roofing Sheets
Galv Iron Folded Riveted & Soldered to Bottom to Prevent Rack From Sliding Down
Sides of Dripping Board to Rest on the Top of Vat
#20 Galv Iron
1 1/4" Pipe Steam Inlet
1 1/4" Pipe Steam Outlet
#22 Galv Iron or Old Roofing Sheets Nailed on Unless End is Against End of Car
Solder With Washers to Make Water Tight
SECTION ON LINE A-A

Fig. 3. Waste Reclaiming Plant, using steam to heat water.

**Application of Packing.**—(a) Inner.—In packing a journal box, twist somewhat tightly a rope of packing and place it in the extreme back part of the box, as shown at A in fig. 1. Make sure that it is well up against the journal so as to properly lubricate the fillet on the journal and keep out the dust.

(b) Main.—Apply sufficient packing (preferably in one piece) to fill the space shown at B in fig. 1. Take care to have this packing bear evenly along full length of the lower half of the journal. The packing should not be too tight, but should be tight enough to overcome any tendency to settle away from the journal. The packing should extend to approximately the center line of the journal but not above at any point, and should be pressed down evenly at sides that no loose ends may work up under the journal bearings.

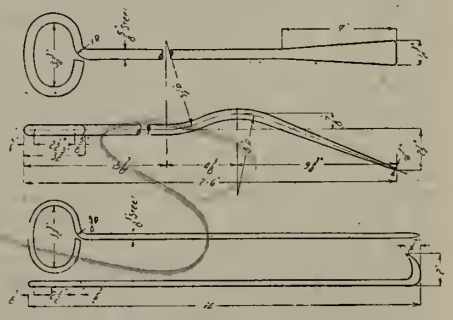


Fig. 4. Journal Box Packing Tools.

(c) Outer.—Apply a third piece of firmly twisted packing as shown at C in fig. 1, and pack tightly, in order to prevent displacement of the main packing. There should be no loose ends hanging out of the box as they would tend to draw out the oil.

General Remarks.—In addition to the above recommended practice the committee desires to emphasize the importance of causing the observance of several other factors, as follows, with the view of reducing hot boxes to the minimum:

It is very essential that journals, after being turned, should be cylindrical, free from taper, tool marks, ridges, corrugations and other defects. In other words, a turned journal should reflect first-class workmanship, which is only possible of attainment through the use of machine tools, in good condition, of a design suitable for the nature of the work and capable of producing same with precision. Your committee feels that an attitude of indifference prevails in many quarters with respect to the necessity of providing suitable heavy-duty lathes for the machining of axles, especially the larger sizes, and, as a result, many obsolete and worn-out axle lathes, that have outlived their usefulness, are being continued in service, whereas a close examination would disclose defects in the machining of the axles that would prove such lathes incapable of meeting the requirements, and warrant their retirement from service.

It is suggested that the attention of all concerned be directed to the necessity of fully protecting journals against rust and corrosion during storage and that due care should be exercised in the handling and shipment of mounted wheels, to guard against the damage which journals are subjected to through coming in contact with flanges of wheels as a result of improper loading or careless handling around shop yards.

It is also highly desirable that rigid instructions be issued to effect a more careful practice in the handling of journal bearings, especially for shipment, to prevent the indiscriminate tossing of journal bearings against each other, thus nicking and needlessly damaging the smooth bearing surface of the babbitt metal lining.

Drawings showing two representative waste-reclaiming plants and a representative set of journal box packing tools are shown in figs. 2, 3 and 4.

# Car Wheels Committee's Report.

The committee, of which W. E. A. Henry, General Superintendent Motive Power, Southwest Region, Pennsylvania System, was chairman, and of which W. H. Winterrowd, Chief Mechanical Engineer, Canadian Pacific Ry., was a member, reported as follows:—The report of your committee submitted to the 1919 Convention referred to cast-iron wheels of the so-called arch plate design of 700 and 850 lb. weight respectively, adopted in 1917. We now wish to recommend, for adoption as recommended practice, wheels of the same several design, and of 650 and 750 lb. nominal weight respectively, to take the place of the present 625 and 725 lb. wheels. These designs are in accordance with recommendations of the Association of Manufacturers of Chilled Car Wheels and we are recommending them for adoption on account of the universally favorable reports on the performance of the 700 lb. arch plate wheel in comparison with the 650 lb. wheel of the former design. Figs. 1 and 2 show proposed designs for the 650 and 750 lb. wheels. If adopted, these wheels would be marked "A. R. A. 1920," and specifications changed accordingly.

There has again been referred to your committee for recommendation the proposition of increasing the thickness of flanges of cast-iron wheels, and a copy of a letter from the American Railway Engineering Association, giving its views on this subject, is appended. No information has been received that causes your committee to change its opinion as expressed in the report submitted to the 1916 convention, and, after full consideration, it is still the opinion that nothing will be gained in the interests of safety or economy by adding material to any portion of the flange of cast-iron car wheels in such location as will affect track clearances, and, furthermore, that such change is unwarranted and inadvisable.

It has been recommended that the present method of stenciling tape size of cast-iron wheels be discontinued and instead a permanent record of this information be provided as follows: Five small lugs ⅜ in. in diameter by ⅜ in. high, to be cast on inner plate near hub as shown on sketch, fig. 3. As each wheel is taped the necessary number of lugs to be broken or cut off, those remaining to indicate the tape size. For example, for a normal wheel tape size 3, two lugs to be broken or cut off, the three remaining indicating a tape 3 wheel. This practice is now being followed by some roads and the information is found to be of value when grinding second-hand wheels. This recommendation is concurred in by your committee.

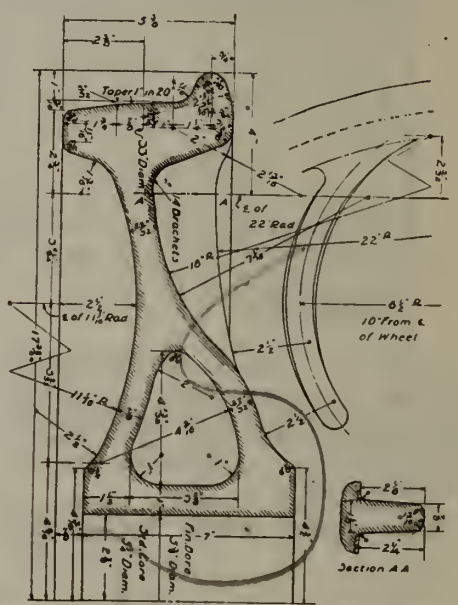



Fig. 1. Recommended practice for 33 in. cast-iron wheels, for cars of marimum gross weight not to exceed 95,000 lb.

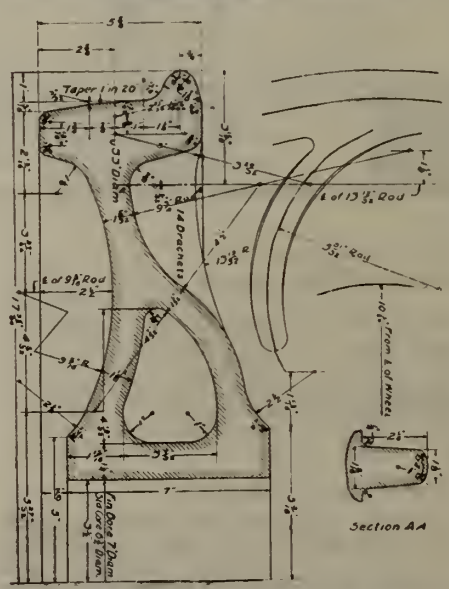



Fig. 2. Recommended practice for 33 in. cast-iron wheels, for cars of maximum gross weight not to exceed 161,000 lb.

Attention has been called to the fact that when the gauging points of maximum and minimum flange thickness gauge for cast-iron wheels (M. C. B. sheet 16) wear, it is necessary to condemn the gauge; whereas, if the sides of the opening above the gauging points were made parallel and perpendicular it would be possible to regrind the gauges and bring them back to standard; and it is recommended that these gauges be changed accordingly, as shown in fig. 4.

In 1912 the contour of the back of flange of steel and steel-tired wheels was changed so as to be identical with the flange contour of cast-iron wheels between the base line and top of flange, the total width of rim being increased from 5½ to 5 19/32 in., which is the same as the corresponding portion of the cast-iron wheel. The process of manufacture of wrought-steel wheels is such that the present contour is very difficult to produce, and as far as your committee is able to learn, it is not being furnished by any of the manufacturers, but instead all wrought-steel and steel-tired wheels are being manufactured with flange in accordance with design adopted in 1909. Under the circumstances, it is felt that the present contour should be withdrawn from the standards and the 1909 contour adopted. In this connection, we wish to state that the design of the wheel check and mounting gauge is such that no errors will be introduced on account of this change in the back of the flange.

Complaint has been made of errors in billing for service metal in steel and steel-tired wheels and the matter has been referred to your committee by the arbitration committee, with the recommendation that we outline a method of measuring service metal and a simpler gauge than the present one. The amount of service metal in a wheel is dependent not only upon the thickness of the tread, but upon the thickness and contour of flange as well, and only the metal remaining after restoring standard contour can be considered as service metal. Gauge for measuring steel wheels to restore contour (M. C. B. sheet C-1) is simple in operation and gives accurate readings, and we do not feel that it will be possible to design a simpler gauge that will take into account all the dimensions necessary to determine the service metal remaining in wheels. The errors in billing complained of are very evidently due to lack of care in taking measurements and it is also apparent that the gauge above referred to is not being generally used.

In order to correct the conditions complained of, we would recommend that the second paragraph, rule 98, 1919 Rules of Interchange, be modified as follows,

the modification being shown in bold face type.

"The price for new wrought-steel wheels shall be based on the scrap value of $8 for metal inside the condemning limit (which is ¼ in. above the limit groove) plus $1.75 for each 1/16 in. of service metal (on radius of tread) in connection with standard full flange contour, as determined by gauge for measuring steel wheels to restore contour, M. C. B. sheet C-1, also base of limit groove must not be less than 29½ in. in diameter; in no case shall a charge or credit for service metal be made in excess of 1½ in."

It is also recommended that the present recommended practice gauge for measuring steel wheels to restore contour, as shown on M. C. B. sheet C-1, be advanced from recommended to standard practice.

The minimum diameter of base of limit of wear of grooves of wrought-steel wheels should be added to sheets as follows, and arrangements have been made accordingly:

M. C. B. sheet 25 ..... Not less than 29½ in.
M. C. B. sheet 25A ..... Not less than 32½ in.
M. C. B. sheet 25B ..... Not less than 34½ in.

Recommendation has been made by one of the companies manufacturing steel wheels that our specifications require wheels to be machined exact to diameter. Your committee can see no justification for this added expense, together with the loss of service metal, which is, from the standpoint of wear, the most useful in the wheel. The recommendation, therefore, is not concurred in.

Recommendation has been made by certain of the manufacturers of wrought-steel wheels that the 38 in. wheel be dropped from our standards. Replies to circular of enquiry indicate that the number of such wheels used is small and that their use is being discontinued as a general practice. It is, however, necessary to use wheels of this diameter in certain cases under motor cars in order to afford proper clearance between motor housing and track. While the use of the 38 in. wheel should be discouraged in the interest of keeping down the number of sizes that have to be carried in stock, we feel that, as it is a recognized standard of the association, it should be allowed to remain among our standards as long as there is need for wheels of this diameter.

It appears to be desirable to revise and amplify the recommended practice of this association for mounting wheels and the following is submitted with recommendation that it be adopted in place of the present recommended practice for mounting wheels:

1. Standard table of mounting pressure:

**Mounting Pressure in tons.**

| Axle. | Wheel seat diameter. | Cast iron wheels. | | Steel Wheels. | |
|---|---|---|---|---|---|
| | | Minimum | Maximum | Minimum | Maximum |
| A | 5⅛ in. | 30 | 45 | 45 | 60 |
| B | 5¾ in | 35 | 50 | 50 | 70 |
| C | 6½ in. | 40 | 60 | 60 | 80 |
| D | 7 in. | 45 | 65 | 65 | 85 |
| E | 7⅝ in. | 50 | 70 | 70 | 95 |

2. Wheels having flanges worn so as to take limit gauges for remounting cast-iron wheels shown on M. C. B. Sheet 16-A shall not be remounted.

3. The thickness of flanges of wheels fitted on the same axle should be equal and should never vary more than 1/16 in.

4. In mounting of wheels, new or second-hand, the standard wheel mounting and check gauge should be used in the following manner:

After one wheel is pressed into position, place the stop A or B of the check gauge against the inside of the flange of the wheel, with the thinner flange with the corresponding tread stop C or D against the tread of the wheel. Press the other wheel on the axle, until opposite tread stop comes in contact with the tread of the corresponding gauge point E or F, in contact with the outside of the thicker flange.

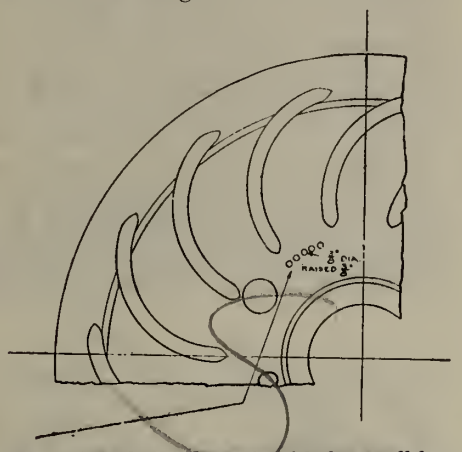
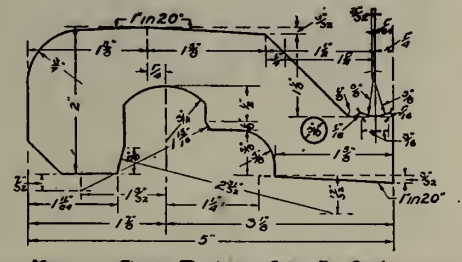
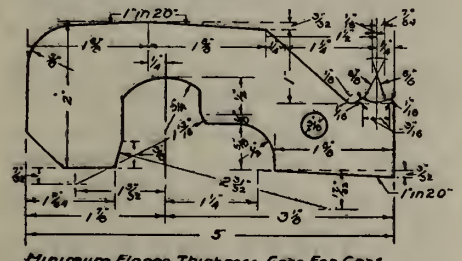


Fig. 3. Wheels will be made with five small lugs cast on the hub. When taping the wheel a sufficient number of these lugs are to be cut off, allowing the proper number to remain to represent the tape size. Under no circumstances are any of these lugs to be cut off after the wheel is received from the foundry. These instructions are for new wheels coming from the foundry.



Maximum Flange Thickness Gage For Cast Iron Wheels and Maximum Flange Thickness, Height and Throat Radius Gage For Solid Steel and Steel Tired Wheels.



Minimum Flange Thickness Gage For Cast Iron Wheels and Minimum Flange Thickness, Height and Throat Radius Gage For Solid Steel and Steel Tired Wheels.

Figure 4.

5. The wheel seats on all axles must be turned to uniform diameter throughout the entire length of each wheel seat and must be smooth and free from ridges, so as to provide even bearing for the wheel fit throughout. The mounting of wheels on axles having the wheel fit tapered is not permissible. The wheels must also have a straight bore, with the exception of the chamfering, for not more than ⅜ in. at the back hub face which may be allowed to facilitate application to axles.

6. Wheels should be mounted centrally on the axle. All axles should be center punched and some form of gauge be used to measure the location of the wheel from this center punch mark. The central mounting of wheels is necessary, in order to secure proper running of the wheels and to prevent hot boxes.

7. Wheels should ordinarily be fitted to (word "used" eliminated) axles and not axles fitted to the wheels. It is usually unnecessary to turn the wheel seat of second-hand axles unless they are found a tapered fit.

8. In mounting, either new or second-hand wheels, care should be used to see that the wheels are of the same diameter. In the case of new wheels, the wheels should be taped, to check the tape size marking, and, in no case, should wheels of different tape sizes be applied to the same axle.

9. The alignment of axle lathe, the trueness of the centers and the jaws on boring mills should be checked frequently in order to ensure proper mounting of the wheels.

10. While the wheels are being bored the high spots on the flange should be marked, and, in mating, the high spots should be put opposite low spots on the mate wheels.

The following is the letter from the American Railway Engineering Association referred to in the report:—Contour of chilled car-wheels and throat clearance for frogs, guard rails and crossings. Referring to your letter of April 20, 1917, referring back to this association the question of widening of the flange of the wheels as suggested by the wheel manufacturers' committee. This topic has been under consideration by the American Railway Engineering Association Track Committee, and the following report is made thereon by this committee, and is transmitted to you for your information: "'The track committee is willing to agree that the flanges can be increased, as recommended by the chilled car wheel people, without any serious detriment from a track standpoint, provided:

"'1. That the wheels are in all cases accurately mounted to 3/16 in. additional spread gauge.

"'2. That the allowable flange wear before wheels are removed be changed so that wheels will be removed when the flange is worn to within 3/16 in. of the present limit of removal.

"'3. That more care be used in matching wheels on any given axle, on account of the reduction in play and the corresponding reduction in compensation from coning.

"'4. That this flange width be confined to flanges of four-wheel freight car trucks.

"'5. That this conclusion on the part of the track committee be not construed as an invitation to increase the axle load.

"'With the above provisions, it is believed that it will be unnecessary to make any difference in the width of flangeway of frogs and crossings, or change the present method of track construction.'"

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**Locomotive Repair Costs.**—C. A. Gauvreau, M.P. for Temiscouata, Que., asked in the House of Commons recently, "Is the government, or the Minister of Railways, aware that the amount for repairing a locomotive at the Canadian National Rys. shops at St. Malo, Quebec, is five times higher than it was at the Riviere-du-Loup shops, before the machines of the latter were transferred to St. Malo?" The Minister of Railways replied: "Neither the Government or the Minister of Railways has any such information."

# Design and Maintenance of Locomotive Boilers.

The committee, of which C. E. Fuller, Superintendent Motive Power and Machinery, Union Pacific Rd., was chairman, reported as follows:—The association adopted the following resolution in connection with last year's report: "That the report of the committee on design and maintenance of locomotive boilers be accepted and the committee continued and that the subject of combustion chambers be referred to the same committee." Forty-five roads have replied to questions contained in this year's circular, from which the committee presents the following report:

Water Glass Fittings and Mountings. Out of 45 roads making replies, 27 use tubular water glass, 14 the reflex, and 4 report using both. Four roads report having made comparative tests of the tubular and reflex glasses with the following results: One states that the reflex water glass, after test, was found no better than tubular; another, that the tubular with a protector was found more satisfactory; another, that the tubular has less visibility but lower maintenance cost, and another that after trial the reflex glass was regarded as unsatisfactry. These tests in a general way appear to favor the tubular glass, although it is conceded that both types of glass have their adherents, and it is likely that local conditions have a great deal to do with this question. The committee thinks that no valid objection can be taken to either type of glass, where properly installed and maintained.

Regrinding of reflex glasses was reported as successful by 4 roads, with fair results by 2, and without success by 3. The cost of regrinding was reported as varying from 7½c. to 45c. a glass. The principal thought to be extracted from the replies is that regrinding reflex glass is of questionable value.

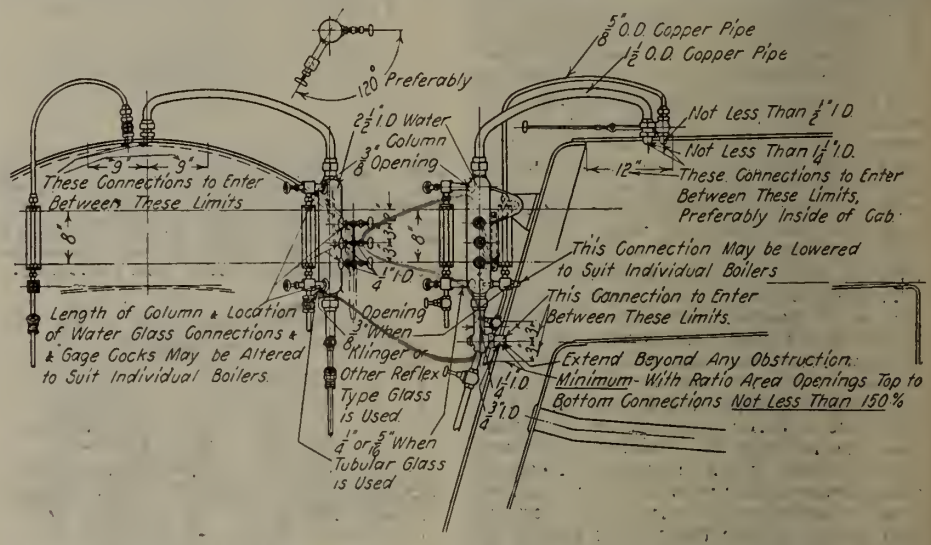
Specifications for use in the purchase of gauge glasses were reported as not used by 30 roads and in use by 6; 4 of which use specification prepared by the New York Central Rd. The Pennsylvania Rd. also has a specification which has been adopted by the Union Pacific. A test of the various bullseye tubular and reflex glass by the digester and dipping methods will readily convince the observer of the necessity for such a specification, and the committee recommends that the committee on specifications for materials be requested to prepare a specification for gauge and water glasses for this association.

No trouble was reported from packing washers expanding, and clogging the passages. The precautions taken include care in packing, the use of a proper design of connections and repacking at regular intervals, if necessary.

Results of experience with water columns were reported as follows: One road regards the water column as superior to all other arrangements; 11 state that it furnishes true readings 6 state that it is satisfactory; 5 regard it with disfavor, while 5 state that it is not satisfactory; one member stating that he believes it does not give true readings, and another states that there is a siphon action when gauge cocks are open, which causes the readings to vary as much as 5 or 6 in. from the true water level in the boiler. In commenting on the latter statement, it is the belief of the committee that some other unusual and undesirable condition existed, such as insufficient opening or proximity to a water tube.

With the usual types of modern wide firebox boilers, having sloping back head, and generally provided with arch tubes admitting large volumes of steam into the back water space, it is the belief of your committee that, in order to obtain more accurate readings, the application of gauge cock and water glass fixtures deserves careful consideration, and your committee believes that it should at this time present as recommended practice of the association the arrangement of water glass and gauge cock as developed and approved by the committee on standards, at Washington, as illustrated by its drawings X-100, which is reproduced in this report.

Beading Tools for Boiler Tubes or Flues.—From a comparison of the drawings of beading tools submitted, it appears that the essential detail of the tool is the throat or surface from which the bead is formed. In some cases the tool is shown straight in the circumferential direction of the flue. The curve in the radial plane of the tube determines the radius of curvature and the size of the bead. In most cases a slightly larger radius for beading tools is used on superheater flues than on ordinary boiler tubes. In some cases the same tool is used for both classes of tubes. Some use a slightly different tool for maintenance of tubes than that used in resetting new work, thus making at least four different beading tools.


5" O.D. Copper Pipe
1½" O.D. Copper Pipe
120° Preferably
2½" I.D. Water Column
3" Opening
Not Less Than 1" I.D.
Not Less Than 1¼" I.D.
12"
These Connections to Enter Between These Limits, Preferably Inside of Cab
9"
9"
These Connections to Enter Between These Limits
This Connection May be Lowered to Suit Individual Boilers
This Connection to Enter Between These Limits.
Length of Column & Location of Water Glass Connections & Gage Cocks May be Altered to Suit Individual Boilers
Opening 3" When Klinger or Other Reflex Type Glass is Used
1" or 5/16" When Tubular Glass is Used
Extend Beyond Any Obstruction. Minimum With Ratio Area Openings Top to Bottom Connections Not Less Than 150%

Arrangement of water glass and gauge cock, developed by committee on standards, Washington, D.C.

For beading the regular boiler tubes, the radius of curvature reported for beads varies from ⅛ to 11/64 in. The radius of curvature of the throat of the tool in the other direction is usually made the same for boiler tubes and superheater flues, and varies from ⅝ to 2 in., although, as stated above, some were made straight. The committee thinks that there is no essential reason for all of this variation, except the variation in the size of the bead, which is a function of the thickness of the flue. Reports indicate that practically all beading tools are maintained to size by regular periodical checking with standard gauges.

In regard to the method of expanding flues, there is considerable variation in the details of operations. Most roads use both the flue roller and the prosser expander, and follow closely in details of tools and in practice the recommendations of the Locomotive Superheater Co. The reports indicate a wide variation of practice without any apparent necessity for such variation, and your committee appeals to the association for its views as to the advisability of preparing and submitting a set of tools and operations for setting, beading and maintaining tubes and flues, the same to be presented next year to the association as recommended practice.

Proper Location of Blow-Off Cocks in Locomotive Boilers, and Reasons Therefor.—The number of blow-off cocks in use per locomotive varies from one to four. Some report blow-off cocks located on the belly of the cylindrical part of the boiler, but most of them are located on the water legs about the firebox. Some have one cock on each side of firebox with one on the throat sheet at the center. Some have only two blow-off cocks, one on each side of firebox, sometimes located near the center of the side, and possibly more frequently near the front corners. Two roads reported the use of a single blow-off, located on one side at the back corner of firebox, and connected to a perforated pipe lying along the mud ring in the back water leg under the fire door. Quite a number report the use of one blow-off cock located over the mud ring at the center of the throat sheet. The number and location of blow-off cocks is determined to a considerable extent by the kind and quality of water used for boiler feed. Very few failures, or troubles, with any of the blow-off valves in use were reported. Some failures occasionally occur from pieces of staybolts lodging in the valve. Trouble from leaking has been ascribed to lack of care in maintenance.

To reduce the danger of obstruction from scale and sludge, a great many blow-off valves are provided with some form of strainer. One road places the valve about 12 in. above the mud ring, with the idea of leaving the scale in the water leg below the valve when blowing off.

The practice of blowing off on the road is employed only by roads where water conditions make such practice necessary. Of 42 roads reporting, 22 do not open the blow-off cock on the road, and 8 only occasionally, or in emergency. The recommended essentials in construction to permit blowing off and closing on the road are; a valve rigging designed to be

operated from the cab, or from a safe position on the running board, the valve should be located so as to be in view of the operator when blowing off, the valve should be designed so that the boiler pressure will assist in closing and hold it to its seat. An auxiliary valve should be provided that can be closed in case the main valve fails. There should be a strainer to prevent scale and other obstructions from lodging in the valve. The valve should open full, have straight full passage, and be rigid in construction and positive in action.

Combustion Chambers.—The number of engines reported with combustion chambers was 2,152, with chambers varying in length from 5 to 88 in. Of these about 300 are reported with back flue sheet welded in place while the others are riveted. Out of 23 roads reporting combustion chambers, 18 use a transverse weld across the crown sheet at the rear, but 6 of these express a preference for continuous crown sheets, and the intention to apply continuous crowns on renewals.

One road with about 200 combustion chambers, is of the opinion that the cost of their maintenance overbalances any fuel economy obtained from their use. One road states that the combustion chamber permits of construction of longer boilers than otherwise would be practical. Another, without definite tests, can see no advantage in the combustion chamber over those of other designs. Three believe that flue troubles are reduced from the application of combustion chambers, and 11 believe that fuel economy is obtained from their use.

Troubles reported from combustion chambers include: the collection of cinders in the chamber resulting in the warping of sheets. Six have reported trouble from cracks in the throat sheets, one reports trouble from broken stays on long combustion chambers, which was corrected by the application of flexible stays, another reported trouble in keeping the water space under the chamber free from mud, one is of the opinion that the trouble from combustion chamber increases the cost of maintenance, ten report no troubles in maintenance, and one reported some trouble due to faulty design, and one says the flue sheets are easier to apply with combustion chambers. Six roads reported experience with bridge walls, three of which were of the opinion that they are desirable and three were not. One thinks a bridge wall should be used only when necessary.

One road is of the opinion that the combustion chamber is essential in aiding the distribution of weight on large engines, one that it has little effect, and 14 consider that it is not essential for that purpose. It is the committee's view that on large modern engines a combustion chamber is practically a necessity, as a function of proper wheel base and weight distribution, proper length of tubes and superheater equipment, and that the additional direct heating surface of the combustion chamber added to the firebox heating surface is of distinct value in aiding evaporation, and further that if the use of combustion chambers is attended by increased maintenance, this has now become a necessary evil attending the large locomotive, and that these so-called evils can be largely reduced by proper design and proportion.

The minimum distance from crown sheet to inside of wrapper sheet is given at 25 in. by one, 23½ in. by another, and 20 in. by one. Some vary the distance with the size of the boiler, two giving the rule of making it equal to 15% of the diameter of the largest course; four endorse the standards followed by the locomotive builders, and eight have no standard practice.

In regard to lowering the crown sheet at the expense of the heating surface, 14 do not consider it justifiable, while two roads do, if necessary to maintain the standard minimum, and four state that it would depend upon the design. The recommended minimum distance between bottom flues and waist sheet varies from 2 in. to 7 in., and one recommends 10 in., with combustion chamber.

To lessen the entering of water into the dry pipe, 14 report the use of no special devices for this purpose, while four use a special throttle with inlet at the top of dome.

Three roads report on the test of special devices for promoting water circulation in boilers, two of which gave unsatisfactory results, while one claims economy by the use of the Harter circulator plate for promoting water circulation in boilers. The latter consists of a horizontal baffle plate, extending from side to side of boiler, and extending to approximately 2 ft. from the front flue sheet to within 6 in. of the back flue sheet. It also has a series of 2 in. tubes at intervals along each side to conduct steam formed beneath the baffle plate to the space above same. The Nicholson thermic syphon is also referred to as a water circulating device.

Conclusions and Recommendations. — A review of the replies received to this circular fails to reveal much that is new. Apparently little out of the ordinary is being planned at the present time to develop locomotive boiler design. Briefly, the results of the evidence obtained on the different subjects of this circular are as follows:

Tubular water glasses suitably protected against accidents appear to be more popular than the reflex. Regrinding of reflex water glasses appears to be of doubtful value.

Beading tools in use are quite similar, and could probably be easily standardized if such a result is considered desirable. The same is true of the prosser expanders. The only variations apparently necessary are those required to care for the different thicknesses of tube sheet and the different thicknesses and diameter of tubes.

The number and location of blow-off cocks required per locomotive boiler depends on the conditions of service, and the quality of feed water used.

Combustion chambers, in general, improve combustion, and promote fuel economy, also tend to lessen tube troubles, but are subject to troubles in maintenance unless care is taken in their design.

In regard to water and steam space above the crown sheet, no evidence was submitted that would warrant the drawing of any definite conclusions thereon.

Your committee recommends the presentation of a specification covering tubular and reflex water glasses, and bulls-eye glasses for lubricators.

The committee endorses water glasses and gauge cocks applied to modern boilers in accordance with method approved by committee on standards.

# Installation, Operation, Care and Maintenance of Superheater Equipment for Locomotives.

The committee, of which H. R. Warnock, General Superintendent Motive Power, Chicago, Milwaukee & St. Paul Ry., was chairman, reported as follows: Before outlining the recommended practice on this subject, we will present an item that received some consideration at one of the committee meetings, and about which it was not considered that, on account of the contradictory results obtained, it should be included in the recommended practice. It is the matter of providing swabbing on piston rods. Very little concrete data were furnished the committee relative to the value of maintaining swabbing on piston rods, only one road reporting at length on this subject.

This road has been making a study of the value of swabbing on different types of piston-rod packings, the identity of which packings is withheld. The information that has been reported is shown in the accompanying table. On the 5 in. diameter rods considerably better service was obtained from packings without swabs. This was true in the first three types of packings mentioned, but on the D packing there was a slight difference favorable to the swabbing. On the 3¾ in. diameter rods the results are in support of the use of swabbing when we consider the results as a whole, but it will be noticed that exceptionally good service has been obtained from some of the packings without the use of swabbing. The results do not strongly support the opinion that piston-rod swabbing is essential to good service and, on account of the limited information that has been furnished along this line, your committee hesitates to make recommendation either for or against the use of swabbing.

**Proposed recommended practice for installation, operation, care and maintenance of superheater equipment for locomotives.**

**Installation.**—When parts are received from manufacturers they should be coated with some protective coating and stored under shelter until used. Care should be taken to see that the wooden protection blocks over ends of units and joints in headers are in place and used.

In the installation of the header the perfection of the joints should be thoroughly established, and care exercised to see that the header is placed in a level position before it is finally secured to the boiler. The same care with reference to the condition of the ball joints on the units and their seat in the header should be exercised. It is recommended that all ground joints should be bolted in place, metal to metal, without any medium other than a coating of oil to bring the joints to set without causing any undue friction.

Bolts, either heat treated or of special steel, should be employed in securing the units to the header.

Care should be exercised to see that the operating cylinder is properly located on the damper shaft so as to give the

piston sufficient movement to provide the proper opening for the dampers.

In closing the opening around the steam pipe, where it passes through the smoke box, a fibrous packing or cement should not be used. A metal covering should be used in such a manner that it can be fastened both to the smoke box and to the steam pipe. See exhibit A for suggestion of two methods that have been successfully used for this purpose. After the superheater and steam pipes are completely placed and hydrostatic test is applied, if any ball joints are found leaking they should be taken out and reground, as tightening a bolt will not repair an imperfect joint.

After superheater header and units, piston and valves have been applied, the throttle valve should be blocked down and steam test blown back through steam chest and superheater units. When these parts become heated, tighten all joints.

When superheaters are installed some provision should be made for supplying a limited amount of steam for use when drifting.

A limited number of pyrometers should be applied to superheater locomotives on each division for the educational value they would possess.

When superheaters are applied to existing equipment the front end door should be made sufficiently large to permit working to advantage in removing or applying units. It is recommended that the clear opening be 42 in. in diameter. This dimension can easily be arranged on new locomotives.

**Operation.**—Locomotives equipped with superheaters should, in general, be operated in the same manner as locomotives using saturated steam. The cylinder cocks should normally be open when the locomotive is standing under steam, and when the locomotive is started they should remain open until dry steam appears. In starting a superheater locomotive, the reverse lever should initially be placed for full travel of the valves, and at all times the water level in the boiler should be such that there will be no possibility of water being carried into the superheater. Water carried into the superheater will be evaporated into saturated steam or steam with a low degree of superheat, seriously affecting the economies available through proper operation; also water carried into the superheater may flash into steam after the throttle has been closed, placing the locomotive to that extent beyond the control of the locomotive man. Water carried into the superheater in quantities sufficient to reach the valves and cylinders will remove the lubrication from these parts and may result in knocking out cylinder heads or other damage.

Superheater locomotives should be handled only when the air brakes are in operative condition.

It is essential that the oil supply for the lubrication of the valves and cylinders on a superheater locomotive should be constant, as the high temperature will cause serious damage to these parts if there is an interruption of their lubrication. When locomotives are not equipped with drifting valves the throttle should be slightly open when drifting, in order to avoid the suction of hot gases into the steam chests and cylinders. The position of the superheater damper can be determined by observing the position of the counterweight attached to the damper shaft, and the engineman should know that the damper is wide open when steam is being used.

**Care and Maintenance.** — At regular periods, and preferably when the monthly Federal inspections are made, there should be a thorough inspection of all parts which come in contact with the fire or with the products of combustion. There should be a careful inspection for steam leaks, and the entire front end arrangement should be carefully examined.

When the locomotive receives this periodical inspection, each flue in the boiler must be thoroughly cleaned by blowing out with compressed air supplied through a pipe of sufficient length to extend entirely through the flues; the flues also should be cleaned whenever necessary between the periods when the periodical inspections are made.

At the time of the periodical inspection, the superheater damper should be connected to the shop steam or air line, in order that the damper may be operated and the rigging checked for lost motion and the damper opening also checked; it should also be known that the damper piston travels through the full stroke and makes a steam-tight joint against its seat.

The special tools recommended by the Locomotive Superheater Co. for installing and maintaining superheaters should be employed.

When, for any reason, superheater units are removed from boiler they should be tested before being returned, with a cold water pressure of at least 20% in excess of nominal boiler pressure.

Unit bands and supports should be inspected whenever units are removed, and renewed if necessary, to ensure units always being properly supported and in correct relation to the flues.

When replacing superheater units, bolts should be renewed when there is any evidence of deterioration either in the condition of the thread or worn or pitted condition of the bolt. In all cases, a new nut should be applied and used as the pulling nut in setting the unit in place. An old nut can then be applied as a locking feature after the unit has been properly seated.

In regrinding the ball joint of the unit and the socket joint of the header, the original contour of these surfaces should be maintained.

After removal of the units, seats should be protected with a protecting coating and covered to prevent injury to seats, and entrance of foreign substances into unit pipes.

All dirt should be removed from the top of the header or T bolt slots before the superheater is reassembled.

**Comparative merits of hydrostatic and** force-feed lubrication for locomotive cylinders and steam chests and best method of application.—The committee gave this matter considerable study, and for the reason that there is no definite information available on which to base conclusions, is unable to make any recommendations at this time. The committee proposes, if continued, to further study the subject and outline a programme of tests to be followed on several different railways, the data obtained from these tests to furnish a basis for drawing some definite conclusions as to the relative value of hydrostatic and force-feed lubrication.

**Economical diameter of piston valves** of superheater locomotives, with recommendation for standard practice in connection with various cylinder diameters. This question has been studied at quite some length, and a number of roads reported to the committee relative to the dimensions of their leading locomotives for passenger, freight and switching services. Among the items reported were the valve diameter, the cylinder diameter, the stroke of the piston, diameter of drivers, area of steam ports, maximum cut-off, port opening at said maximum cut-off, and several other items tending to work out a relation between the valve

**Comparison of service of piston-rod packings as influenced by the use of swabbing on piston rods on superheater locomotives.**

| Kind of packing | ITEMS | Passenger service. 5-in. diam. rods. Swabbing. With | Without | Mallet locomotive h.p. engine 3¾-in. diam. rods. Swabbing. With | Without |
|---|---|---|---|---|---|
| A | Number of rods equipped | 4 | 2 | 3 | 3 |
| | Number of sets renewed | 16 | 4 | 3 | 1 |
| | Average mileage | 7 240 | 20 247 | 9 002 | 18 850 |
| B | Number of rods equipped | 3 | 3 | 3 | 3 |
| | Number sets renewed | 13 | 8 | 3 | 2 |
| | Average mileage | 6 663 | 8 944 | 14 004 | 12 028 |
| C | Number of rods equipped | 3 | 3 | 3 | 3 |
| | Number sets renewed | 6 | 5 | 7 | 22 |
| | Average mileage | 14 359 | 18 648 | 2 384 | 2 007 |
| D | Number of rods equipped | 2 | 2 | 2 | 2 |
| | Number sets renewed | 5 | 4 | 9 | 6 |
| | Average mileage | 9 310 | 8 679 | 3 503 | 2 390 |
| Total | Number rods equipped | 12 | 10 | 11 | 11 |
| | Number sets renewed | 40 | 21 | 22 | 31 |
| | Average mileage | 8 379 | 13 357 | 5 329 | 3 271 |

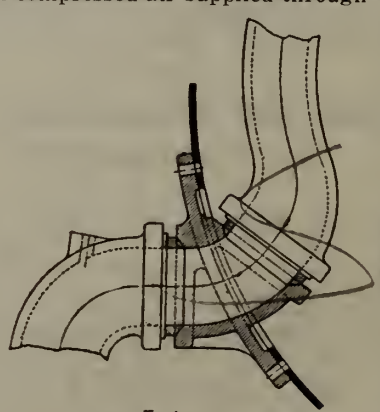


Fig 1

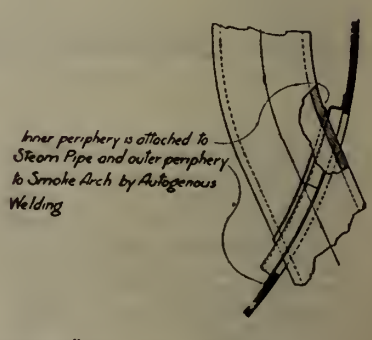



Fig 2

Exhibit "A"

diameter and steam demand of the cylinders.

Among the variables encountered are the travel of the valve, the port openings, the cross sectional area of the various elements of the entire steam passageway between the boiler and the cylinder. By giving this subject a little thought it will be appreciated that no one item can be fixed as long as there are any variables to take into consideration. If such items as port area and valve travel are fixed, then the diameter of a valve can be ascertained that will supply the proper amount of steam for a certain piston displacement.

For the above reasons, we are unable to make recommendations at present.

# Car Construction Committee Report.

The committee on car construction, of which W. F. Kiesel, Jr., Mechanical Engineer, Pennsylvania System, was chairman, and of which J. Coleman, Assistant to General Superintendent Motive Power and Car Departments, G.T.R., and W. J. Robider, General Master Car Builder, C.P.R., were members, reported on questions referred to the committee, suggesting changes to existing standards and practice. with reasons therefor, as follows:—

**Pressed Steel Journal Boxes.**—An opinion was requested whether the application of pressed steel journal boxes in repairs constituted wrong repairs.

Sheets 8 and 8-A, standard journal box for journal 5 by 9 in.; sheet 11, standard journal 6 x 11 in., contain notes per-and sheet 12-B, standard journal box for journal 6 by 11 in., contain notes permitting the use of cast iron, malleable iron, pressed steel, or cast steel, provided all the essential dimensions are adhered to. In the opinion of your committee the bottom lugs on these boxes are an essential part of the box, both in strength and location, for all trucks which depend for their integrity on the proper holding power of the bottom tie bars, but that these bottom lugs are not an essential part of the box for trucks with cast steel or other sides frames which do not require the bottom tie bar.

Recommendations.—1. Add the following note to each sheet showing standard freight car journal boxes: When used with side frames of such design that the bottom tie bar is omitted or is not an essential strength member for carrying the load, the bottom box lugs may be omitted. When used in connection with other side frames, the bottom box lugs must be equivalent, both in location and strength, to those shown.."

2. Add the completed notes to all other freight car journal box drawings.

**Automobile Side Doors.**—The committee's 1919 report made reference to a request of the General Motors Corporation that 10 ft. double side doors with movable post should be used on all box cars. This request has been renewed, and your committee has adopted the following resolution, and recommended sending it to the American Railroad Association's executive committee: "That the committee is opposed to any consideration of the rebuilding of existing cars providing them with wide side doors, as the framing will be inadequate, unless entirely rebuilt, and does not recommend that all box cars should be built with wide doors to facilitate the loading of automobiles, for the reason that the cost of coopering such cars will be approximately twice the cost of coopering a car with 6-ft. doors. The failures of double doors in service will result in a very considerable increase in the number of cars out of service for defective doors. The first as well as the maintenance cost will be increased. For the reasons given above, the cars with wide side doors should be considered as special cars; only to be provided in such numbers as traffic conditions warrant. It is recommended that the association's executive committee endeavor to bring about very close co-operation between railways and manufacturers who ship raw materials or parts to automobile manufacturers, to the end that orders for cars for such shipments shall specify that automobile cars are to be furnished to as great an extent as available. This arrangement will automatically return to the automobile manufacturers many automobile cars which are now being sent elsewhere."

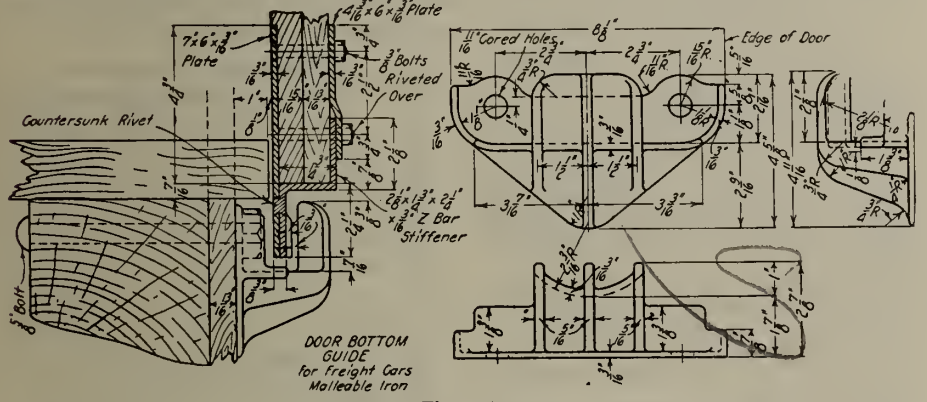



Figure 1.

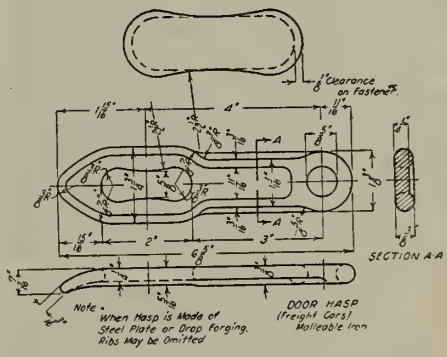

Clearance on fastener
SECTION A-A
Note.
When Hasp is Made of Steel Plate or Drop Forging, Ribs May be Omitted
DOOR HASP (Freight Cars) Malleable Iron

Figure 2.

**Car Doors and Fixtures.**—The subject of box car doors has been brought very prominently to the committee's attention, in many different phases, and demands immediate, decisive and constructive action by this association. A number of communications relating to defective door fastenings have been received, the causes for complaint being broken door fastenings, door guides fastened with lag screws, or fastened with bolts in such a way that guides could easily be removed.

Standard sheet 30, revised in 1914, made several changes from previous practice, as follows:

1. Increased the number of bolts holding door locks from 2 to 3, the third bolt being placed on the side of the car where it would support the lock against tipping.

2. Provided a wrought iron strap extension to the door hasp fastener, making it 24 in. over all.

3. Increased the height of lip of bottom door guides from 1 to 1¾ in., increasing the depth of bottom Z-bar to correspond.

It is the observation of the committee that car doors equipped with door fastenings, bottom Z-bar and door guides in accordance with, or equivalent to, the designs shown on sheet 30, are very seldom found defective as to these parts. There are, however, many thousands of cars in service which have no metal protection on the bottom edge of door, so that the corners of the door decay, and may readily be forced over the guides and opened at the back edge without breaking the seals. There are thousands of cars in service with hasp cored so that the metal is barely ⅛ in. thick, and with the door lock, consisting of a small malleable casting, fastened on the face of the wooden door stop with only two bolts and the door hasp fastener or staple, consisting of a small hook, fastened with only one bolt. It is the usual condition of cars equipped with this small staple either to have the staple torn off or the front edge of the door broken off.

In 1914 the committee revised several of the important details on sheet 30, standard box car, outside hung side door, and submitted specification for reinforcing doors on existing box cars, which specification, however, was not adopted and when again submitted in 1916 was again rejected. Your committee believes that the complaints previously referred to in this report are legitimate, and that it is our duty to remove the causes for them, and, if this is to be done, it is necessary that this association should adopt some form of specification governing the reinforcement of doors on existing cars. Your committee submits, for the third time, specification for this purpose, which has been amplified to include, among other things, a Z-bar at the bottom of the door. It is believed that most of Mr. Crawford's complaint in regard to opening of doors without breaking seals comes from cars having doors without bottom Z-bar protection, so that the doors decay at the corners and can readily be lifted over the bottom guides.

That portion of the loss which is made possible by the removal of bottom guides would be eliminated by the use of guides which cannot be removed when door is

in closed position, as called for by the specification submitted in 1914. Your committee is this year recommending one such design for addition to sheet 30. (See fig. 1.)

In submitting the new design of hasp a note is added that when the hasp is drop forged, or of steel plate, the ribs may be omitted. All-steel doors should have locks, hasp and fastenings considerably stronger than are being recommended on sheet 30, in view of the greater weight and inertia of such doors; but, as the all-steel doors are comparatively few in number, the committee feels that it is preferable to have the present standard designs of the association cover wooden doors only, including steel framed wooden doors, and let the all-steel doors be covered by special designs. The hasp provided for the all-steel doors should interchange with the American Railroad Association standard.

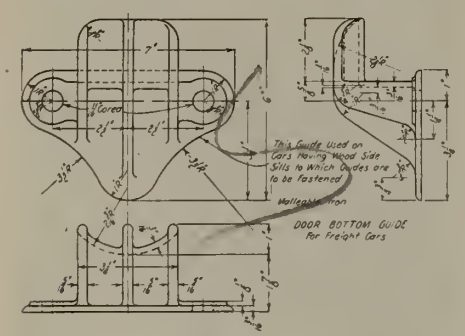



Figure 3.

Recommendations: The addition of notes in the present specification for complete new doors, as follows:

1. The adoption of the modifications of sheet 30, as described in this report.

2. Door starters should be provided to move the door 2 in. or more from its fully closed position.

3. Means shall be provided, where necessary, for forcing the door into its fully closed position.

4. Lumber used in the construction of doors shall not contain more than 5 per cent. moisture.

5. Door rollers must be carried on turned or cold rolled steel pins. Pins must be a driving fit in bracket or housing. Rollers must be drilled not more than 0.01 in. larger than pin, and outside of roller must be turned or ground so that it will be round and concentric with the bore.

6. If bottom supported door is used, the lap of the Z-bars, both top and bottom, shall be equivalent to bottom Z-bar, as shown on sheet 30. Rollers must conform to the above specification, and there shall be sufficient rollers provided so that door is always carried on at least two rollers.

7. That the specification for new car doors, adopted in 1915, and revised as above, should be extended to cover the application of complete new doors and door fixtures to existing cars.

The adoption of the following specifications for reinforcing existing car doors:

8. Top of door shall be reinforced by a 1½ x 1½ x 3/16 in. angle, or its equivalent, extending horizontally the full width of the door and not more than 12 in. from the top.

9. Bottom of door must be reinforced by 2⅛ x 1¾ x 3/16 in. Z-bar, or its equivalent, applied as shown in sheet 30.

10. Depending leg of Z-bar, or other construction which engages bottom guides, must not be less than 1¾ in.

11. There shall be not less than 4 bottom door guides on each side of car, located as shown on sheet 30, and of the same or equivalent design.

12. If the design of door is such that the removal of the door guide next to the back door post would permit the door to be pulled away from the car, then this door guide shall be of the same design as shown on sheet 30, or its equivalent, for this particular location.

13. Door hasp fastener shall be at least 24 in. long, the same as, or equivalent to, the design on sheet 30, fastened with not less than five ⅜ in. carriage bolts, with nuts on inside of door, and bolts riveted over. Fastener shall be of such design that hasp cannot be removed without removing bolts from fastener.

14. Door locks shall be secured by not less than two ½ in. carriage bolts through the closed door stop, and one additional ½ in. bolt through the side of car, with all nuts on inside and bolts riveted over nuts.

15. Closed door stop shall have 2 or more lips extending at least 1½ in. over the door, to support it against bulging outward. Where all-wood closed door stops are used, they should be strengthened against splitting, and should have at least 2 metal reinforcement brackets similar to closed door stop casting on sheet 30.

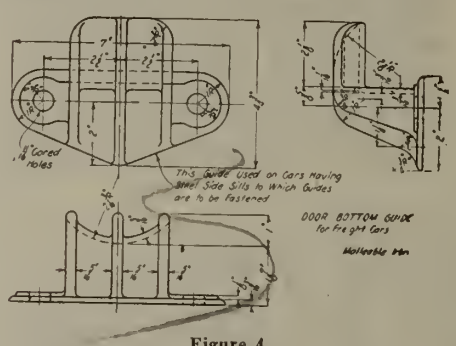



Figure 4.

16. Open door stops, if all-wood, should extend the full height of the door, and be strengthened against splitting.

17. Door starters shall be provided to move the door 2 in. or more from its fully closed position.

18. Means shall be provided, if necessary, for forcing the door into its fully closed position.

19. Lumber used in the construction of doors shall not contain more than 5% moisture.

20. Lap of door over door post shall not be less than 2½ in.

21. The proper clearance must be provided, so that ⅜ in. bulging of side of car will not interfere with the free movement of the door.

22. Door rollers must be carried on turned or cold rolled steel pins. Pins must be a driving fit in bracket or housing. Rollers must be drilled not more than 0.01 in. larger than pin, and outside of roller must be turned or ground so that it will be round and concentric with the bore.

23. Door must be designed and vertical clearance provided, so that under any service conditions there will be no binding of the door on account of vertical interference of door guides or track.

24. If the bottom supported door is used, the lap of the Z-bars, both top and bottom, shall be equivalent to bottom Z-bars, as shown on sheet 30. Rollers must conform to the above specification, and there shall be sufficient rollers provided so that door is always carried on at least 2 rollers.

Fastening of End Doors.—Resolution adopted by the Association of Railroad Chiefs of Police, communicated by R. S. Mitchell, Chief of the Secret Service and Police Section, recommending the fastening of small end doors on the inside before loading, and removal of seal fastening from doors that are so fastened. In 1913, the Master Car Builders' Association adopted as recommended practice, that end doors must be constructed that, when closed, they lock automatically from the inside of the car, thus avoiding the necessity of taking seal records. Sheet 30 shows a design of inside fastening which is not automatic, and your committee recommends that recommended practice adopted in 1913 should be advanced to standard, and that the design of inside latch shown on sheet F should be removed, and a note substituted that the fastening should lock the door automatically from the inside of the car. Your committee has made this recommendation to the executive committee, and has advised Mr. Trenholm accordingly.

Revision of Manual.—Your committee has modified certain details on sheet 30, and has added others for your consideration, as follows:

(a) Door hasp has been strengthened by the addition of ribs, and certain unimportant dimensions have been modified, which will greatly increase its strength. The new design is entirely interchangeable with the former design. (See fig. 2.)

(b) The bottom door guide has been considerably strengthened by the addition of ribs, and two designs have been shown, one for use where the guide is riveted directly to steel side sills, and the other, which is extended downward to provide more bearing surface for use when bolted against wooden sheathing. (See figs. 3 and 4). A note has been added that door guide bolts should be applied with nuts on the inside of the sill, and bolts thoroughly riveted over the nuts.

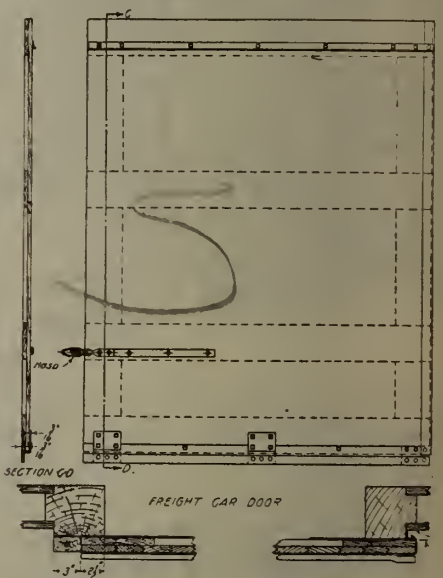



Figure 5.

(c) A design of burglar proof bottom door guide has been added, in which the guide is fastened with carriage bolts, with the heads inside, and the nuts applied with a socket wrench. When the door is in place the bottom Z-bar covers up the nuts so that the guide cannot be removed. This design has another advantage in having the fastening bolts directly behind the point where the strain

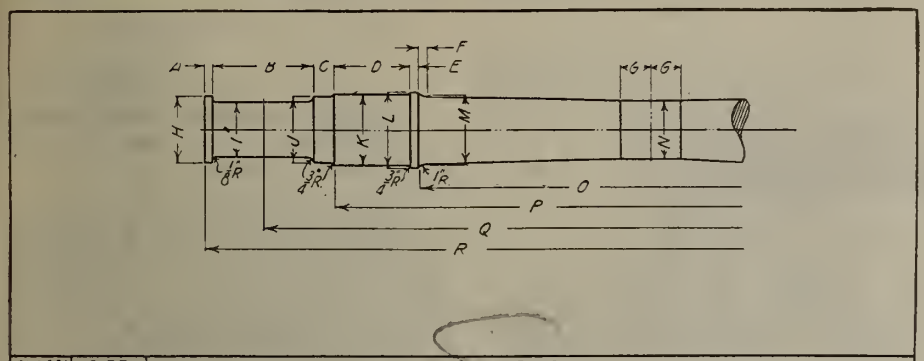
comes on the guide so that the tendency to pull guides downward and away from the side of the car will be much less than with designs where the bolts are lower down. (See fig. 1.)

(d) The construction of the door itself has been changed to eliminate four diagonal braces and add one more horizontal batten, the object being to reduce the cost of constructing the door, and at the same time provided greater stiffness and strength. (See fig. 5.)

(e) The section at C-D has been modified to show a distance of 1 in. from the face of the sheathing to the edge of floor at doorway, to permit the use of a spark strip at the back of the door. A detail has been added to show one form of spark strip; the door clearance provided will permit the use of other forms.

(f) The cross section at C-D, also the side elevation of the complete door, have been modified to show the additional of 5/32 in. steel plates, inside and outside, for the purpose of supporting the bottom Z-bar.

(g) The cross section through closed door post has been modified to reduce the width of the wooden door stop to 3 in. and increase the lap of the door over the door post to 2½ in. to provide better waterproofing.



| CLASSIFICATION OF AXLE | SIZE OF JOURNAL | DIMENSION A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 3¾"×7" | 5/8" | 7" | 2½" | 7 11/16" | 13/16" | 23/32" | 1½" | 4¾" | 3¾" | 4¾" | 5⅛" | 5½" | 4⅞" | 4¼" | 3'-10" | 5'-3" | 6'-3" | 6'-11¼" |
| B | 4¼"×8" | 5/8" | 8" | 2" | 7 11/16" | 13/16" | 23/32" | 1½" | 5¼" | 4¼" | 5¼" | 5¾" | 6⅛" | 5 7/16" | 4¾" | 3'-10" | 5'-3" | 6'-3" | 7'-0¼" |
| C | 5"×9" | ¾" | 9" | 2" | 7 11/16" | 13/16" | 23/32" | 1½" | 6⅛" | 5" | 6⅛" | 6½" | 6⅞" | 6 3/16" | 5⅝" | 3'-10" | 5'-3" | 6'-4" | 7'-2½" |
| D | 5½"×10" | ¾" | 10" | 2" | 7 11/16" | 13/16" | 23/32" | 3" | 6⅝" | 5½" | 6⅝" | 7" | 7⅛" | 6¾" | 5⅞" | 3'-10" | 5'-3" | 6'-5" | 7'-4½" |
| E | 6"×11" | ⅞" | 11" | 2¼" | 8¼" | 1¾" | ¾" | 3" | 7¼" | 6" | 7¼" | 7⅝" | 8" | 7 3/16" | 6 7/16" | 3'-6½" | 5'-2½" | 6'-6" | 7'-6⅜" |
| F | 6½"×12" | ⅞" | 12" | 2¼" | 8¼" | 1¾" | ¾" | 3" | 7¼" | 6½" | 7¾" | 8⅛" | 8½" | 7 13/16" | 6⅞" | 3'-6½" | 5'-2½" | 6'-7" | 7'-8¾" |

Fig. 6. Tabulation of Axles.

**Prevention of Grain Leaks and Retention of Grain in Pockets Behind Lining of Box Car.**—A number of communications were submitted, including statistics showing considerable loss, both on account of grain leaks between side sills and loose siding boards, and on account of pockets back of lining, which cannot be emptied without cutting the lining.

Recommendation: Section 10, of circular 8, issued by the Assistant Director, Division of Operation, U.S. Railroad Administration, modified as indicated in the text below, should be made standard:—"Where sheathing is nailed to the outside of sills it should be further held in place by angle iron, channel iron, or strap, securely bolted in place to ensure sheathing being held tight against side sill, to prevent grain leaks, bolts to have single nuts and be riveted over. The spacing of bolts shall not exceed 12 in. The preferable construction is to use dropper bar D-24, Jones & Laughlin catalogue, 0.84 lb. per ft. These reinforcing bars shall be located as near top of side sill as construction will permit. After the sheathing has been thus thoroughly secured the space between the ends of floor boards and sheathing shall be carefully filled with a plastic compound which does not become brittle in cold weather. It should then be further protected with triangular grain strips, not less than 3 in. by 3 in.

"When wooden lining is used it should have a space between floor and bottom of lining of about 2½ in. Where diagonal braces meet posts, thereby forming pockets, opening shall be provided in the lining of sufficient size to permit free passage of any grain that may possibly lodge behind wooden side linings. The vertical dimension of the opening for this free passageway above the point of pocket, formed by the intersection between post and brace, shall be about 2 in."

Note.—These recommendations are based on resolutions adopted by a joint conference of terminal grain weighmasters and committee on uniform grain weighing, of the National Scale Men's Association, at Milwaukee, Sept., 1918.

**Brine Dripping on Rail, Etc.**—Reports presented to the American Railway Engineering Association, on injury to signal equipment, bridges and tracks, due to brine drippings from refrigerator cars, indicate a necessity for definite action. The following rules, which are now recommended practice, should be advanced to standard:

1. All salt water drippings should be retained in the ice tanks and drained off at icing stations.

2. The total capacity of drain openings should not exceed the capacity of traps, and the capacity of both drains and traps should be sufficient to release all drippings within the time limit of icing the train.

3. The mechanism adopted for handling drain valves should be simple and positive, and so designed as to ensure closing the valves before hatch plugs can be returned to their places.

4. Salt drippings should be conducted from ice tanks through the regular traps and drain pipes.

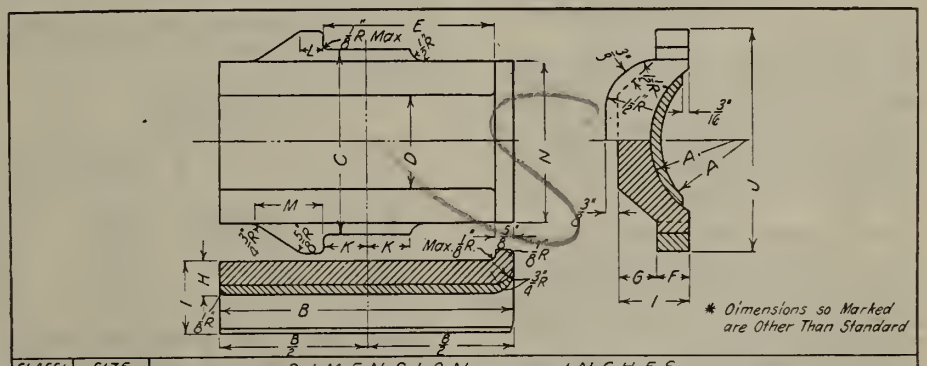
5. Paragraph F, of Interchange Rule 3, has been extended from time to time. It is recommended that no further extension be made, and that this rule be enforced beginning October 1, 1920.

After affirmative action on the above, refrigerator car owners should be advised.

**Minor Adjustments of Standards.**—On account of additions to standards at intervals of time by different committees, some of the present standards differ slightly in unimportant dimensions. It is, therefore, deemed advisable to establish uniformity.

Breakage of lugs on journal bearings has been reported, and strengthening of same has been suggested.

Journal box lids now standard are claimed to be unsatisfactory, and request was made to improve same.

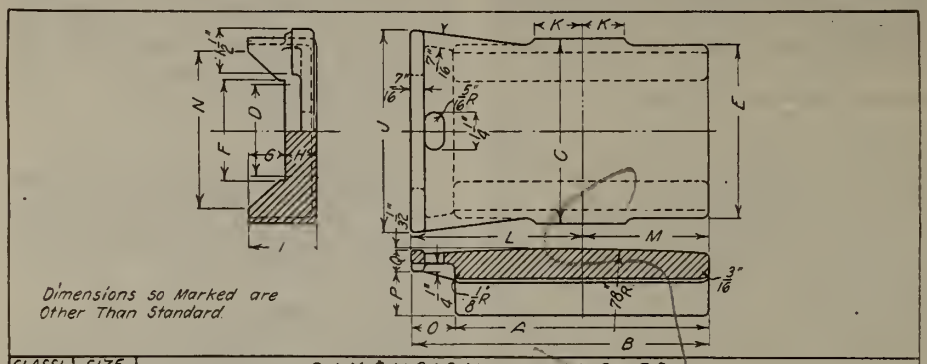



| CLASSIFICATION OF BEARING | SIZE OF JOURNAL | DIMENSION — INCHES A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 3¾×7 | 1 29/32 | 6¾ | 4½ | 2 | *4 | 7/8 | 1⅛ | 1 | 2 | 5½ | 1¼ | *½ | *1⅝ | 3¾ |
| B | 4¼×8 | 2 5/32 | 7¾ | 4⅞ | 2 5/16 | 4½ | *27/32 | 1 9/32 | 1 | *2⅛ | 5⅞ | 1¼ | *⅝ | *1¾ | 4⅜ |
| C | 5×9 | 2 17/32 | 8¾ | 5⅝ | 3⅛ | 5 3/16 | *1 1/32 | *1 7/32 | 1⅛ | 2¼ | 6⅞ | 1 7/16 | *11/16 | *2 1/16 | 4¾ |
| D | 5½×10 | 2 25/32 | 9¾ | 6⅛ | 3⅝ | 5 11/16 | 1 1/16 | 1 15/16 | 1⅛ | 2⅜ | 7⅜ | 1 7/16 | *¾ | *2¼ | 5⅜ |
| E | 6×11 | 3 1/32 | 10¾ | 7⅛ | 3½ | 6⅝ | 1¼ | 1½ | 1¼ | 2¾ | 8⅜ | 1⅞ | *13/16 | *2 7/16 | 6¼ |
| F | 6½×12 | 3 3/32 | 11¾ | 7⅝ | 4 | 7⅛ | 1 1/16 | 1 9/16 | 1⅜ | 3 | 8⅞ | 1⅞ | ⅞ | 2⅝ | 6½ |

Fig. 7. Tabulation of Journal Bearings.

Present axle capacities increase by steps, which can be made more uniform by increasing the capacity of the axle with 5½ x 10 in. journals from 38,000 to 40,000 lb., the present dimensions being such that the allowable stresses will not be exceeded. It was suggested to add another axle with 6½ x 12 in. journals, capacity 60,000 lb. and bearing, wedge and box to suit.

This committee intends that no existing cars should be marked up in capacity on account of this increased rating of axle D with 5½ x 10 in. journals, until they have received permission to do so from the American Railroad Association. When asking permission for this increased marking they shall present evidence that the trucks and cars are of a strength commensurate with the proposed increase in the load of the axle. In no case shall cars be changed by other than the owner.




| CLASSIFICATION OF WEDGE | SIZE OF JOURNAL | DIMENSION — INCHES | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
| A | 3¾x7 | *5⅜ | *6 9/16 | 4½ | 2 1/16 | 3¾ | 2¼ | 1 | ¾ | 1¾ | 5 | 1¼ | 3⅞ | *2 11/16 | 3⅝ | *1⅜ | 1 | 23/32 |
| B | 4¼x8 | 6⅜ | 7¾ | 4⅞ | 2 11/32 | 4½ | 2 9/16 | 1 1/16 | ⅞ | 1 15/16 | 5 | 1¼ | 4 9/16 | 3 3/16 | 4 1/16 | 1⅜ | 1 1/16 | 27/32 |
| C | 5x9 | 7⅜ | 8¾ | 5⅝ | 3⅜ | 5¼ | 3⅜ | 1 1/16 | 1 | 2 1/16 | 6¾ | 1 7/16 | 5 1/16 | 3 11/16 | 4¾ | 1⅜ | 1 5/16 | 23/32 |
| D | 5½x10 | 8⅜ | 9 13/16 | 6⅛ | 3 3/16 | 5¾ | 3⅜ | 1 3/16 | 1 | 2 3/16 | 6¾ | 1 7/16 | 5⅝ | 4 3/16 | 5 7/32 | 1 7/16 | 1 7/16 | 23/32 |
| E | 6x11 | 9⅜ | 10 13/16 | 7⅛ | 3 9/16 | 6⅞ | 3¾ | 1⅜ | 1⅛ | 2¼ | 7¾ | 1⅞ | 6⅛ | 4 11/16 | 6⅛ | 1 7/16 | 1 11/16 | 25/32 |
| F | 6½x12 | 10⅜ | 11 13/16 | 7⅝ | 4 1/16 | 7⅞ | 4¼ | 1½ | 1⅜ | 2⅞ | 8¼ | 1⅞ | 6⅝ | 5 3/16 | 6 7/16 | 1 7/16 | 1 31/32 | ⅞ |

Fig. 8. Tabulation of Journal Wedges.

The committee on axles, in their splendid report of 1896, did not specifically cover the locus of the points of application of loan for calculating the part of axle between wheel seats. In 1901 this was referred to in connection with a report on chemical composition of all steel car axles.

Frames above the journals of the same axle cannot spread more than 1 in., therefore, the calculations for diameters of axle sections between wheel fits should be based on length between center of journals plus 1 in.

The following may be considered a continuation of the 1896 axle report, the only addition being the assumed distance between load application:

$$\text{Allowable stress} = \frac{22{,}000}{1.26} = 17{,}460 \text{ lb.}$$

$$\text{Required diameter} = \sqrt[3]{\frac{W}{M} \times \frac{W}{S} \times \frac{32}{n}}$$

As given in the 1896 Proceedings.

Values for standard axles, based on distance between load applications of L (distance between centers of journals) plus 1 in.

| Axle. | Capacity lb. | L+1 in. | $\frac{M}{W}$ | $\frac{W}{9} \times \frac{33}{n}$ |
|---|---|---|---|---|
| A | 15,000 | 76 in. | 15.00414—.196X | 8.751 |
| B | 22,000 | 76 in. | 15,00414—.196X | 12.835 |
| C | 31,000 | 77 in. | 15.49821—.200X | 18.085 |
| D | 40,000 | 78 in. | 15.99228—.2035X | 23,335 |
| E | 50,000 | 79 in. | 16.48635—.2071X | 29.170 |
| F | 60,000 | 80 in. | 16.98042—.2106X | 35.003 |

Values for ratio (R) of $\frac{M}{W}$ at edge of cylindrical center portion, at inside of collar and at wheel fit 24 in. from center and arm of force (X) on which these values are based.

| Axle. | Near center. | | Inside of collar. | | At wheel fit. | |
|---|---|---|---|---|---|---|
| | X | R | X | R | X | R |
| A | 36½ in. | 7.85014 | 15¾ in. | 11.91714 | 14 in. | 12.23214 |
| B | 36½ in. | 7.85014 | 15¾ in. | 11.91714 | 14 in. | 12.23214 |
| C | 37 in. | 8.09821 | 16¼ in. | 12.24821 | 14½ in. | 12.59821 |
| D | 36 in. | 8.66628 | 16¾ in. | 12.58365 | 15 in. | 12.93978 |
| E | 36½ in. | 8.92720 | 19 in. | 12.55145 | 15½ in. | 13.27630 |
| F | 37 in. | 9.02622 | 19½ in. | 12.77112 | 16 in. | 13.55682 |

Resultant theoretical diameters based on above tables, and standard method of calculation. (Y=distance from center of axle.)

| Axle. | Near center. | | Inside of collar. | | At wheel fit. | |
|---|---|---|---|---|---|---|
| | Y | Diameter in. | Y | Diameter in. | Y | Diameter in. |
| A | 1½ in. | 4.096 | 24¼ in. | 4.707 | 24 in. | 4.748 |
| B | 1½ in. | 4.650 | 22¼ in. | 5.348 | 24 in. | 5.395 |
| C | 1½ in. | 5.271 | 22¼ in. | 6.050 | 24 in. | 6.108 |
| D | 3 in. | 5.870 | 22¼ in. | 6.647 | 24 in. | 6.709 |
| E | 3 in. | 6.386 | 20½ in. | 7.154 | 24 in. | 7.289 |
| F | 3 in. | 6.811 | 20½ in. | 7.646 | 24 in. | 7.800 |

Brake Power and Brake Beams.—An important question in connection with car design is necessary brake power. The present standard is that the brake power shall be 60% of the light weight of the car based on 50 lb. unit cylinder pressure. Cars in which the ratio of light weight to loaded weight is very low will then have a very low brake power, when cars are fully loaded. Cars in which this ratio is high have a relatively high brake power when cars are fully loaded. It is, therefore, deemed advisable to make a change, and to base the total brake power of the car on 40% of the sum of the light weight plus ¼ of the maximum allowable load, and to base this on 50 lb. unit cylinder pressure. This will serve to more nearly equalize the brake power on freight cars with average loads. The possible maximum per cent. of brake power for the lightest cars would be 75% of the light weight of car, based on 50 lb. unit cylinder pressure. The formulae for brake power will then be as follows:

$$0.40\left(\frac{(W-w)}{4} + w\right) = 0.1W + 0.3w.$$

but not more than 0.75w.

in which W=Loaded weight of car, maximum,

w=Empty weight of car,

W-w=Maximum allowable load.

As this is based on 50 lb. air pressure per sq. in. in the cylinder, and the maximum unit pressure may be from 85 to 88 lb. the maximum brake pressure will be 1.75 (0.1W+0.3w), which, divided by the number of brake beams, will be the required deflection load per beam.

The brake beam set load, which should be somewhat within the elastic limit of the beam, should be approximately 1¾ of this amount.

Recommendations: 1. That the brake power on cars be as follows:

W=Loaded car weight, maximum,

w=Empty car weight,

N=Number of brake beams on the car.

Required brake power =0.1W+0.3w,

| Axle. | BRAKE POWER | |
|---|---|---|
| | Four-wheel trucks | Six-wheel trucks |
| C | 13 200+ .3w | 19 800+ .3w |
| D | 16 900+ .3w | 25 350+ .3w |
| E | 21 000+ .3w | 31 500+ .3w |
| F | 25 000+ .3w | 37 500+ .3w |

2. That the brake beam deflection load be $\frac{1.75}{N}(0.1W+0.3w)$.

3. That the brake beam set load be $\frac{3}{N}(0.1W+0.3w)$.

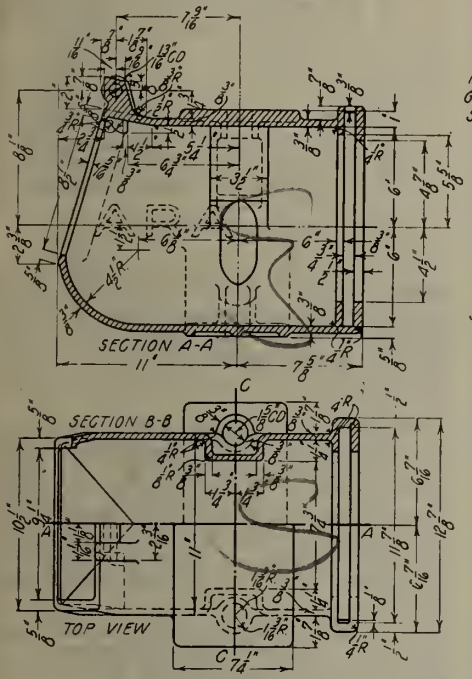
If the above is adopted the 12,000 lb. beam will be required as follows:

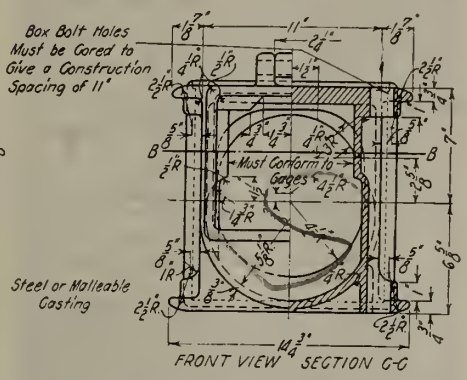
| Car class | Car weight |
|---|---|
| 4 B | All cars, |
| 4 C | Less than 50,000 lb. |
| 4 D | Less than 40,000 lb. |

The 15,000 lb. beam will be required as follows:

| Car class | Car weight |
|---|---|
| 4 C | 50,000lb. and over, |
| 4 D | 40,000 lb. to 60,000 lb. |
| 4 E | Less than 45,000 lb. |

4. That the 6,500 lb. capacity beam be dropped from the standards and that the 12,000 lb. capacity beam be denominated as the no. 1 beam, and that the interchange rules should be amended to conform to theforegoing.





Box Bolt Holes Must be Cored to Give a Construction Spacing of 11"
Must Conform to Gauges
Steel or Malleable Casting
FRONT VIEW
SECTION C-C

NOTE—Section of Box may be made either circular or square below the center line, provided all the essential dimensions are adhered to.

When Journal Box is made of Malleable Iron, reduction in thickness of metal and coring to lighten weight is permissible, provided all the essential dimensions, which affect interchangeability and the proper fitting of contained parts are adhered to.

If the method of molding does not permit of placing the letters A. R. A. on the side of the Journal Box, they may be placed on the top between hinge lug and the arch bar seat.

Figure 9.

Recommendations:—1. Make radii of fillets for all axles ⅛ in. on journals at collar, and ¾ in. on journals at dust guard seat, on dust guard seat at wheel seat, and on wheel seat at collar. (See tabulation of axles, fig. 6.)

2. Increase all lugs on journal bearings, as shown in columns 12 and 13 in tabulation of bearings. (See tabulation of journal bearings, fig. 7.)

3. Make slight changes in dimensions, as shown by asterisks in tabulation of bearings.

Note.—Recommendations 1, 2 and 3 do not interfere with interchangeability.

4. Adopt classification of axles by letters A, B, C, etc., as indicated in tables.

5. Adopt same classification for boxes and contained parts. (See tabulation of journal wedges, fig. 8.)

6. Adopt classification 2A, 2B, 2C, etc., for 2-axle trucks, and 3A, 3B, 3C, etc., for 3-axle trucks, the letter designating the axle used.

7. Adopt classification 4A, 4B, 4C, etc., and 6A, 6B, 6C, etc., for cars, the letters designating the axle used, and the figures designating the number of axles under the car.

8. Raise the capacity of the D axle to 40,000 lb. without changing dimensions.

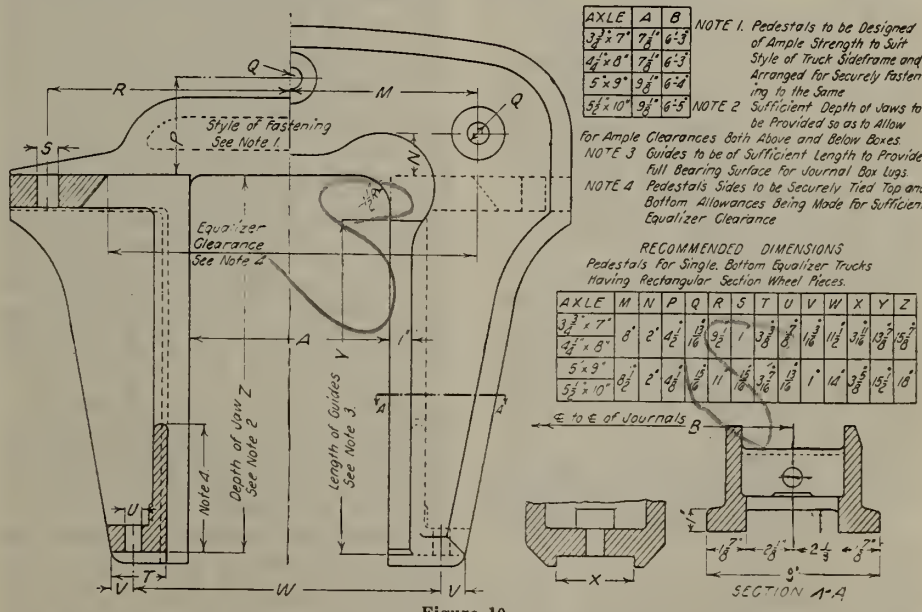
No existing cars shall be marked up in capacity on account of this increase in allowable axle load until it has been determined that the body and trucks are safe under such a load.

9. Add axle F, journal box F, journal bearing F, wedge F and dust guard F, as given in tabulations. (See figs. 6, 7, 8 and 9.)

10. Make distance from center of dust guard to top such that when in place with box, bearing, and wedge of full standard dimensions, the top of dust guard is 1⅛ in. below the top of dust guard cavity in box; the boxes not now provided with an offset at dust guard opening to hold wedge to be so provided. Increase width of dust guard cavity in the 3¾ in. by 7 in. box to 6¾ in., and in the 4¼ in. by 8 in. box to 8 in.

11. The committee's attention was called to the fact that the standard passenger car pedestals have shown weakness and a large number of them break, indicating a necessity for redesign.

Recommendations:—1. That sheets 21 and 22 of the book of standard drawings showing standard passenger car pedestals for 3¾ in. x 7 in., 4¼ x 8 in. and 5 x 9 in. journals be eliminated.


Style of Fastening See Note 1
Equalizer Clearance See Note 2
Depth of Jaw See Note 2
Length of Guides See Note 3
Note 4
E to E of Journals
SECTION A-A

| AXLE | A | B |
|---|---|---|
| 3¾"x 7" | 7⅛" | 6'-3" |
| 4¼"x 8" | 7⅛" | 6'-3" |
| 5"x 9" | 9⅛" | 6'-4" |
| 5½"x 10" | 9⅛" | 6'-5" |

NOTE 1. Pedestals to be Designed of Ample Strength to Suit Style of Truck Sideframe and Arranged for Securely Fastening to the Same

NOTE 2 Sufficient Depth of Jaws to be Provided so as to Allow for Ample Clearances Both Above and Below Boxes

NOTE 3 Guides to be of Sufficient Length to Provide Full Bearing Surface for Journal Box Lugs.

NOTE 4 Pedestals Sides to be Securely Tied Top and Bottom Allowances Being Made for Sufficient Equalizer Clearance

RECOMMENDED DIMENSIONS
Pedestals For Single Bottom Equalizer Trucks Having Rectangular Section Wheel Pieces.

| AXLE | M | N | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3¾"x 7" | 8" | 2" | 4½" | 13/16 | 9½" | 1" | 3⅜" | 8" | 1⅛" | 11½" | 3⅛" | 13⅜" | 15⅞" |
| 4¼"x 8" | | | | | | | | | | | | | |
| 5"x 9" | 8½" | 2" | 4½" | 15/16 | 11" | 1⅛" | 3 7/16" | 13/16" | 1" | 14" | 3⅝" | 15½" | 18" |
| 5½"x 10" | | | | | | | | | | | | | |

Figure 10.

2. That pedestals shown in fig. 10 be substituted for these pedestals for use on trucks with single bottom equalizers.

12. The present standard journal box lids and bolts should be withdrawn and the following specification for lids substituted:

1. Scope.—This specification covers all lids for use on A. R. A. standard journal boxes.

2. Material.—Lids may be made of malleable iron or pressed steel. Material to be not less than 3/32 in. thick.

3. Functions.—(a) Lid must protect the journal by preventing the entrance into the journal box of dust, sand, fine coal, or other foreign matter.

(b) Lid should prevent oil from working out of the end of the journal box.

4. Construction.—(a) Lid to be attached to the journal box by a fastening so arranged that it can be easily opened and closed, but it must retain itself in a fully open position without danger of closing.

(b) When closed, the tension between the lid and fastening must be sufficient to prevent vibration of lid or any parts thereof.

(c) Lids of the hinged type to have the hinge located at the top of the journal box, so arranged that the lid will open outward and upward to an angle of 90 deg. with the lid face of the journal box. Lids of other types should provide an equivalent opening.

(d) A tight contact between the lid and the face of the journal box must be maintained in order to meet the requirements as stated under item 3. For journal boxes used on passenger train equipment a machined fit is recommended.

(e) A ledge, flange, or other suitable arrangement, should be provided on the inside of the lid, particularly along the lower part, so that oil thrown against the inside face will drain back into the box.

(f) Springs should be of the coiled type when possible.

(g) The eyes of the lid must be integrally closed.

13. For calculating the diameters of axles between wheel seats, assume that the loads take effect ½ in. from center of journal at each end of axle, making the distance between assumed points of load application 1 in. more than the distance between centers of journals.

14. For calculating the diameters of axles outside of wheel seats, assume a lever arm from the section under consideration to the center of journal, plus one-fourth of the standard journal diameter, and allow a unit stress of 10,500 lb. per sq. in. to determine the diameter for miuimum road limit.

15. The committee on standard and recommended practice suggested revision of center plate drawings to show contour only, and recommend definitely spe-

cifying the material of which the center plates may be made.

Recommendations:—1. Eliminate sheet 20, which is not used in present standard constructions, and advance sheet F, which represents present practice, to standard.

Note.—If body center plate on sheet F is used in conjunction with truck center plate on sheet 20, a 3/16 in. liner should be applied to prevent body center from riding on outer rim of truck center plate.

2. Center plates shall be made either of drop forged or cast steel.

**Quality of Steel.**—Specifications for materials used in car construction are varied from time to time. It has been found that the tendency to lower the requirements for elastic limit and elongation for steel have endangered details which have been based on certain stresses, also the close adherence to requirements for ultimate strength and chemistry has caused rejection of material which was superior to material acceptable under the specifications. It is suggested that the basic requirements which will ensure meeting unit stresses allowed in the past be fixed by this committee, that unnecessary restrictions be eliminated, and that the committee on specifications and tests embody these basic requirements in a specification.

Unit stresses commonly allowed for detail parts of cars made of steel, and which are subject to variable loads and occasional light shock, are 12,500 and 16,000 lb. per sq. in. The minimum elastic limit should be double this amount, and the product of elastic limit and elongation should not be less than 50 times the allowable stress. As the test piece usually shows better physical properties than the casting or forging, the requirement for product of elastic limit and elongation should be increased by 50,000, making it 50 times the allowable stress plus 50,000. The reduction of area is considered secondary in importance. It should be 75 times the allowable stress. An addition of 50,000 for variation between test piece and the casting or forging may be made, but is considered unnecessary. The ultimate strength, content of carbon, manganese and silicon should be left optional, as the other requirements control these sufficiently and the restrictions used in specifications heretofore have caused rejection of good serviceable material.

The specifications should clearly circumscribe annealing and methods of making tests, the latter to ensure uniformly comparative results from different laboratories. The resulting specifications should be made optional for at least one year, to permit manufacturers to adjust themselves thereto.

Recommendation:—Provide specifications for all forged and cast steel used in car construction of two grades, based on fundamental requirements given below:

| Grade of steel | A | B |
|---|---|---|
| Minimum elastic limit (lb.) | 26 000 | 32 000 |
| Product of elastic limit and elongation | 700 000 | 850 000 |
| Product of elastic limit and reduction of area | 975 000 | 1 200 000 |

The ultimate strength, carbon, manganese and silicon shall be optional. Sulphur shall not exceed 0.05%. Phosphorus shall not exceed 0.05%. The elastic limit shall be determined by extensometer. The elongation shall be measured in a length of 2 in.

Grade A steel shall be annealed if the carbon content exceeds 0.30%, or if the manganese content exceeds 0.75%. Grade B steel shall be annealed if the carbon content exceeds 0.22%, or if the manganese exceeds 0.05%.

Pieces of irregular section, and of less carbon or manganese content, where shrinkage or other internal strains may be suspected, should also be annealed. Unimportant details may be accepted on surface inspection only.

**Fundamentals of Design.**—In order to prepare the way for the design and adoption of additional standards, it is advisable to confirm or change existing fundamentals and add thereto. The existing fundamentals, both actual and implied, have been discussed in committee. Those recommended for change and those which are added are presented below with reasons for the recommendations. All others given in the list, under the heading of recommendations, are now either standard or recommended practice and should be affirmed as standard. The committee can then proceed with the consideration of standard detail designs.

**Height from Rail to Center Plate Bearing Surface.**—This subject was discussed at length in a number of meetings. Consideration was given to the standard height of 27¾ in. and to the U. S. R. A. height of 25¾ in. The former height would result in a distance from bottom of sills to center line of draft gear of about 4 in., an ideal condition for sills 10 in. deep, and generally satisfactory for sills 12 in. deep. The latter height is ideal for sills 14 or 15 in. deep, and moderately satisfactory for sills 12 in. deep. The reason for its use was apparently to eliminate bottom angles in the center sill construction, and to somewhat speed up production. However, the elimination of the bottom angles, in connection with the 12 in. channel sills, results in an unbalanced section. A balanced section of the same area will have about 20% greater resisting moment.

With a height of 26¾ in. from rail to center plate bearing face, 12 in. center sills can be arranged as a balanced section, and the preferable relation of center line of draft to neutral axis of center sill construction can be maintained, making this the ideal arrangement. A center sill construction with 10 in. channels can also be made generally satisfactory. Little difficulty will be experienced to adjust existing equipment of either 27¾ in. or 25¾ in. height to center plate bearing surface to the proposed height of 26¾ in. The height from rail to top of truck side bearing will necessarily have to be adjusted to suit, to maintain the relative distance of ⅞ in. from center plate bearing face to top of side bearing.

**Distance Between Centers of Side Bearings.**—The present rules allow various distances, and it is desirable to concentrate on one distance. The committee has selected a distance of 50 in. between centers of side bearings.

**Strength Requirements for Sills and Draft Attachments.**—In 1913 this committee adopted a basic figure for strength of draft attachments of 10 sq. in. of steel equivalent to grade A material for tension. This strength requirement was somewhat in excess of the strength of the coupler used at that time. A stronger coupler, type D, has now been adopted, and the strength value of which is equivalent to at least 12 sq. in. of steel of the same material. In order to meet the increased requirements, and compare closely with the increased strength of the coupler, it is desirable to increase the strength requirements for draft gear attachments and center sills by about 20%. The formulae on which the former requirements were based as as follows:

$$R = \text{Ratio} \frac{\text{Unit stress}}{\text{End load}} = \frac{1}{A} + \frac{X}{SM}$$

A = Area of section in square inches.
X = Eccentricity of load in inches.
SM = Section modulus.

For draft gear and draft attachments:
a. The minimum tension area = T.
b. The minimum shear area = 1.25 T.
c. The minimum bearing area = 0.625 T.
d. The maximum ratio $R = \frac{3}{2T}$.

For center sills between rear followers:
e. The minimum tension area = 2.5 T.
f. The minimum shear area = 3.125 T.
g. The minimum bearing area = 1.563 T.
h. The maximum ratio $R = \frac{3}{5T}$.

Our recommendation is to increase the area T from 10 to 12 sq. in. of grade A steel, or an equivalent area of other grades of steel, and change the other values approximately in accord therewith, which will be given in the recommendations.

**Distance from Center of Bolster to Face of End Sill Casting.**—In order to have uniform construction for draft and draft attachments, it is important that this dimension should be definitely fixed. The committee has selected this distance as 5 ft., which seems to meet all necessary requirements for cars with four-wheel trucks.

**Draft Gear Travel, Coupler Horn Clearance, and Coupler Side Clearance.** — Many cars of a length of 40 ft. and more are deficient in side clearance for couplers, and we believe it imperative that the side clearance be increased. Experience with cars with the draft gear located between center sills indicates that it is undesirable to permit the horn of the coupler to strike the end sill, and that all of the strain should be carried through the rear follower into the center sills at a distance of about 1 in. below the neutral axis of the center sill construction. Until the committee on couplers and draft gear has had an opportunity to demonstrate by test that some other travel is preferable, we recommend adopting a draft gear travel with draft gear in place on the car of 2¾ in. The coupler horn clearance should be ¼ in. more, or 3 in. The total coupler side clearance should be increased from 2½ in. to 3 in. In this connection the minimum draft gear capacity of 150,000 lb. is recommended.

Recommendations:—The values given in the tabulation below should be approved as standard fundamentals for future design:

1. Height from rail to center of brake shoe face . . ..... 13 in.
2. Height from rail to brake beam hanger fulcrum . . ..... 24⅞ in.
3. Height from rail to bottom of truck springs . . ..... 10⅜ in.
4. Height from rail to top of springs (empty car) . ..... 18¾ in.
5. Height from rail to center plate wearing surface . ..... 26¾ in.
6. Height from rail to top of truck side bearing . . ..... 27⅝ in.
7. Distance from center to center of side bearing . . ..... 50 in.
8. Average clearance per side bearing per truck:
   Minimum . . ..... 1⅛ in.
   Maximum . . ..... 5/16 in.
9. Height from rail to floor of box car (minimum) . . ..... 42 in.
10. Height from rail to floor of refrigerator car (minimum) ..... 48 in.
11. Distance between center sills ..... 12⅞ in.
12. Area of center sill construction between rear followers (minimum) ..... 30 sq. in.
13. Distance from center of truck to end sill face for cars with 4-wheel trucks . . ..... 5 ft. 0 in.

| | |
|---|---|
| 14. Draft gear travel (on car) | 2¾ in |
| 15. Coupler horn clearance | 3 in. |
| 16. Minimum draft gear capacity | 15,000 lb. |
| 17. Coupler shank side clearance, total | 3 in. |
| 18. Draft gear follower thickness | 2¼ in. |
| 19. Ratio of unit stress to end load (maximum) for center sills | .05 |
| 20. Ratio of unit stress to end load (maximum) for draft attachments | .125 |
| 21. For draft attachments the area of steel in square inches equivalent to the minimum required strength values is: | |
| 21. Tension or compression (square inches, grade A steel) | 12 |
| 22. For shear (sq. in.) | 15 |
| Inside dimensions of box cars: | |
| 24. Length | 40½ ft. |
| 25. Width | 8½ ft. |
| 26. Height | 8½ ft. |

27. Hardwood, when used, must have strength values for times those given for steel.

**Minor Car Construction Matters.** — Various enquiries on the subject indicate the necessity of adopting fixed rules for repairs to existing box car ends.

Recommendation:—1. When ends of cars are broken they should be replaced with ends specified for new cars.

2. The rules for box car ends should be modified by eliminating paragraphs 5 and 6 permitting hard wood or yellow pine posts and braces, thereby making use of steel posts and braces obligatory.

The revised rules are as follows:

**Box Car End, Design and Strength.**— New cars should have corrugated steel ends, or steel plate ends ¼ in. thick, reinforced between corner posts with the equivalent of either two vertical steel braces with a total section modulus of not less than 9; or one vertical and two diagonal steel braces with a total section modulus of not less than 10; or three horizontal steel braces with a total section modulus of not less than 10.

New cars may have the following alternative arrangement: Three or more steel braces, two of which run diagonally, with a total section modulus of not less than 12½, and wood lining 1¾ in. thick.

To concentrate strength at a point near floor line on vertical center line of car, diagonal braces should extend from the center sills to the side plates, and not from the bottom corner to the ridge.

The attachments for the braces and the members to which they are attached must be sufficiently strong to realize the full strength of the braces.

Lining at car ends should be supported at intervals not greater than 30 times the thickness.

Two 4 by 3 in. Z-bars, 12.4 lb. per ft. have a total section modulus of 9.34.

Two 5 in. I-beams, 9.75 lb. per ft. have a total section modulus of 9.6.

Three 4 in. I-beams, 9.5 lb. per ft. have a total section modulus of 10.2.

Three 3 in. Z-bars, 14.2 lb. per ft. have a total section modulus of 10.3.

The corrugated ends referred to may be made of one or more pieces. If made of one piece it should not be less than ¼ in. thick. If made of more than one piece the lower third must be not less than ¼ in. thick, and the remainder should be not less than 3/16 in. thick.

**Hopper and Gondola Car Cross Ties.**— Request was made for specification of the proper number of cross ties to be used in hopper gondola coal cars.

Recommendations:—The distance between cross ties or braces in hopper or high side gondola cars shall be less than 20 times the width of the top chord of car side. Consideration should be given to providing necessary space for use of clam shell buckets in loading or unloading. If the dimensions for distance between cross ties is less than the space required for operating clam shell buckets, the ties shall be alternated with braces extending from the center ridge or floor to a location corresponding with the tie anchorage.

**Thickness of Splice Plates for Center Sills When Webs or Sills are More than One-half Inch Thick.**—Attention was directed to the use of center sills on some tank cars with webs ⅞ in. thick, and that the rules for splicing of steel center sills would require butt plates of the same thickness, which is inconsistent, and would interfere with proper riveting. Recommendation: That paragraph 2, of the rules for splicing steel center sills be modified as follows: "The splice for center sills, except as otherwise herein stated, to be located not less than 7 in. from either side of the body bolster, consisting of butt joints. The butt joints to be reinforced by plates on both sides to be not less than twice the length of the protruding end, but not exceeding 24 in. and not less than same thickness of web plate, but not more than ½ in. thick, with the one on the flange side of channel to include flanges, while the outside plate should only cover the web. The rivets to be spaced as shown on figs. A and B, sheet 28.

# Locomotive Terminal Design and Operation.

The committee, of which C. E. Fuller, Superintendent Motive Power, Union Pacific Rd., was chairman, reported as follows:—On Feb. 20, 1920, the committee issued a circular containing 20 questions and a request that all replies be in the chairman's office by Mar. 15. Up to May 1 eighteen roads responded to the questionaire. However, the information received from the majority responding was of such a nature that the committee feels that no general conclusions or recommendations can be presented and, therefore, begs to offer the following as a progress report:

The length and capacity of ash pits is determined by the maximum number of engines handled in 24 hours.

One road recommends an ash pit of suitable size to take care of 50% more power than is being handled, so that if the pit conveyor is put out of commission temporarily, the ash pit will be of sufficient capacity to hold cinders until repairs are made.

Two roads recommend two large water cinder pits emptied by locomotive cranes, with grab buckets operated from a separate track, with pits so arranged that cinders can be flushed into cinder pit from the dump pit with water.

Three roads favor a depressed track, for holding cinder cars, located along the side of pits, in order that cinders may be easily shoveled into the cars.

The capacity of the coal chute depends upon the maximum number of locomotives to be coaled in 24 hours.

Seven roads specify coal chute, sand house and ash pit to be located between inbound and outbound tracks from turntable, and as close to locomotive house as trackage will permit.

Five roads prefer sanding facilities at the coal chute direct.

One road recommends the coal chute to be equipped with automatic sprinkler system, and with crusher and scales.

One road reports coal chute located about 200 ft. from the ash pits; while it is desirable, according to two other roads, to have ash pit adjacent to, but not immediately under, coal chute, so that men from either one can help out in rush periods, and the fumes from wet ashes and the ashes themselves will not corrode the steel work of coal chute.

One road recommends, for a cold country, locomotive house, turnable, ash pit, etc., all under one roof, with coal chute close by, and incoming locomotive to be left by crew before coming to the coal chute.

The problem of coal chute and ash pit organization depends materially on the amount of power handled, as well as the question of locomotive house organization and the character of repairs to be made; in other words, it is based on the size of the terminal and the business handled.

Five roads report a foreman in charge of coal chute and ash pit, whose duties are to see that all locomotives are properly sanded, coal and water furnished, and fires cleaned.

Four roads recommend locomotive house foreman's supervision of ash pit and coal chute gang leaders, fire cleaners, ash shovelers, helpers, etc.

There is not sufficient data available upon which to base a recommendation for a definite system of organization. Regarding locomotive house operation as a whole, while only four roads replied on this subject, three agree that there has been a great deal of neglect in the proper design of locomotive houses.

Adequate equipment with as many labor-saving devices as possible will repay the expense of installation in a short time.

Locomotive houses should be equipped with proper ventilation to force out smoke and gases.

Eleven roads recommend coal stoves as the best method of drying sand, while six prefer steam coils. It is pointed out that drying by stove burns off organic matters and renders the sand more gritty.

A large majority of roads replying prefer the elevation of sand by compressed air, while a small number prefer the chain and bucket elevator operated by motor. Conveying sand to locomotives by gravity appears to be universal practice.

The recommended distance between pilot and outer wall of locomotive house varies from 8 to 15 ft., while the distance between face of coupler on tender and wall varies from 5 to 10 ft. The distance from locomotive to side wall varies from 5 to 10 ft. The ideal arrangement would permit sufficient space between walls, with tank cut loose, to permit the removal of engine truck and both tender trucks at the same time.

With reference to locomotive house door clearance, the replies cover doors which vary from 12 ft. 8 in. to 14 ft. wide, and from 14 ft. to 18 ft. high One road strongly recommends steel framed doors on locomotive houses.

Nine roads recommend steam as the best method of heating locomotive houses, while five prefer hot air, and two prefer coal stoves. Others specify steam heat for small locomotive houses and hot air for large ones.

The preference in location for steam heat is to place the coils in the pits, properly protected from damage from heavy parts falling from above. It is essential for the coils to set in from the side and be protected so that water drippings from thawing ice and snow on engine will not run on to the pipes. Eight out of nine roads recommending steam heat favor steam coils on outer wall, while five roads report additional coils on in-

ner wall to whatever extent is permissible. The vacuum return system of steam heat is preferred by the majority of roads, while some use exhaust steam from air compressor and stationary engine.

Several of the roads recommending hot air for heating locomotive houses do not heat the pits, but have outlets 4 ft. from the floor with drop at alternate spaces between pits.

The problem of locomotive house heating depends materially upon climatic conditions first, and upon such matters as the availability of waste or exhaust steam; and, while the desirability for well heated locomotive houses is apparent to all, it is somewhat a local problem.

There is a great deal of difference on the question of machine tools for locomotive house work, and this subject depends very largely upon the amount of work to be taken care of. A number of roads recommend the installation of machine tools separate from the locomotive house, but attached to same, as nearly centrally as possible.

The majority of roads recommend drop pits to take care of engine truck and trailer wheels, in addition to the main drop pit. Several roads report desirability of separate drop pits, to handle tender truck wheels, while one road advises that a single pit is ample. A second road recommends a driving wheel pit for every 6 stalls and an engine trailer pit for every 10 stalls. The Whiting hoist is mentioned by several roads for driving-wheel pits in large locomotive houses.

The hydraulic jack appears to be favored by the majority, although a small number of roads prefer air jacks, on account of the telescopic feature requiring less depth of pit. One road reports an electric crane for lifting wheels, and one specifies Watson and Stillman's hydraulic compressed air telescope jack.

Regarding material for locomotive house flooring, opinion is divided between concrete, creosoted block, brick, and mastic or asphalt composition. The majority, however, recommend creosote blocks, with concrete running second.

The use of packing blocks the full length of pit is universally recommended.

Smoke jacks are reported as made of fireproof wood, sheet metal, asbestos and cast iron, opinions being about equally divided. The views as to the hood opening at bottom range from 8 to 15 ft. in length. Several roads recommend the use of dampers on smoke jack.

Recommendations regarding handling material in locomotive houses, cover a trolley track, swing crane, overhead travelling crane, electric truck and collapsible horses.

The majority of roads recommend that all stalls be equipped with hot water wash-out facilities, while several prefer only one-half of the stalls equipped. The general view appears to be that the washing of locomotives with hot water is at all times desirable from the standpoint of saving in time, fuel, water, and, most important, a reduction in fire box repairs. The majority of roads blow off boilers through a blow-off pipe leading from engine to atmosphere or tanks, which in some cases are connected with the sewer. Three roads recommend a pipe line from end to end of engine house above locomotive domes, with connection at each pit, and outlet on both ends of house. This system is used by one road to connect with cold water system to cool down boilers. The entire subject is of the most importance in connection with engine terminals.

As to locomotive house lighting, there seems to be about an evenly divided preference for reflector lights on the walls, and lights placed between pits. All, however, appear in favor of sufficient extension plugs on post for working in pits and fire boxes. In lighting outside grounds, all roads appear to favor flood lighting of sufficient power and proper height to afford a good light on points where needed.

Analysis of the replies indicates the widest divergence of opinion on nearly all subjects connected with locomotive house and locomotive terminals; this refers to design, equipment, maintenance and operation. It is entirely natural that varying local conditions should develop different systems at locomotive terminals, and your committee feels, after reviewing this subject, that there is little opportunity for standardizing on the general layout for the reason that, as a rule, there is no choice of location, and the ground available is usually limited both in area and in relation to its surroundings. It is, therefore, apparent that the layout of each locomotive terminal is properly a separate problem—again, the entire problem is largely a function of the size of terminal, the power handled, the estimated expansion of future business, and similar questions. The replies, however, do indicate a decided trend in the last few years toward improvement in facilities in modern terminals, especially in the art of heating, lighting, ventilating, tool equipment, boiler washing, cleaning fires, coaling and sanding.

It is the committee's opinion that while the standardization of locomotive terminals as to general layout is impossible it might be desirable to standardize locomotive house design as to general dimensions and structural features, that some progress may be made in the future toward the standardization of such equipment as locomotive house cranes, drop pits and washout systems; also in lighting, heating and ventilation.

The time available has been entirely too short to prepare a comprehensive report on such a large, important subject, and your committee desires to offer the above as a progress report with a continuation of the committee if the association feels that this is desirable.

## Mechanical Stokers Committee Report.

The committee, of which M. A. Kinney, Superintendent Motive Power, Hocking Valley Ry., was chairman, reported as follows:—The mechanical stoker as adapted for locomotive firing has, from the evidence of its application, become a necessity, there being over 5,000 in use on locomotives in the United States. The necessity for a mechanical application to the locomotive for stoking purposes became apparent, as the rapid strides in increased tractive effort of the locomotive to reduce the transportation costs were not meeting the expectations of those directly connected with operation, as the full power of the locomotive could not be sustained over a period of time, on account of the human agency behind the scoop shovel not being able to deliver fuel enough, and with efficiency, to maintain a reasonable speed with a tonnage that the locomotive had been designed for, and could haul over a division. The mechanical stoker, therefore, found a field on railways where the heavy tonnage train of commodity freight carried at low rates was the major part of their revenue, and it might be said that the stoker was first commercially a fact in 1910. Several types of stokers had been receiving experimental attention for several years prior to that date, but 1910 marked the beginning of the time that railways, as mentioned above, started the application on new power of extraordinary weight of tractive effort, realizing that to get the most out of the locomotive of high capacity some mechanical means must be provided. In 1912 demand was made by firemen in the eastern wage application for two firemen on locomotives weighing over 200,000 lb. on the drivers; this naturally stimulated the inventive genius of the stoker manufacturers, and improvements and different types of stokers came out that made it a successful machine compared with past efforts, and has well supplied the necessity for its development.

The determination of the points as to the size of locomotive when the stoker shall be applied, the economy of fuel that may be expected, the cost of repairs, and not the least point to be considered, the kind and preparation of fuel, have been the subjects that your committee, and also the members of this association, have presented and discussed more than any other features during the past seven years which it has been before you, therefore it was deemed advisable to obtain material for your consideration in this paper, by putting out a questionnaire, endeavoring to arrive at some definite understanding as to the general feeling on the subjects, especially those enumerated, and to comply with resolution passed by the 1919 convention. While the responses were not as numerous as it was hoped, 30 railways answering are representative lines which have had experience with the mechanical stoker and are qualified to make answer from actual knowledge. We will state the question, and comment on each in its turn.

State the number and kind of stokers you have and type of locomotive and tractive power on which they are used. Replies were received from several roads using over 100 and one road reports 563 in use. The mikado, Santa Fe and Mallet type predominate, with tractive effort from 54,000 to 135,000 lb. There were a limited number of consolidations as low as 51,000 lb. It is, therefore, apparent that to date the locomotive of less than 55,000 tractive effort has not received much consideration as to equipping with the mechanical stoker.

What is the tonnage rating on type of locomotives in territory where operated? Is there any difference in the tonnage rating on hand-fired and stoker-fired locomotives of the same type in the same territory? Do you load the stoker-fired locomotives heavier than the hand-fired? If not, why? With the increased tonnage, do they make better or poorer time over the division? These questions are practically the same but were asked separately in an effort to bring out such views as would be possible by different

forms of interrogation. The tonnage rating is controlled locally by gradients and type of commodities hauled. The difference in rating between hand-fired and stoker-fired locomotives, in the majority of cases, is hard to determine, few railways having both types of firing, as the stoker came with the inception of heavier power, and prevents comparisons being made. However, some of the larger users of the stoker report increasing loading 150 tons on a 2,400 ton train, and 400 tons on a 4,600 ton train, with the stoker-fired locomotive, over the hand-fired on the same division. Where the stoker and hand fired are used on the same type of locomotive, with one exception, replies indicate as good performance can be procured with the stoker, with increased tonnage, as the hand-fired with reduced rating.

How does the condition of fire of the hand-fired locomotives compare with the stoker-fired locomotives when arriving at terminals? The general answer to this question, "Better condition on stoker-fired, demonstrates that the firemen soon realize the advantages of the stoker and will endeavor to carry a light, even fire, which can easily be accomplished by ordinary attention. It lightens the labors of the locomotive crew and also shortens labor of cleaning or knocking fires at the ash pit.

Do your records indicate any decrease in boiler maintenance with the stoker-fired locomotives as compared with the hand-fired locomotives, in parallel cases? One road notes changes in locomotive boiler construction, largely in welding flues and other parts of the fire box, have made comparisons difficult. The committee wishes to call attention to the advantages of maintaining a fire box temperature while trains are on sidings waiting for orders, or any stop of the locomotive, especially in single track operation, that will minimize the detrimental results of rapid contraction in large fire boxes. This can be very satisfactorily overcome by keeping a light, even fire easily controlled with the stoker.

Do you use two firemen, or a relief fireman, or give the fireman any assistance on your hand-fired locomotives? Majority of roads report "No."

State what prompted you to apply stokers to particular classes of locomotives. With one exception all answers report "Increased tonnage and size of locomotives." One representative reply which appealed to the committee was "A better class of men can be recruited and held as firemen," another, "The fireman can devote more time to improving himself in the necessary knowledge he requires to become a locomotive man." One large road states "The stoker is considered a positive necessity where coal consumption averages more than 5,000 lb. an hour." All replies, with one exception, call attention to the operation of large type locomotives under maximum conditions, stating that the mechanical stoker is essential.

With the experience you have had with stoker-fired locomotives generally, and from actual tests, please express your views on economy as to amount of fuel consumed, and efficiency of the locomotive as to speed and tonnage compared with hand firing, either with run-of-mine or prepared coal. Naturally in the consideration of applying any new device to a locomotive the thought of economy, by the shortest route, appears, and in the case of the mechanical stoker, the coal which it delivers to the fire box, and in fact its chief function, being the largest item of expense connected with the locomotive, immediately falls heir to the query, "How much coal will it save over hand firing?" The replies, with one exception, to this question above stated are in line with all reports that have been made by previous reports by the stoker committee, viz., that there is, undoubtedly, some more coal burned by the stoker-fired locomotives than by the hand-fired, but from the replies on this subject, there are no doubts in the minds of your committee that the increased efficiency as to tonnage, speed, and in fact the various thoughts before enumerated, offset any loss that may develop in amount of coal consumed for a given service performed. Your committee, however, desires to make the point that the users of stokers realize that fine coal to the extent it is handled by the stoker increases stack losses; the education of the fireman is just as essential as in hand firing, and not to be lost sight of is the fact that stoker firing is mechanical rather than a human operation, and it is for the manufacturers to improve and so refine the machine that it can be kept in a closer range of operation, and the stoker on the locomotive today, however successful, does not free the manufacturers from improving the mechanical condition to remove human inefficiency.

What percentage of the run-of-mine coal which you receive for locomotive use is slack? If this same coal is prepared at a crusher, how much is the slack increased? Local conditions govern the answer to this question. From 20 to 50% of so-called slack reported. The term slack, as recorded by several roads, is the amount of fine material passing through a 4-mesh per sq. in. screen. One road reports increasing from 35 to 50% crusher, and another from 15 to 75%. All others report "No coal prepared by crusher."

What do you estimate the additional cost of maintenance where stokers are equipped with crushers? All roads report "No data."

Are you in favor of coal crushers with stoker equipment on locomotives? Please state reasons. This question is one of the most discussed, and possibly the most serious subject, in connection with the mechanical stoker, owing to the fact that it resolves itself into a local condition, on account of the great diversity of fuel coal, as to amount of slack, fitness to be handled by a crusher on account of hardness, and the possibilities of procuring the proper supply at all times. It will be recognized that the opinions of the officers will be influenced by the conditions and best methods applicable to their own road. The answers received to this question were practically unanimous that the locomotive equipped with the mechanical stoker should, to make it a complete machine, capable of operating over a wide territorial range, have the crusher on the locomotive. Your committee concurs in this as applied to a limited number of stokers being used on a railway, but as locomotives equipped with the stoker are centralized it becomes possible to prepare the fuel before delivery to the tenders. The manufacturers are confronted with conditions in the application of the crusher to the locomotive that have been met with fairly good success, but will require their best talent to meet the widely varying conditions as the stoker is placed on more roads. The hardness of the coal causes an extremely wide range of conditions the country over. The strengthening of the crusher parts, and the possibility of the crusher mechanism being detachable, in a way that prepared coal can be used, and discontinue operation of the crusher parts while using the stoker, are recommended by this committee.

It has been proposed that coal should be prepared at the mines. Where railways own their own mines and when the entire output of some coal mine is controlled, this suggestion has its merits, but with the unsettled conditions that have confronted us the past few years, in the mining industry, the changing of contracts and unreliability at all times of being assured 100% of fuel for their stokers, this suggestion cannot be recommended. The coal, if prepared before being delivered to the tenders, should be crushed at the railway coal tipple or a centralized crushing plant on the railway.

Do you prepare coal for stokers before loading it on the locomotives? If so, by what methods and what does it cost by each of these methods? The resolution of this convention in 1919 asking for the information embodied in this question cannot be answered by your committee, as no figures were made available in the answers. Where coal is prepared before being placed on the locomotive it is bought in that state or screened at the railway coal tipple. One road reports crushing at fuel station, but the cost is practically negligible, as the coal is dropped from the car into the crusher and prepared before it is elevated. The capital expenditure necessary to install this method will, where electric power is available, be from $6,000 to $12,000 at each coaling station.

The question of using so-called lignite fuel has been referred to this committee. There is some question as to the proper definition of lignite. We find the term semi-lignite and sub-bituminous used; it being a fuel used by the northwestern railways having a b.t.u. value from 11,250 to 12,500. Reports indicate no difficulties are being experienced in firing with this fuel, if handled properly. Stack losses and fires along right of way not developing. One road reports less liability of fire, on account of the fire, and character and regularity of the fire, and doing away with the necessity of opening the fire door, which creates sparks with this class of fuel. The only change in fire box or draft appliance noted, to burn lignite, was one road reports applying one more row of fire brick.

On the question as to what recent changes have been made in coal space of locomotive tenders to permit the coal to flow within easy reach of the fireman, replies state that several roads have resorted to a mechanical device for pushing the coal forward, which was reported successful in various sections. Existing power has been largely cared for by local arrangements of changes in slope sheets, raising and moving coal boards.

Your committee recognizes that the mechanical stoker, coming to the railways as it has in the past three years, under trying times, with inexperienced firemen, shop forces not up to the standard, and the burden of an overloaded organization trying to move every ton of freight possible, has received many a hard knock and will continue to receive them, but the manufacturers will be on the ground; and, as we have tried to bring out plainly in this report, local conditions must be studied and the preparation of fuel, the cost of maintenance and the benefits of having a locomotive that will prove 100% good, up hill and down, will be your problem and result in improvements to the benefit of all.

Enquiry was made of the stoker manu-

facturers as to the number of stokers in service Mar. 1, 1920, with following result:

| Kind of stoker | Mallet | Mikado | Santa Fe | Centipede | 12-Wheel | Decapod | Consolidation | Mountain and Mohawk | Pacific | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Street | 424 | 638 | 357 | 4 | 14 | | 21 | 3 | 36 | 1.497 |
| Duplex | 422 | 1,139 | 441 | | | 123 | 22 | 28 | 20 | 2,195 |
| Standard | 120 | 338 | 36 | | 33 | | 21 | 162 | 21 | 731 |
| Hanna | 70 | 6 | 73 | | 16 | | | 4 | | 169 |
| Elvin | | | 19 | | | | | | | 19 |
| Crawford | | 50 | 35 | | | | 337 | | 93 | 515 |
| Total | 1.036 | 2,171 | 961 | 4 | 63 | 123 | 401 | 197 | 170 | 5,126 |

## Couplers and Draft Gears Committee Report.

The committee, of which R. L. Kleine, Assistant Chief of Motive Power-Car Matters, Pennsylvania Rd., was chairman, reported as follows:—Since the adoption of the D coupler as a standard of the association, and rules governing the application of the standard coupler to both new and existing cars, your committee has followed closely the performance of the couplers and kept in touch with the manufacture and gauging of the product.

Slight changes in detail of construction, as well as minor modifications in gauges, that tend to improve the manufacture and gauging of the couplers, have been brought to the attention of the committee from time to time by the manufacturers. All such suggestions have been carefully investigated, and, if found desirable, and in no way affecting the strength or interchangeability of the parts, are approved without submitting to action by the association.

At the request of the Secretary, your committee furnished information covering couplers for the manual of standards.

The United States Railroad Administration, under the direction of C. B. Young, Manager of Inspection and Test Section, has been conducting very valuable tests on draft gears and attachments. The members of your committee have witnessed some of these tests and have had a representative working with the administration on these tests. Your committee has been advised that a complete report covering all draft gear investigation work done by the administration will be turned over to them as soon as it is possible to finish tabulation of the data. From the study of this data your committee will be able to prepare a programme of such further tests and investigations that are essential, which will be submitted to the general committee for approval, to the end that final recommendations may be made to the association on this subject.

## Snow Fighting Equipment.

W. H. Winterrowd, Chief Mechanical Engineer, Canadian Pacific Ry., read at the Atlantic City convention an individual paper on snow fighting equipment, in which he traced very fully the history of snow ploughs, etc., and described their various types. The paper, as printed for the convention, and which contains 74 illustrations, occupies 87 pages 6 x 9 in., so that it is impossible to reproduce it in this issue, on account of the large amount of space required for other matter relating to the convention, but we hope to utilize it in future issues. It deals with locomotive, pilot, push, wing, spreader and machine ploughs; the C.P. R., the Fuller, and the Russell steel ploughs; the C.P.R., Grand Trunk Pacific and Union Pacific rotary ploughs; also with flangers, ice cutters, sweepers; the operation of equipment, and preventive measures. The whole subject is most exhaustively treated, and the paper will undoubtedly become a standard reference work.

# Other Atlantic City Convention Reports.

In addition to the reports reproduced on earlier pages of this issue, the following were presented:—

Arbitration.—T. H. Goodnow, Superintendent, Car Department, Chicago & North Western Rd., chairman, J. Coleman, Assistant to General Superintendent Motive Power and Car Departments Grand Trunk Ry., being a member. This reports decisions on cases 1156 to 1170.

Auxiliary or Safety Connections Between Locomotives and Tenders.—M. H. Haig, Mechanical Engineer, Atchison, Topeka & Santa Fe Rd., chairman. This deals with designs of draw bars; safety bars for new and for large locomotives; safety bars and safety chains; substitution of safety bars for safety chains; bolting must be substantial; welding not favored; approximate cost of changing to central safety bars on locomotives in service; offset draw bars; draw and safety bar pins; maintenance and inspection of drawbars; drawbar and safety bar pockets; U.S. law on safety bars.

Boiler Plant Modernization.—A. C. Trumbull, Mechanical Engineer, Erie Rd., chairman. This deals with boiler room equipment, stokers, piping, pipe covering, power plants for locomotive terminals, and repair shops, special methods of combustion, and pulverized fuel.

Brake Shoe and Brake Beam Equipment.—B. B. Milner, Engineer Motive Power and Rolling Stock, New York Central Rd., chairman.

Depreciation For Freight Cars.—C. E. Chambers, Superintendent Motive Power and Equipment, Central Rd. of New Jersey, chairman, W. J. Robider, General Master Car Builder, Canadian Pacific Ry., being a member. This contains recommendations for changes in interchange rules.

Electric Rolling Stock Design, Maintenance and Operation.—C. H. Quereau, Superintendent Electric Equipment, New York Central Rd., chairman. This consists of individual papers written by the various members of the committee, showing the development of several of the important electrification projects on American steam railways, as follows:—Baltimore tunnels electrification, Baltimore & Ohio Rd. New York Central Rd. electrification, New York to Harlem. Brief history of New York, New Haven & Hartford Electric Rolling Stock. Great Northern Rd. electrification Cascade tunnel. Boston & Maine Rd., Hoosac tunnel electrification. Butte, Anaconda & Pacific Ry., electric operation. Norfolk & Western Rd., electrified line historical sketch. Chicago, Milwaukee & St. Paul Ry., synopsis of electrification. Long Island Rd. electrification. Southern Pacific Co.'s electrification of Oakland, Alameda and Berkeley suburban lines.

Fuel Economy and Smoke Prevention. Wm. Schlafge, Mechanical Manager, Erie Rd., chairman. This consists of revision of the text of "Fuel Economy on Locomotives," comprising complete instructions to bring about the economical use of fuel, to promote good practice in the operation of locomotives and to improve the methods of firing.

Interchange Rules for Passenger Cars. H. H. Harvey, General Car Foreman, Chicago, Burlington & Quincy Rd., chairman., I. N. Clark, Master Car Builder, Grand Trunk Ry., being a member. This recommends several changes in the rules.

Labor and Material Prices.—G. E. Carson, District Master Car Builder, New York Central Rd., chairman. This recommends the complete revision of rules existing heretofore.

Loading Rules.—R. L. Kline, Assistant Chief of Motive Power, Pennsylvania Rd., being a member of the committee. This recommends a number of changes in the rules.

Research Bureau.—C. B. Young, Manager, Inspection and Tests Section, U.S. Railroad Administration. This favors the establishment of a research bureau, the cost to be assessed, in the usual manner, on railways which are members of the association.

Specifications and Tests for Materials. F. M. Waring, Engineer of Tests, Pennsylvania Rd., chairman. This recommends specifications for steel cars; boiler and fire box steel for locomotive equipment; line journal bearings; annealed and unannealed carbon steel axles, shafts and other forgings; solid wrought carbon steel wheels; bronze bearings for locomotives; carbon steel axles for cars, locomotive tenders and locomotive trucks; solid and hollow staybolt iron, and tender tank hose.

Standard and Recommended Practice. W. E. Dunham, Assistant to General Superintendent, Motive Power and Car Department, Chicago & Northwestern Rd., chairman. W. J. Robider, General Master Car Builder, Canadian Pacific Ry., being a member. This deals with the combining of the standards and recommended pratice, as recorded for the Master Car Builders Association and the American Railway Master Mechanics Association, and in preparing the manual in the form in which it has been furnished recently.

Tank Cars.—A. W. Gibbs, Chief Mechanical Engineer, Pennsylvania System, chairman. The committee's work has been large devoted to details for construction calling for improvement, and, as the details have not been settled, the report is principally one of progress.

Train Brake and Signal Equipment.—T. L. Burton, Air Brake Engineer, New York Central Rd., chairman. This recommends a number of subjects to be sub-

mitted to letter ballot, for adoption as standard.

**Train Lighting and Equipment.**—J. R. Sloane, Chief Electrician, Central Region, Pennsylvania Rd., chairman. This deals principally with specifications for axle generators.

**Train Resistance and Tonnage Rating.** O. P. Rees, Superintendent Motive Power, Pennsylvania Lines, chairman. This is a progress report, dealing briefly with equated tonnage rating.

# Railway Supply Exhibits at the Atlantic City Convention.

The railway supply exhibits at the Atlantic City convention were, as usual, arranged for by the Railway Supply Manufacturers' Association, the officers of which were: President, Geo. R. Carr, Vice President Dearborn Chemical Co., Chicago; Vice President, J. F. Church, Vice President, T. H. Symington Co., Chicago; Secretary Treasurer, J. O. Conway, Pittsburg, Pa. Mr. Carr was also chairman of the joint committee of arrangements, comprised of representatives of both the railway and manufacturers associations. There was a considerable increase in the number of exhibits and the space occupied was 100,000 sq. ft., against 93,000 in 1919. Among the principal exhibitors were the following:—

American Brake Shoe & Foundry Co., New York.—Standard patterns railway brake shoes; steel back driver shoes; steel back engine truck shoes; steel back passenger and tender shoes; steel back freight car shoes; malleable iron locomotive driver brake head and keys.

American Locomotive Co., New York. Alco reverse gear; flexible staybolts; intercepting valves.

American Steel Foundries, Chicago.—Economy cast steel draft arm; Davis steel wheel; Ajax and Hercules brake beams; Simplex coupler; cast steel bolster; Simplex clasp brake; Simplex coupler pocket; Vulcan truck.

Association of Manufacturers of Chilled Car Wheels, Chicago.—One 33 in. no. 625 M. C. B. car wheel for 30-ton cars; one 33 in. no. 700 M.C.B. car wheel for 40-ton cars; one 33 in. no. 725 M. C. B. car wheel for 50-ton cars; one 33 in. no. 850 M. C. B. car wheel for 70-ton cars. Also a moving picture showing various processes of manufacturing the chilled iron car wheel, including moulding, pouring, pitting and drop testing of the wheel. In addition thereto, a series of pictures showing measurement of temperature stresses to which the wheels are subjected, indicated by test gauges.

Barrett Co., New York.—Carbosota, coaltar, pitch and felt products; roofing; waterproofing; wood preservatives; metal protective paints.

Boss Nut Co., Chicago.—Boss lock nut; bolts and rivets.

Bowser & Co., S. F., Fort Wayne, Ind. Tanks and self-measuring pumps for receipt, storage, distribution and checking of oils and similar liquids; paint handling and mixing equipment.

Crane Co., Chicago.—Locomotive brass valves, railroad unions and railroad union fittings; locomotive blow-off valves; locomotive pop valves, brass railing fittings.

Davis Boring Tool Co., St. Louis, Mo. Full line of Davis expansion car wheel and shop boring tools; Davis micrometer adjustable reamers.

Davis-Bournonville Co., Jersey City, N.J.—General line of oxy-acetylene cutting and welding apparatus.

Dearborn Chemical Co., Chicago. — Dearborn water treating preparations for prevention of scale formation, corrosion and foaming in locomotive boilers; Nox-id rust preventive.

Electric Service Supplies Co., Philadelphia.—Golden Glow locomotive headlights, sheet metal and cast iron types; keystone turbo generators; golden glow and crystal mirror glass reflectors; locomotive headlight switches; marker lights; classification lights; lamp guards; flood lights and searchlights.

Fairbanks, Morse & Co., Chicago.—Oil engine, direct connected to electrical generator in operation; motor-driven centrifugal pump, direct-connected in operation; locomotive water crane; motor cars.

Flannery Bolt Co., Pittsburg, Pa.—F. B. C. welded flexible staybolts, flexible crown staybolts and boiler section under test; Tate flexible staybolts; crown adjustable staybolts and marine flexible staybolts. Tools for proper application of F. B. C. and Tate products.

Franklin Railway Supply Co., New York.—Ragonnet type B reverse gear; automatic adjustable driving box wedge; driving box lubricator; no. 8 fire door, Franklin steam grate shaker; McLaughlin flexible conduit; Franklin ball joint; two-wheel engine truck; radial buffer; unit safety bar; no. 9 fire door; universal valve chest; Booster engine on exhibition track.

Galena-Signal Oil Company, Franklin, Pa.—Reception booth.

Garlock Packing Co., Palmyra, N.Y.—Air pump and throttle, slip and ball joint, and power reverse gear packing; compressor and accumulator, steam hammer and power plant packing; gaskets and pump valves; flexible metal packing.

Gold Car Heating & Lighting Co., New York.—Vapor, combination pressure and vapor, pressure, hot water and electric car heating systems; thermostatic control for all types of car heating systems and buildings; ventilators for railway cars; pressure regulators.

Griffin Wheel Company, Chicago, Ill.—Chilled iron car wheels.

Grip Nut Co., Chicago.—Grip nut products; grip lock nut; holding nut; unit nut; pump piston rod nut.

Hunt-Spiller Manufacturing Corporation, South Boston, Mass.—Locomotive parts made of Hunt-Spiller gun iron; cylinder bushings; cylinder packing; solid pistons; bull rings; piston valve bushings; tee rings; piston valve packing; crosshead shoes; side rod and knuckle pin bushings for freight service; air pump bushings and packing; driving boxes; pedestal shoes; pedestal wedges; eccentrics and eccentric straps.

Independent Pneumatic Tool Co., Chicago.—Thor pneumatic drills, reamers, grinders, hammers, hoists, rammers and electric drills and grinders.

Ingersoll-Rand Co., New York.—Little David pneumatic tools and appliances.

Johns-Manville Co., H. W., New York. The 85% magnesia pipe covering and boiler lagging; J-M sponge felted pipe covering and blocks; miscellaneous J-M pipe coverings and transite and ebony asbestos wood; asbestos shingles; high temperature and insulating cement; Mastic flooring; J-M built-up and ready roofing; Salamander insulation; Keystone hair felt and standard hair felt; spiral locomotive pipe covering; power reverse gear packing; Mallet locomotive packing; J-M expander rings and packing cups; friction tape and splicing compounds; Transite asbestos wood smoke jacks; miscellaneous packing materials; Vulcabeston gaskets and washers; J-M fire extinguishers; Transite ventilators.

Joliet Railway Supply Co., Chicago.—Brake beams; truck bolsters; side bearings; journal boxes.

KeYoke Railway Equipment Co., Chicago.—Murray cast steel friction draft gear and cast steel coupler yokes.

Locomotive Feed Water Heater Co., New York.—Boiler feed pump; model of feed water heater; samples of various parts from service.

Locomotive Stoker Co., Pittsburg, Pa. Full size type D duplex stoker with locomotive backhead; 1/3 size type D duplex stoker with locomotive backhead; full size type D slope sheet coal pusher.

Locomotive Superheater Co., New York. Steam superheaters for locomotives; fire tube superheater for Scotch marine boilers; Elesco superheater for stationary boilers; pipe coils; steam pyrometers.

McCord & Co., Chicago. — Journal boxes.

Metal & Thermit Corporation, New York.—Thermit and appliances, sample of square single track crossing, constructed by Thermit welding. Sample of carbon-free metals and alloys produced by the Thermit process. Sample weld on 9 in. crank shaft. Materials for demonstrating pipe welding for the purpose of welding locomotive superheater units. Sample of superheater unit so welded.

Miner, W. H., Chicago.—Friction draft gears; side bearings; safety hand brakes; refrigerator car door fasteners; drawbar yokes.

Mudge & Co., Chicago.—Solvit compound; Mudge motor cars; Mudge-Peerless ventilators.

National Carbon Co., Cleveland, Ohio. Columbia dry cells; Columbia hot shot and multiple batteries; Columbia high voltage caustic soda cells; carbon and metal brushes for motors; generators and headlight equipment; lighting and welding carbons; welding paste; carbon plates; carbon packing rings; special forms in carbon and carbon telephone specialties; American flashlights and batteries.

National Lock Washer Co., Newark, N.J.—Models of car curtains; curtain fixtures, sash locks; sash balances; window packing; national lock washers and Hipower nut locks.

Norton, A. O., Incorporated, Boston, Mass., and Coaticook, Que.—Different types of Norton self-lowering speed-controlled jacks—100 ton; 50 ton; 50 ton inverted type—new this year. 35 ton; 25 ton; 25 ton and 35 ton ball bearing journal jacks.

Pyle-National Co., Chicago.—Model of Young valve gear. A complete line of turbo generators; electric headlight sets; suburban train lighting; headlight cases of all sizes; sheet steel and cast; locomotive cab lamps; back-up lamps; switches; connectors; focusing devices for lamps.

Q & C Packing & Lubricator Co., New York.—Piston rod packing and lubricators.

Safety Car Heating & Lighting Co., New York.—Electric and gas car lighting equipment; car lighting fixtures and reflectors; electric fans; oxy-Pintsch metal cutting equipment.

Standard Car Truck Co., Chicago.—Complete models showing different types and capacity of lateral motion trucks and working parts; roller center plates; roll-

er side bearings and four-point bearing truck.

Stucki Co., A., Pittsburg, Pa.—Side bearings.

Symington Co., The T. H., New York. Full size models Farlow draft gear attachments; Symington journal boxes; Symington journal box lid with locking attachment.

Tuco Products Corporation, New York. Tucolith plastic composition flooring material; flexolith composition flooring material; steel preservative as applied to chanarch; Imperial and Universal car window screens; National and Universal steel trap doors; trap door locks; resisto quilt hairfelt insulation; Tucork mineral insulation.

Union Draft Gear Co., Chicago.—Cardwell friction draft gear, type G, class 11-A; Cardwell friction draft gear, type G, class 11-A; duplex.

Union Railway Equipment Co., Chicago.—Ureco reclaim coupler release rigging; improved brine valve; tank handhole; drop brake shaft; pipe clamp; tank support; bevel hatchway; metal box-car ladder.

Universal Draft Gear Attachment Co., Chicago.—Cast steel coupler yokes; cast steel reinforcing draft arms; miscellaneous draft lugs in cast steel and malleable iron.

Vapor Car Heating Co., Chicago. — Vapor system of car heating—short-circuit cut-out method; new type steam hose couplers, with take-up lock; automatic car temperature control and automatic control for reducing yard temperatures; pressure reducing valves; steam traps; train pipe valves.

Westinghouse Air Brake Co., Pittsburg, Pa.—Universal passenger equipment demonstration rack of three cars and locomotive. Illuminated electric chart showing performance of UC passenger equipment with and without the electro pneumatic feature. Empty and load brake equipment demonstration rack. Westinghouse NA-1 friction draft gear complete.

Westinghouse Electric & Manufacturing Co., East Pittsburg, Pa.—Type 815 switch; type 809 reversing switch; type C controller, class C-7440; types 815 and 816 switch; type A auto starter; type 816 switch; 500 watt 32 volt turbine generator; type F. B. controller; type S duplex controller; type HK crane motor; 175 arc welding outfit.

Wheel Truing Brake Shoe Co., Detroit, Mich.—Samples of abrasive brake shoes.

Whiting Foundry Equipment Co., Harvey, Ill.—Working model of Whiting screw-jack locomotive hoist for wheeling and unwheeling locomotives; folios of drawings, photographs and literature covering complete line of cranes, foundry equipment and railway specialties, locomotive and coach hoists, turntable tractors and transfer tables.

## Officers Section 3, Mechanical, American Railroad Association.

The term of office of the Vice Chairman and seven members of the general committee, Section 3, Mechanical, American Rairoad Association, having expired in June, the committee on nominations, nominated the following, to serve until June, 1922:—

For Vice Chairman:—J. Coleman, Assistant to General Superintendent Motive Power and Car Department, Grand Trunk Ry.

For members of General Committee:—J. S. Lentz, Master Car Builder, Lehigh Valley Rd.; H. R. Warnock, General Superintendent Motive Power, Chicago, Milwaukee & St. Paul Ry.; C. E. Fuller, Superintendent Motive Power and Machinery, Union Pacific Rd.; W. Kells, General Superintendent Motive Power, Atlantic Coast Line Rd.; John Purcell, Assistant to Vice President, Atchison, Topeka & Santa Fe Rd.; H. L. Ingersoll, Assistant to President, New York Central Lines; J. J. Tatum, Superintendent Car Department, Baltimore & Ohio Rd.

The report was unanimously adopted on June 14. It was also resolved that the officers should be elected annually, instead of every two years, so that a greater number of members may enjoy the honor of being officers of the section.

## Interchange Rules Modified.

Section 3, Mechanical, American Railroad Association, issued the following circular May 28:—

Effective June 1, 1920, the following modifications are made in sections (k) and (o) in rule 3 of the 1919 Rules of Interchange: Rule 3, Sec (k) modified to read as follows: "After Mar. 1, 1910, no car will be accepted in interchange unless properly equipped with United States Safety Appliances or U.S. Safety Appliances, Standard, except cars moving home on car service orders for equipping with safety appliances. Cars will not be accepted from owner at any time unless equipped with U.S. Safety Appliances or U.S. Safety Appliances, Standard."

Rule 3, section (o), modified to read as follows: "Cars built after Nov. 1, 1920, will not be accepted in interchange unless equipped with 6 x 8 in. shank A. R. A. Standard Type D Couplers."

This circular should be considered as a supplement to the Rules of Interchange and necessary instructions issued to all concerned. These modifications to the Rules of Interchange will be incorporated in the next supplement to these rules.

# Birthdays of Transportation Men in July.

Many happy returns of the day to:

A. A. Allen, Vice President, Holden Co., Ltd., Montreal, formerly Master Mechanic, Timiskaming & Northern Ontario Ry., born at Grafton, Ont., July 7, 1870.

J. H. Black, ex-Superintendent, Timiskaming & Northern Ontario Ry., now at Toronto, born near Smiths Falls, Ont., July 8, 1874.

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., July 25, 1877.

D'Alton C. Coleman, Vice President, Western Lines, C.P.R., Winnipeg, born at Carleton Place, Ont., July 9, 1879.

G. C. Conn, ex-Freight Traffic Manager, Pere Marquette Ry., Detroit, Mich., now General Traffic Manager, Buick Motor Co., Flint, Mich., born at Woburn, Mass, July 1, 1867.

A. R. Curran, Paymaster, Eastern Lines, Canadian Northern Ry., Toronto, born there, July 3, 1877.

H. Darling, Locomotive Foreman, Grand Trunk Pacific Ry., Smithers, B.C., born in Northumberland, Eng., July 27, 1873.

A. H. Eager, Mechanical Superintendent, Western Lines, Canadian National Rys., Winnipeg, born at Waterloo, Que., July 15, 1868.

F. E. Hartshorn, Assistant Superintendent, Montreal Division, Quebec District, Canadian National Rys., Montreal, born at West Stewartstown, N.H., July 21, 1877.

S. J. Hungerford, Assistant Vice President, Canadian National Rys., Toronto, born at Bedford, Que., July 16, 1872.

C. W. Johnston, Assistant General Passenger Agent, G.T.R., Montreal, born at Actonvale, Que., July 27, 1879.

H. J. Lambkin, District Commissary Agent, Sleeping, Dining and Parlor Cars and News Service, Canadian National Rys., Winnipeg, born at Quebec, Que., July 25, 1881.

M. Kelly, Resident Engineer, Farnham Division, Quebec District, C.P.R., Farnham, born at Thamesville, Ont., July 6, 1878.

T. King, Superintendent, Detroit Division, Western Lines, G.T.R., Detroit, Mich., born at Dunbarton, Ont., July 18, 1869.

A. E. Lock, Superintendent Car Service, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Albany, N.Y., July 14, 1879.

G. A. McNicholl, Assistant General Freight and Passenger Agent, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at Montreal, July 31, 1876.

H. D. Mackenzie, Master Mechanic, Canadian National Rys., Edmundston, N.B., born at Churchville, N.S., July 22, 1864.

M. H. MacLeod, Vice President, Operation, Maintenance and Construction, Canadian National Rys., Toronto, born in Skye, Inverness-shire, Scotland, July 13, 1857.

J. M. Macrae, Assistant General Freight Agent, Canadian National Rys., Winnipeg, born at Stornoway, Scotland, July 31, 1884.

W. G. Manders, Assistant Freight Traffic Manager, Canadian National Rys., Winnipeg, born at Owen Sound, Ont., July 24, 1876.

Neil Marple, General Foreman, Michigan Central Rd., St. Thomas, Ont., born in McKillop Tp., Ont., July 1, 1860.

J. E. Morazain, General Superintenddent, Quebec District, Canadian National Rys., Quebec, born at Wheatland, Que., July 31, 1875.

P. C. Perry, Assistant Resident Engineer, Grand Trunk Pacific Ry., Regina, Sask., born at Fort William, Ont., July 27, 1889.

R. E. Perry, Assistant General Freight Agent, Canadian National Rys., Montreal, born at Drayton, Ont., July 5, 1876.

G. G. Ruel, General Counsel, Canadian National Rys., Toronto, born at St. John, N.B., July 5, 1866.

George Stephen, Freight Traffic Manager, Canadian National Rys., Toronto, born at Montreal, July 5, 1876.

H. G. Studd, Auditor for Europe, C.P.R., London, Eng., born at Tottenham, Eng., July 10, 1883.

Sir Thos. Tait, President, Fredericton & Grand Lake Ry. & Coal Co., Montreal, born at Melbourne, Que., July 24, 1864.

M. M. Todd, Vice President and Treasurer, Grand River Ry. and Lake Erie & Northern Ry., Galt, Ont., born there, July 22, 1891.

H. B. Walkem, Assistant Engineer, C.P.R., Vancouver, B.C., born at Montreal, July 31, 1858.

G. A. Walton, General Passenger Agent, Western Lines, C.P.R., Winnipeg, born at Montreal, July 17, 1881.

R. H. Webster, Commercial Agent, G.T.R., Moncton, N.B., born at Pictou, N.S., July 2, 1885.

# Canadian Northern Railway Co's Annual Report.

The Canadian Northern Ry. Co.'s directors' report, addressed to the shareholders, has been issued over the signature of D. B. Hanna, President, as follows:—

Attention is particularly directed to the fact that this report covers only the operations of the Canadian Northern Railway lines, forming a part of the Canadian National Rys.

The directors submit herewith the fifth annual report covering the working of the Canadian Northern Ry. System for the year ended Dec. 31, 1919.

| | | |
|---|---|---|
| Gross earnings— | | |
| Passenger traffic | | $10,775,708.46 |
| Freight traffic | | 39,175,552.09 |
| Express, mail and telegraphs | | 1,588,902.18 |
| Miscellaneous earnings | | 2,022,014.84 |
| Interest and profits from elevator and other subsidiary companies, investments, etc. | | 1,791,752.61 |
| | | $55,353,930.18 |
| Working expenses | $60,034,023.92 | |
| Hire of equipment, taxes, rentals and miscellaneous charges | 1,020,553.96 | |
| | | $61,054,577.88 |
| Deficit | | $ 5,700,647.70 |
| Interest charges | | 19,969,710.36 |
| Total deficit | | $25,670,358.06 |

The total mileage operated at the end of the year was 9,685.7 compared with 9,566.5 at the end of 1918, an increase of 119.2 miles. The average mileage in operation throughout the year was 9,636.9.

**Operating Revenues** for 1919 increased by $6,252,165.66 over 1918, or 13.22% The increases were derived from

| | | |
|---|---|---|
| Passenger traffic | $2,951,264.02 | 37.72% |
| Freight traffic | 2,439,682.63 | 6.64% |
| Other | 861,219.01 | 31.32% |

**Traffic Movement.**—The increase in passenger earnings in 1919 as compared with 1918 is due in part to the removal of restrictions on travel applicable to war time traffic, augmented by the movement of troops for demobilization. As a result of the cessation of activities dependent on the war, and the consequent cancellation of government orders for munitions, foodstuffs, etc., a decline in business took place in the first half of the year. This was inevitable in a period of transition from war to peace. The loss in freight tonnage from Jan. 1 to July 31 was 1,500,000 tons, after which the tonnage showed an increase over 1918, to the extent that by the end of the year the net loss in tonnage was cut down to 850,327 tons. A gratifying feature of the situation is the additional long haul business, which is indicated by the increase of 23 miles in the average distance each ton of freight was hauled. While movements of live stock, lumber and building material show gains over last year, the declines in grain, coal and miscellaneous traffic more than offset these gains, resulting in loss of tonnage already mentioned as compared with 1918. The decline in coal traffic is due to the loss of shipments from Drumheller, Cardiff and Wayne during June, July and August, caused by the strike of the miners in the Alberta coal fields.

**Operating Expenses.**—The increase of $15,971,073.98 in operating expenses is nearly all due to higher wages. The general large increases in rates of pay granted during 1918 under the McAdoo series of advances which were reflected only in part in the operating expenses for the year ended Dec. 31, 1918, show their full effect in this year's figures, and the total is increased by the effect of additional supplements issued during 1919 by the United States Railroad Administration and which, under arrangement between the Canadian Railway War Board and the Dominion Government, have been applied to the wages of railway employes in Canada. The total increase in expenses due to wages for the year was $12,350,226.60, or 77.31% of the total increase in operating expenses.

The deficit of $5,700,647.70 is after crediting miscellaneous earnings and charging deductions from income. The actual operating deficit for the year is $6,471,846.35, against net earnings of $3,247,061.97 for 1918, and net earnings of $7,443,369.41 for 1917. This loss between 1917 and 1919 of nearly $14,000,000 in net earnings is a direct reflection of the improper relation existing between earnings and operating expenses. During these two years the abnormally large wage increases more than represent the loss in net earnings, as the following comparison of pay-roll totals shows:

| 1917 | 1918 | Inc. % | 1919 | In. % |
|---|---|---|---|---|
| $20,871,397 | $29,269,906 | 40.24 | $41,620,133 | 42.19 |

For every dollar earned in the last year the railway had to pay out over 75c. in wages.

As all elements of the railway's expenses enter into the production of transportation in the shape of train miles, the increase in the cost of running a train one mile tells better than any other unit the story of the railway's inability to make ends meet, under conditions such as have existed in the past two years. When the large increases in the cost of materials and supplies are also considered, the difficulties of the situation will be more fully appreciated. The cost of running a train one mile increased from $1.98 in 1917 to $2.65 in 1918 and to $3.36 in 1919, the latter figure being an increase of 27% over 1918 and 70% over the cost in 1917. Gross earnings per mile of line increased, from $4,396 in 1917, to $5,005 in 1918, and to $5,558 in 1919, the 1919 gross per mile being only 10% over 1918 and 25% over 1917. Under these conditions, and with less than 1% increase in train service, the net result for the last two years has been to convert net earnings of $789.08 a mile of line in 1917, and $343.53 in 1918, to a deficit of $671.63 a mile for 1919. This change in the net earnings situation is entirely due to the conditions referred to in the preceding paragraphs.

In comparing the train mile expenses for the last three years, the higher percentage of expenses devoted to maintenance, particularly in 1919, is worth noting, as indicating that a large percentage of the expenses is going towards the improvement of the roadway, structures and rolling stock. The cessation of hostilities having appreciably relieved the labor situation, your company was enabled during 1919 to commence overtaking considerable maintenance of roadway, structures and equipment work which (as referred to in previous reports) had been unavoidably deferred by war conditions. The amount of money spent on deferred maintenance through the year is estimated at over $4,500,000, which is included in operating expenses.

The increase in revenue, which higher rates were expected to bring, has been greatly cut down by the falling off in tonnage of certain commodities, as compared with 1917, which, in common with other railways in Canada, has affected your line and has been most noticeable in respect to grain traffic. This loss of tonnage, and the extra expenditures, due to taking up in part the deferred maintenance, with the conditions already referred to in respect to wages, etc., precluded the possibility of making any net earnings without a readjustment of transportation rates.

**Freight Rates.**—The existing improper relationship between earnings and operating expenses is a condition which fortunately may be regarded as transitory. It is recognized in the United States and Great Britain, as well as in Canada, that the railways cannot continue to provide transportation at practically pre-war rates. Canadian and U.S. freight rates being generally on an equality, the general percentage of increase in the U.S. will, in the opinion of your directors, largely determine what the increase in Canada should be. From the statistics embodied in the report, it is clear that existing rates do not provide an adequate return. With the U.S. railways now handed back to the private owners, with legislation passed providing that they are to receive "a fair return upon the aggregate value of the railway property" and this fair return for two years fixed at 5½% a year and provision for an additional half of 1% for equipment, betterments, etc., there is every reason to believe that freight rates will be fairly adjusted in the near future.

**Land Sales** for the year were 79,053 acres for $1,535,608.44, an average of $19.42 an acre, compared with an average of $19.45 for 1918. During the same period sales previously entered into, aggregating 32,403 acres, were, by mutual agreement, cancelled, so that the acreage of land available for sale has been decreased by 46,650 acres, leaving a total of 772,309 acres unsold.

**Additional car trust obligations** were created during last year to the extent of $22,500,000 for the purchase of equipment of different kinds, and $4,705,000 was repaid in respect of previous obligations, thus making the net increase $17,795,000, and leaving the total amount of car trust obligations outstanding at Dec. 31, 1919, $32,936,000.

**New Equipment.**—Motive power and other rolling stock ordered in 1919 were as follows:—

| | |
|---|---|
| 25 | Pacific type locomotives. |
| 25 | Six-wheel switch locomotives. |
| 750 | Box cars. |
| 800 | Wooden stock cars. |
| 550 | Dump cars. |
| 500 | Flat cars. |
| 250 | Hart ballast cars. |
| 150 | Refrigerator cars. |
| 30 | Steel baggage cars. |
| 6 | Flangers. |
| 130 | Colonist cars. |
| 20 | Tourist cars. |
| 18 | Standard sleepers. |
| 13 | Compartment observation cars. |
| 20 | First class cars. |
| 20 | Mail cars. |
| 9 | Dining cars. |
| 6 | Snow ploughs. |
| 5 | Cabooses. |

**Construction and Betterments.**—As referred to in your directors' previous report, the construction programme for 1919 contemplated the completion of certain branch lines in Western Canada which were under construction at the outbreak of the war. Work was done on the following lines:—Acadia Valley extension, Jackfish Lake extension, Onoway extension, Alsask southeasterly, Luck Lake extension, Peebles-Lampman extension, Amaranth northerly, Melfort-Humbolt extension, Gravelbourg extension, Eston southeasterly, Melfort northeasterly, Thunderhill extension, Hanna southeasterly, Oliver northeasterly, Kamloops-Kelowna-Lumby branch. While conditions governing labor and materials

prevented as great progress being made on these lines last year as was hoped for, the major portion of the work on these branches is expected to be completed this year.

Work on the improvement and betterment programme was carried on throughout the year; 550 miles of track had existing rails changed to heavier section; 101 temporary structures were replaced with permanent work; 11 timber trestles were partly filled and diversions at Falding and Grenville and on Sudbury Subdivision were completed. The work of replacing the line along the St. Lawrence River, west of Quebec, washed out by the tidal wave of 1918, was nearly completed. Much additional trackage for operating purposes was built, viz.: 45 passing tracks, 19 siding extensions, 32 transfer, storage and other tracks. Among the buildings erected were 27 stations, 6 freight sheds, 39 section houses, 36 bunk houses, 3 express buildings. Additions and improvements were made to various roundhouses, machine and car shops. Good progress was made on reballasting. Important structures completed during the year were the Vancouver passenger terminal and the St. Charles River bridge at Quebec. The value of these improvements and betterments has been already demonstrated in improved operating conditions. Your directors are pleased to report that upon their recommendations amounts for expenditure on capital account have been included in the government's estimates for the year, which will enable the improvement and betterment programme to be continued, thus equipping your system to better perform the transportation service of the country and particularly to handle economically those increases in traffic which, it is your directors' firm belief, will result coincident with the progress of the Dominion and which may largely be expected to take place in the areas served by your lines.

Canadian Government Merchant Marine Ltd.—Reference was made in last year's annual report to the ocean steamship service established through the Canadian Government Merchant Marine, Ltd. This service has continued with success, and as new ships are delivered the service will be enlarged and extended. To date 63 vessels have been ordered by the Marine Department, with a total d.w. tonnage of 380,615 tons. Of this number 19 were in service at Dec. 31, 1919, and since that date several additional ships have been delivered by the builders and put in operation. While the builders have been delayed in the construction of these ships, due to various causes, so that it is difficult to estimate deliveries definitely, yet it is hoped that by the end of the year there will be nearly 60 ships in service. The operation of the services established has, up to date, shown a substantial return. The Canadian National Rys. also benefit from the earnings on goods moving to and from ocean ports in connection with the services operated by these ships.

Outlook for the Future.—Your directors view the future with the confidence based on knowledge of the particularly favorable location of the system's lines and the general good character of the country served. The railway property of your system has invested in it not less than $550,000,000. It is not held by your directors that because the year's operations resulted in a deficit, the value of this great investment is impaired. The conditions which have resulted in the present improper relation between earnings and expenses have been stated. Under existing rates U.S. railways are acknowledged to be going behind their prewar record at about the rate of $1,000,000 a day. The increase in the value of the services performed by your railway may be illustrated by the rise in wholesale prices, and when this is contrasted with the almost stationary ton mile and passenger mile receipts, the inadequacy of the present rates needs no further comment.

The prospect in the near future of having the Grand Trunk System lines co-ordinated with those of the Canadian Northern and other government owned railways presents favorable opportunities of increased traffic for your system; and the benefits which will result from the inclusion of the Grand Trunk lines in the national system, while difficult to definitely estimate, are certain to prove substantial. As noted in previous reports, the Canadian Northern Ry. operates under a great disadvantage in not having a Niagara frontier line and connection in Ontario with U.S. lines. These the Grand Trunk will provide. The consolidation will also remove restrictions on traffic interchange to territory served by the Grand Trunk, which will certainly prove to be of great benefit to the national system.

Traffic returns since Jan. 1 indicate that tonnage on your lines is running about 8½% over the movement in the same period last year. This is a particularly good showing, in view of the much colder weather experienced this winter. There is no doubt that housing facilities are much behind the demand in practically all communities, and a large movement in building materials may be expected. There are large road building programmes under way, which should also produce increased tonnage in certain commodities. Immigration, which on the outbreak of the war fell away rapidly is, according to late reports, reviving. The return to pre-war immigration figures would have a most beneficial effect in restoring those conditions of expansion which before the war were so general along much of your western mileage. The live stock industry in western Canada continues to thrive, and is developing most remarkably. The Province of Saskatchewan now ranks first in the production of horses in Canada.

The importance of the Drumheller coal field development to western Canada, and particularly to the areas served by your line, was well demonstrated when the supply of coal from U.S. mines was interrupted through the general strike which occurred in Oct., 1919. The situation showed how generally dependent many other sections of this country are on the U.S. for supplies of coal. The double tracking of the line between Drumheller and Munson Jct. has been completed, and the output of the 23 mines in the district is being distributed to a constantly widening field of consumers, with increasing gross revenue to your company.

It is a matter of congratulation that the Prince of Wales has chosen the purchase of a ranch in Western Canada as one means of practically identifying himself with Canadian development, and as a permanent reminder of his first visit to Canada. Your directors cannot let this opportunity pass of expressing the hope that the royal example will be followed by many from Great Britain, not only in the matter of making a tour of Canada, but in acquiring property here. Your directors feel this can only result in good for the Imperial cause. The visit of the Prince of Wales to various points on the lines of your system was successfully accomplished, and the entire Canadian tour was one unbroken success.

It is with the greatest regret that your directors have to record the death on Jan. 24, 1920, of Z. A. Lash, K.C., L.LD., Senior Counsel of your company. Mr. Lash, as chief legal adviser of the company for nearly 20 years, gave invaluable advice and counsel to the executive, during the construction and development period of the railway, and extended this service to your directors up to the time of his death.

Organization and Staff.—Your directors are glad to report that the rearrangement of official personnel, and general amalgamation of staff with that of the Canadian Government Rys. has proved to be most satisfactory. The two systems have worked together as one, and there has been the fullest co-operation between employes and management, and the board desires to express its thanks for the loyal and efficient services rendered during the year.

**Income Statement for year ended Dec. 31, 1919.**

| | | |
|---|---|---|
| Revenue | $53,562,177.57 | |
| Subsidiary miscellaneous earnings | 1,791,752.61 | $55,353,930.18 |
| Working expenses | $60,034,023.92 | |
| Taxes, rentals, joint facilities, etc. | 1,020,553.96 | 61,054,577.88 |
| Loss on operating | | $ 5,700,647.70 |
| Fixed charges— | | |
| Canadian Northern Ry. | 8,012,969.65 | |
| Affiliated Companies. | 4,895,112.71 | |
| Interest on demand and short term notes & loans— | | |
| Government | 6,939,373.68 | |
| Other (net balance). | 122,254.32 | 19,969,710.36 |
| Deficit carried to profit and loss statement | | $25,670,358.06 |

**Profit and Loss Statement, Dec. 31, 1919.**

| | | |
|---|---|---|
| Deficit on income account for the year | $25,670,358.06 | |
| Discount, etc., on funded debt | 472,682.09 | |
| Delayed income, debits and credits, debit balance | 1,324,711.98 | $27,467,752.13 |
| Deduct surplus brought forward Dec. | | |

**Operating Revenues.**

| % | 1919 | Class | 1918 | % |
|---|---|---|---|---|
| 20.12 | $10,775,708.46 | Passenger | $ 7,824,444.44 | 16.54 |
| 73.14 | 39,175,552.09 | Freight | 36,735,869.46 | 77.65 |
| .70 | 374,926.26 | Mails | 245,187.12 | .52 |
| 2.26 | 1,209,645.65 | Express | 964,617.55 | 2.04 |
| 3.78 | 2,026,345.11 | Miscellaneous | 1,539,893.34 | 3.25 |
| 100.00 | $53,562,177.57 | Total | $47,310,011.91 | 100.00 |

**Operating Expenses.**

| % | 1919 | Class | 1918 | % |
|---|---|---|---|---|
| 26.49 | $15,905,058.62 | Maintenance of way and structures | $ 9,060,264.79 | 20.56 |
| 19.27 | 11,569,896.52 | Maintenance of equipment | 8,498,673.11 | 19.29 |
| 1.72 | 1,031,282.13 | Traffic expenses | 797,181.68 | 1.81 |
| 48.31 | 29,002,877.63 | Transportation expenses | 23,907,348.28 | 54.26 |
| 1.60 | 958,449.37 | Miscellaneous operations | 576,071.12 | 1.31 |
| 2.61 | 1,566,459.65 | General expenses | 1,223,410.96 | 2.77 |
| 100.00 | $60,034,023.92 | Total | $44,062,949.94 | 100.00 |

**Summary of Revenues and Expenses.**

| % | 1919 | Class | 1918 | % |
|---|---|---|---|---|
| | $53,562,177.57 | Operating revenues | $47,310,011.91 | |
| 112.08 | 60,034,023.92 | Operating expenses | 44,062,949.94 | 93.13 |
| —12.08 | —6,471,846.35 | Net earnings | 3,247,061.97 | 6.87 |
| 100.00 | | | | 100.00 |

| | |
|---|---|
| 31, 1918 . | 17,932,224.61 |
| Total deficit at Dec. 31, 1919, carried to balance sheet | $9,535,527.52 |

**Description of Freight Carried.**

| | 1919 | 1918 |
|---|---|---|
| Flour, sacks (100 lb.) | 8,978,640 | 8,904,498 |
| Grain, bush. . | 91,373,574 | 93,985,078 |
| Live stock, head (all kinds) | 834,991 | 654,583 |
| Logs and lumber, ft. (m.f) | 1,928,698 | 1,614,829 |
| Firewood, cords . | 329,138 | 362,118 |
| Coal, tons . . | 2,174,207 | 2,373,985 |
| Immigrants' effects, cars | 4,728 | 5,279 |
| Building material (lime, stone, brick, sand, etc.) cars . . | 34,076 | 29,794 |
| Miscellaneous, tons . | 3,142,961 | 4,048,065 |

**Earnings, Expenses and Net Earnings per mile operated.**

| Year | Average miles Operated | Earnings | Expenses | Net Earnings |
|---|---|---|---|---|
| 1917 | 9,433 | $4,396.27 | $3,607.19 | +$789.08 |
| 1918 | 9,452 | 5,005.29 | 4,661.76 | + 343.53 |
| 1919 | 9,636 | 5,558.55 | 6,230.18 | — 671.63 |

The amount required per mile of road to pay fixed charges (including leased lines), was as follows:—1919, $2,072.41; 1918, $1,093.60; 1917, $1,695.24.

**Passenger, Freight and Miscellaneous Statistics.**

| | 1919 | 1918 |
|---|---|---|
| Passenger traffic— | | |
| Passengers carried (earning revenue) | 4,925,547 | 4,114,965 |
| Passengers carried one mile . . | 344,773,029 | 288,067,800 |
| Passengers carried one mile per mile of road.. | 36,256 | 30,477 |
| Average distance carried.. | 70.00 | 70.01 |
| Total passenger revenue $ | 9,629,460.01 | 7,128,141.55 |
| Average amount received per passenger .....$ | 1.95.500 | 1.73.225 |
| Average amount received per passenger per mile . . .....Cts. | 2.793 | 2.474 |
| Total passenger train earnings . . .....$ | 11,811,612.85 | 8,783,084.63 |
| Passenger train earnings per train mile.....$ | 1.53.575 | 1.28.903 |
| Freight traffic— | | |
| Revenue tons carried..... | 12,439,314 | 13,289,641 |
| Revenue tons carried one mile . . ..... | 4,046,023,363 | 4,021,275,963 |
| Revenue tons carried one mile per mile of road | 425,472 | 425,442 |
| Average distance haul of one ton . . ..... | 325.26 | 302.59 |
| Total freight revenue $ | 38,276,419.06 | 35,674,816.63 |
| Average amount received for each ton of freight . . .....$ | 3.07.705 | 2.68.441 |
| Average revenue per ton per mile . .....Cts. | .946 | .887 |
| Total freight train earnings . . .....$ | 39,010,667.80 | $36,719,136.76 |
| Freight train earnings per train mile.....$ | 3.34.877 | 3.24.220 |
| Train mileage— | | |
| Mileage of passenger trains . . ..... | 5,864,271 | 5,044,607 |
| Mileage of freight trains | 9,822,281 | 9,556,238 |
| Mileage of mixed trains | 1,826,898 | 1,769,124 |
| Expenses per traffic train mile— | | |
| Maintenance of way and structures . . .....Cts. | 89.45 | 54.67 |
| Maintenance of equipment . . .....Cts. | 65.05 | 51.12 |
| Traffic expenses .....Cts. | 5.82 | 4.79 |
| Transportation expenses, rail . . .....$ | 1.61.96 | 1.43.69 |
| Transportation expenses, water . . .....Cts. | 0.11 | — |
| Miscellaneous operations . . .....Cts. | 5.34 | 3.52 |
| General expenses .....Cts. | 8.51 | 7.10 |
| Total . . .....$ | 3.36.24 | 2.64.89 |

**Operations of Electric Lines not included in above Statement.**

| | | |
|---|---|---|
| Electric line statistics— | | |
| Passengers carried (earning revenue) . . ..... | 11,281,694 | 6,036,625 |
| Total passenger revenue . . ..... | 909,985.72 | 504,319.84 |
| Revenue tons carried ..... | 383,130 | 409,704 |
| Total freight revenue ....$ | 280,489.07 | $252,756.20 |

The total mileage operated in 1919 was 9.685.7. viz.: owned by C.N.R. Co., 9,-183.1; joint running rights, 155.3; Northern Pacific lines in Manitoba, leased, 347.3.

**Cornwall Bridge Assessment.** — The Ontario Legislature has confirmed a Cornwall Tp. bylaw validating an agreement between the township and the Ottawa & New York Ry., fixing the amount of the assessment of the portion of the company's bridge across the St. Lawrence River at Cornwall, at $150,000 for ten years.

# Parcel Post Rates on Mail Order Business.

The following motion by Senator W. Proudfoot, was passed by the Senate April 28:—"That an order do issue for a return of the evidence and other proceedings submitted before the Board of Railway Commissioners at the sessions at Ottawa on Oct. 3, 1911, Nov. 7, 1911, and Mar. 18, 1919, relating to freight rates and all matters before said board on said dates. 2. A copy of the report made by said board to the Government as the result of said investigations. 3. A copy of the postal rate agreement or agreements existing between the government and the railway companies for parcel post service, including a statement or copy of the rates charged by the government railways. 4. A copy of the report made by the Board of Railway Commissioners to the government on the contracts between the government and the railway companies as to the rates charged for the postal services. 5. Does the said report show (or is the government aware) that the rates fixed and paid are less than it cost the railway companies to perform the services? 6. What quantity of mail is carried annually by parcel post?"

In moving the resolution, Senator Proudfoot said:—"The object of the investigations above referred to, as I understand, was to ascertain whether or not certain commodities were being carried at certain rates. I understand that a report was made by the Board of Railway Commissioners to the government, but it has not yet been made public, and it is for the purpose of having it brought down that I make this motion. Another object of the motion is to enable me to deal with the question of postal rates, in so far as they affect mail order houses. The mail order business is one of great importance to the people. When in the Ontario legislature, I advocated the imposition of a tax on mail order houses in each municipality; that is to say, if they sold by mail order in certain townships, or in certain towns or villages, they should pay a tax based on the business they did in each municipality. It is not fair that they should do business in a municipality and pay nothing in the way of taxes to the municipality, while the merchants there are obliged to pay taxes and other rates toward the upkeep of the municipality. The mail order business is carried on very extensively throughout the Dominion, and, according to my information, the mail order houses have been securing a great advantage over the merchants in the country districts. The question then arises, how far is the government responsible for enabling the mail order houses to carry on business? We find that on Mar. 15, 1918, freight rates were advanced 15%, and that on Aug. 12, 1918, they were again increased 25%. There was also an increase in the rates on various commodities on all the railways. The salaries of those engaged in the mail service were also increased, and in that way the cost of transportation was increased. My information is to the effect that, although those increases were made, nevertheless the postal rates were not increased, and that therefore the mail order houses were able to carry on business at practically what it cost them to do so prior to the increase in freight rates. If that is so, it is unfair discrimination in favor of the mail order house, and it is a kind of discrimination which should be put an end to. We must consider the effect it has on business in the rural municipalities and in the towns and villages. We find throughout the length and breadth of the land that the country stores are gradually being driven out of business by unjust competition. I say it is unjust competition when mail order houses are enabled to ship goods into these municipalities at less than it costs the country to provide the carrying of these goods. They are discriminated against, first, in so far as the railways are concerned, and, secondly, in so far as the government is concerned. The railways are carrying the mail order business at less than cost, and the government is providing the means for carrying it at less than cost. The result is, as an examination will show, the government of this country is handing over every year millions of dollars to the mail order houses. It would not be so bad if the general public were getting the benefit, but the public as a whole are not getting the benefit of the millions that are handed out in this way.

"The Minister of Labor, at a meeting in, I think, Ottawa last year, made the statement that the government was bonusing the newspapers of Canada to the extent of about $6,000,000 a year by carrying them at less than the cost of transportation. I am not making any complaint in that respect. There may be some justification for newspapers being carried in that way. Newspapers are supposed to be a means of educating the people and of disseminating the news from one end of the country to the other. That being so, there is an excuse for the government spending money in that way. But there is no excuse in permitting one section of the people to secure an advantage over others. If the country stores had been allowed to go on as they did in years past, many of the young people in the country would have found it to their advantage to remain at home. The money would be kept in circulation in their immediate neiughborhood. Besides, those localities would not be entirely rural districts, as they are being made by the change which has been gradually brought about in the mode of business by the mail order houses. No one objects to fair competition, but what people do object to, and I think they have a right to it, is unfair competition; and the competition is unfair when one class secures an advantage over another, at the expense of the whole public.

"The object in desiring to distinguish between the provinces is to ascertain what amount of mail order business is being done by the various houses, say in Ontario. We can in that way ascertain whether the mail order business is being carried on more extensively in Ontario than in any of the other provinces; and if that is the case, and I am correct in my surmise that this service is being carried on at a loss to the country, then Ontario is securing an advantage over the rest of the Dominion. If the service is being performed at a loss, the sooner the government makes a change in that respect the better. Otherwise the same unfair conditions will continue in the future as in the past."

**British Railway Rates.**—The Minister for Transportation is reported to have stated in the British House of Commons June 14 that a further increase in railway rates cannot be avoided.

# Demurrage not Chargeable Where Delays Caused by Customs Officials.

Commissioner A. S. Goodeve, of the Board of Railway Commissioners, gave the following opinion April 28 on applications for an informal opinion of the board in the matter of the right of railway companies to collect demurrage, or storage, under circumstances where cars are delayed by Customs and the testing or inspection of the goods in the car.

There are two applications upon this file, in both of which the same principle is involved. The first is from W. J. Collins, Manager, Canadian Car Demurrage Bureau, in connection with a carload of lima beans, apparently Asiatic, consigned to Montreal from 60th St., New York, ex s.s. Port Albany from London, and which arrived in Montreal Feb. 9, 1920, and was released by the appraiser on Feb. 19. The application is for an informal ruling of this board, in the matter of the right of the railway company to collect demurrage, or storage, under the circumstances where cars are delayed by customs authorities and the testing or inspection of the goods in the car. Ten dollars demurrage was assessed on this car, which the consignee, the Universal Importing Co., refused to pay, on the ground that the Customs Department would not allow it to take delivery of the car until the beans were tested by the Chief Analyst at Ottawa. The Superintendent of the Car Service Bureau, F. Price, wrote Mr. Costigan, Customs Department, Inland Revenue, Montreal, April 5, as follows: "We respectfully refer you to the enclosed papers covering delay to car 43909 at Montreal between Feb. 9 and 16, 1920. This car arrived Montreal Feb. 9, and it is claimed by the consignee that the Customs Department would not allow it to take delivery of the car until the shipment, which consisted of beans, had been tested by the Chief Aanalyst at Ottawa. Note letter from appraiser, O'Shea, and kindly advise exact date this shipment was released by Customs Department." To which Mr. Costigan replied, April 6: "Car 43909 was released on report of analysis under date of Feb. 19, 1920." This inspection was in compliance with a circular issued by the Customs Department, Jan. 28, 1920, instructing all collectors of customs to withhold delivery of East India, or Oriental beans, or beans of Asiatic or East India origin, pending a receipt of a report from the authorities of the Health Department.

The second application is the complaint of the Canada Seed Co., Toronto, per Agriculture Department, Canada (Seed Commissioner) in connection with a carload of clover seed consigned to the Canada Seed Co., Brantford, Ont., and held for inspection under the seed importation regulations of the Agriculture Department. These regulations were contained in a circular issued to collectors of customs throughout Canada, Oct. 26, 1918. This car, 11840, was held in bond from Sept. 17 to 29, 1919, at Brantford, and $30 demurrage charges assessed against it. The following letter from the Customs Collector at Brantford to the G.T.R. agent makes the situation clear: "The papers for this car arrived in Brantford from Toronto Sept. 19, 1919, being sworn to at Toronto Sept. 18, 1919. Samples drawn according to then Customs regulations sent to Agriculture Department to test as to purity. Instructions received from Agriculture Department, dated Sept. 27, 1919, received here Sept. 29, to release shipment, and papers sent same date to G.T.R. to release car."

It is quite clear from the written statements of J. T. Costigan, General Inspector, and J. W. Spence, Collector, that in both these cases the delay was due to government regulations. These regulations are general in their application; and the delay to the two cars under consideration was not due to any inherent cause in these two particular consignments. I am, therefore, of the opinion that under Canadian Car Demurrage Rule 8, which is as follows: "Customs or inspection delays.—Demurrage shall not be collected from the consignee for any delays for which government .. .. .. officials may be responsible," the railway company is not entitled to collect demurrage.

Assistant Chief Commissioner McLean concurred as follows:—Rule 8 of the Demurrage Rules, which is headed "Customs or Inspection Delays," as it stands, is ambiguous. It is open to two constructions: (1) that the exemption from demurrage "for which government .. .. .. officials may be responsible" is an exemption arising out of neglect on the part of said officials; (2) that the exemption may arise where there is a delay from general governmental regulations, under which the government officials are working. The position taken by the Canadian Car Demurrage Bureau is that the exemption applies only where the delay is attributable to an act or neglect of Customs officials. It may be that the rule is not clear in wording in regard to its intent. It is, however, an established rule of construction in regard to tariffs, classifications, etc., that where the rule or item is ambiguous, the rule or item is to be construed strictly against the railway. Looking at the matter from this standpoint, I agree in Commissioner Goodeve's finding.

## Dismissal and Reinstatement of Intercolonial Railway Conductor.

The following questions were asked in the House of Commons recently by J. B. Bourassa, M.P. for Levis, Que., and answered by the Minister of Railways, Hon. J. D. Reid.

"Has Philippe Boucher, of Charny, railway conductor, Intercolonial Ry., who was arrested for theft of merchandise from the G.T.R. in Montreal last autumn, and found guilty, been reinstated in his former position?" Answer: "He was not arrested for stealing from the G.T.R., but he was arrested by a G.T.R. policeman for having in his possession blankets belonging to Canadian Government Railways. He has since been reinstated."

"If so, how long after his offence was he reinstated?" Answer: "Twenty-six days."

"At whose request was he reinstated?" Answer: "At the request of the General Superintendent, after he had thoroughly investigated the matter and found that Boucher was not attempting to steal."

**Nepigon Terminals Ltd.** has been incorporated under the Ontario Companies Act with authorized capital of $40,000, and office at Port Arthur, to deal in lands and buildings for various purposes. A. J. McComber is one of the provisional directors.

## The West Indies Cable.

When an item of $38,933.33, for West Indies cable, in the estimates for this fiscal year, was under discussion in the House of Commons recently, W. Duff, M.P. for Lunenburg, N.S., asked if the government pays that amount towards cable service with the West Indies.

Sir GEORGE FOSTER replied: Yes. I think about eight years ago an arrangement was made between the British Government, the United States Government and the West India Islands Government, which had two things in view, an extension of the cable service, and a cheapening of the costs of that service. The subsidy that was given was shared in equal proportions by Great Britain and Canada. I think it was $8,000 for each, and the West India administration contributed $10,000 a year. That subsidy has yet three years, I think, to run. A cheapening in the cost was brought about at once, and has continued up to this time. That cheapening runs from Halifax and other Canadian points, all the way through down to Bermuda, and through the other lines down as far as Demerara and connecting all that outer rim of the islands. That service has within the last two years been a good deal troubled and interrupted, and I have had the fullest explanations and information with reference to it. The service has been intermittent, and the condition has been extremely annoying to business men, but on the other hand it has been up against the hardest luck that I have known in connection with the service. Owing to the war, and other circumstances, it was absolutely impossible to get repair ships, and that was where the trouble arose. I got into communication with the British Post Office authorities, who manage the service so far as Great Britain is concerned, and a thorough examination is being made into the matter. That also will be one of the questions which will come up for discussion when our conference meets in Ottawa.

Mr. DUFF said:—I am very glad to hear that the cable service will be resumed, because for the last year or so it has been very unsatisfactory. Sometimes it takes as much as a week for a cable to go from Canada to the West Indies and the reply to come back, and that seriously interferes with business. It is absolutely necessary for business men that their cables shall arrive at their destinations quickly, so that they can get replies as soon as possible. Competition is keen, and it is necessary to catch the steamships that are sailing between Canada and the West Indies, and sometimes the cables are only sent 24 hours before the steamer sails from Halifax or St. John.

## Grain Inspected at Western Points.

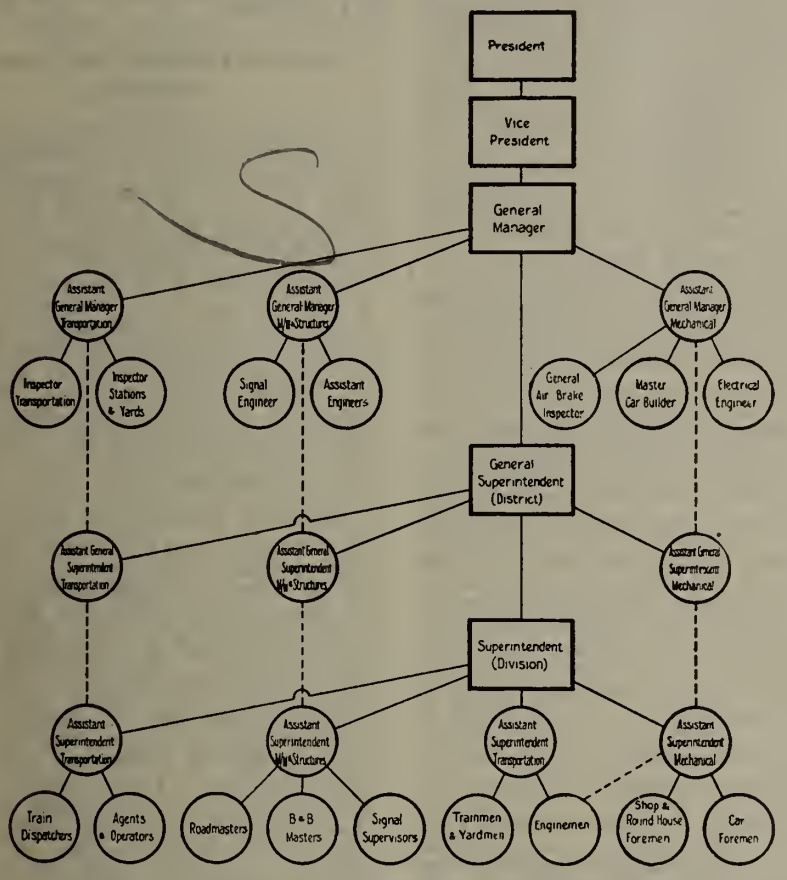
The following figures, compiled by the Dominion Bureau of Statistics' Internal Trade Division, show the number of cars of grain inspected at Winnipeg and other points on the Western Division during May, and during 9 months ended May 31, 1920 and 1919:—

| | May 1920 | 9 mons. to May 31, 1920 | 9 mons. to May 31, 1919 |
|---|---|---|---|
| Canadian National Rys... | 3,854 | 48,835 | 45,634 |
| Canadian Pacific Ry. .... | 2,757 | 65,789 | 61,761 |
| Grand Trunk Pacific Ry. | 654 | 19,021 | 14,339 |
| Great Northern Ry. ..... | 39 | 534 | 850 |
| Totals . . ..... | 7,304 | 134,179 | 122,584 |

# Railway Operation and Maintenance Under a Divisional Organization.

By Alfred Price, General Manager, Eastern Lines, Canadian Pacific Railway.

In the very early days of railroading on this continent there was no necessity for an elaborate official organization. One can imagine that the rules and methods of operation first adopted were somewhat similar to those now in effect on rural electric lines. The trains were then few in number; they cannot now be satisfactorily handled on single track lines. The locomotives weighed from 4 to 6 tons; the latest achievement weighs 427 tons. The passenger cars were simply stage coaches coupled together; they are now elegant palaces on wheels. The rails were short wooden beams, covered with strap iron, and after a short use failed mechanically under 6 ton locomotives; they are now from 30 to 41 ft. long, and the number of miles of railway under operation, the extent of the territory served, and the prodigious sums of money invested in property, material and equipment, it is almost impossible to realize that the first railroad in the United States was built only about 90 years ago. Since then, not only have the achievements in railway building been stupendous, and the improvement in equipment and facilities marvelous, but the organization which has been developed to handle the immense traffic over an interlaced system of rails, with its complicated movements, has been amazing. In this development each railway company was at first a law unto itself and worked independently. All roads were not built




**Railway Operation and Maintenance under a Divisional Organization.**

are made of steel by the Bessemer, open hearth or other processes. In those good old days the trains were known as accommodation trains. The passengers were accommodating, for it is recorded that they habitually alighted from trains on steep ascending grades and climbed to the summits on foot; the modern passengers object to climb even into upper berths. But as traffic increased, trains multiplied, locomotives and cars were enlarged, and all railway facilities, equipment and appurtenances, which at the beginning were exceedingly crude, by a continuous series of improvements reached their present degree of excellence. Coincident with this great physical change there was naturally and necessarily a development in methods of operation, varying from time to time as traffic increased and conditions altered.

As one surveys today, the whole railway field on this continent, and considers to the same gauge, and the interchange of cars was thereby rendered impossible. The necessity of standardizing the gauge was therefore recognized. Every railway ran its trains according to the local time of the city in which its head offices were located, or on some other arbitrary time. The various railways had their own system of operating rules; and in giving signals by hand or lamp, what was a "stop" signal on some roads was a "proceed" or "back-up" signal on others.

The need for reaching agreements on many matters and the desirability of standardizing methods, brought railway officials together, for an exchange of ideas and railway associations were the outgrowth of these meetings. Of the many railway associations in existence today the most important, although not the oldest, is the American Railroad Association, which was organized in 1872, its object being the discussion and recommendation of methods for the management of American railways. Probably the oldest organization of the kind is the Master Car Builders' Association, formed in 1867. Its objects are the advancement of knowledge concerning the construction, repair and service of railway cars, to bring about uniformity and interchangeability in their parts, and to adjust the mutual interests growing out of their interchange and repair. There are also important associations, representing all branches of railway work, including maintenance of way, car service, railway telegraph, railway signal, passenger traffic, freight traffic, accounting, baggage, stores and claims agents, which discuss and legislate upon the various matters over which they respectively have jurisdiction. Through the recommendations and decisions of these associations, agreements have been reached on almost every known railway subject and almost every article used in connection with railway construction, maintenance and operation.

Upon one subject, however, no agreement has ever been arrived at. Both the divisional and the departmental organizations are in effect upon railways that are known to be efficiently and economically managed and neither system is without its champions. It is believed by some successful railway executives that the maintenance of way department should be under the direct supervision and sole control of men who are technically trained engineers, and that the track and bridge maintenance should be something entirely separate from the operation of the railway. Similarly it is their opinion that the mechanical department should be managed exclusively by men having had a thorough mechanical training and that there should be a well defined line of demarcation between it and the operating department. The theory is that, in this day of specialization, the right principle is to have experts in sole charge of the three important departments, operating, maintenance of way and mechanical, and that they should be handled as separate entities.

Organization has been defined as "The systematic union of individuals in a body whose officers, agents and members work together for a common end." Those who favor the divisional organization believe that better results are obtainable by a fusion, under one head, of the three important departments referred to above, and that by such an organization "the officers, agents and members" are much more likely to "work together for a common end" than if the departments are kept separate.

The departmental idea is carried a great deal higher up on some roads than on others. In some cases the general superintendent, besides being in charge of operation, controls all maintenance and mechanical work on his district, the officers of these departments reporting direct to him. In other cases the departments are kept entirely separate on districts, as well as on divisions, and the departmental officers report direct to the general manager. Again on other roads a great gulf is fixed between the working forces in the different departments, the general manager having no control of maintenance of way and mechanical matters. Instead the departmental officers

have supreme authority over their respective departments and report direct to the vice president in charge of operation and maintenance.

The absolute necessity of having highly trained experts supervise these two technical departments is fully appreciated, but this is quite possible, under a system that will co-relate under the divisional superintendent all the forces of the operating, maintenance of way and mechanical departments, so as to make them complementary to one another. The plan recommended is clearly shown on the accompanying diagram. The solid lines indicate direct jurisdiction and control, whereas the dotted lines indicate a medium of communication between men engaged in the same department, so that the benefit of the technical knowledge and expert training of those at the top may be transmitted to those who are directly in charge of the work.

Instead of designating the departmental officers as "assistants," some would prefer to use the old familiar titles, such as superintendent of transportation, district master mechanic, division engineer, trainmaster, chief dispatcher, etc., but this is not material. By a reference to the diagram, it will be seen that the general manager, general superintendent, and superintendent each has assisting him men who may be regarded as specialists in maintenance of way, transportation and mechanical work, respectively. The assistant general manager (maintenance of way) prescribes standards in connection with track, bridges and buildings; allocates new rails supplied for replacement; passes upon all plans submitted to the general manager by general superintendents for approval; criticizes maintenance of way expenditures, etc., etc. The assistant general manager (transportation) is responsible for the distribution of cars as between districts; the preparation of timetables, fixing the time of through trains at inter-district points; the issuance of instructions about preference and special passenger train movements; notices of embargoes; criticizes transportation expenses, etc., etc. The assistant general manager (mechanical) is responsible for the distribution of power as between districts; he prescribes locomotive shop, car shop and roundhouse practices; controls the movement of air brake inspection cars; supplies dynamometer car and attendants for the making of tonnage rating tests; criticizes mechanical department expenses, etc., etc. All three officers report to the general manager and all instructions to district officers are addressed to the general superintendents over the signature of the general manager.

The three assistant general superintendents bear pretty much the same relation to their general superintendent as the three assistant general managers bear to the general manager, communications and instructions being sent out over the signature of the general superintendent. They confer with officers of higher rank on work in which they are especially concerned, and guide those of lower rank so as to ensure the work being prosecuted in accordance with the prescribed standards and practices. The assistant superintendents report direct to their superintendent. They bear pretty much the same relation to him as corresponding officers of higher grades bear to the general manager and to the general superintendents. They are held directly responsible to him for the work of the men under them and have the advantage of the assistance and advice of the district officers in the same departments.

The above gives, in brief outline, a general idea of a divisional organization, but does not show in any definite way the advantages to be derived from it. Time will not permit of more than a mention of a few of these. Such a system absolutely removes any departmental friction, and tends to promote harmony throughout all branches of the service. If passenger trains fail to maintain their schedules, the superintendent is not in a position to blame the engineering department for not keeping the track in proper condition for high speed trains, nor the mechanical department for not maintaining locomotives in condition to make time. He is responsible for the condition of both the track and the power.

When there is an abnormal demand for locomotives for work train service, as well as for traffic, the superintendent, being in full control, and responsible alike for the track maintenance and the traffic movement, is in a position to decide in what proportion the available power should be provided for each class of service. Locomotives turned out for traffic can, when necessary, be utilized to do odd jobs of maintenance of way work, such as unloading cinders or ties en route and likewise locomotives supplied for work train service can often be utilized to handle revenue traffic before reaching working limits or beyond them.

When a division of railway is required to take care of some extraordinary rush of traffic, so that the facilities and power are taxed to their utmost, if the superintendent finds that a few extra men in the locomotive house, or at the ash pit, or coaling plant, would result in a quicker outturn of locomotives he is in a position to authorize their employment, or to transfer them from some other class of work. When there is an accident—and no railway is immune from such unfortunate occurrences—it is very much better to have one man responsible for clearin the line, repairing the track, picking up the wreckage, and resuming the running of trains, than to place the responsibility of clearing the line and picking up the wreckage upon the mechanical department, and for repairing the track upon the maintenance of way department, while the superintendent's forces stand aside waiting for the other departments to repair the damage and make the line passable for the resumption of traffic. In an investigation to determine upon whom to place responsibility for an accident, the superintendent can have no object in attempting to fix the blame, except where it belongs. Under a departmental organization, all departments interested are represented and every representative naturally desires to escape the necessity of admitting responsibility. This is unfortunate, but as human nature is constituted, it is inevitable.

A superintendent has a greater number of officers available for special emergencies. If it is suspected that men engaged in train service are becoming lax in the observance of any of the important general rules, or if it is considered advisable to check up any feature of track work, he is in a position to use all his assistants for checking or efficiency testing. There is an added advantage in that so many assistants obtain a general all around knowledge of and experience in the operation and maintenance of a division fitting them for greater responsibilities. Not the least important benefit to be derived from a divisional organization is the broader training which officers in the lower positions receive. A man occupying the position of general manager, or general superintendent, should not only know something theoretically, but a great deal practically, about the maintenance of track, buildings, bridges, signals, cars and locomotives, besides being a competent transportation officer, and the best way to acquire this general knowledge is to be placed in a position to gain the practical experience. A superintendent given such an opportunity will naturally make a more capable general officer than one whose training is confined to one department.

It has already been stated that some railways are being efficiently and economically manager under a departmental organization. The question naturally arises "Would still better results be produced under a divisional organization?"

The foregoing paper was read before the Central Railway Club, at Buffalo, N.Y., recently.

## Limited Liability for Loss of Baggage.

Commissioner Boyce, of the Board of Railway Commissioners, gave the following judgment recently:—Application is made by a firm of solicitors for advice as to the legal interpretation to be placed upon the Baggage Regulations—rule 3 (b) of General Order 151. They desire to be informed as to whether the limit of $100 for liability for loss by the carrier is applicable to all manner of loss in respect of baggage. The board's opinion is sought, presumably as a preliminary to the institution of legal proceedings in a provincial court, which would involve the construction and interpretation of the regulation as regards particular circumstances under which the loss occurred. I am of opinion that it is no part of the functions or duty of this board to give such opinions or legal interpretations for the purpose of founding or supporting legal claims. Those functions are of courts, and this board, whose functions are administrative, not advisory, should not appropriate them. This has long been the practice and principle adopted by this board. In a memorandum, dated Nov. 11, 1907, re Dunville Ice Company's switch, the then Chief Commissioner (A. C. Killam) stated that while the board is always willing to give information as to the contents of statutes to which parties may not have the means of convenient access, he considered that it should not undertake to give legal opinions as to parties' rights under circumstances stated to it, except where it became necessary for it to do so in dealing with applications and complaints coming before it in due course for adjudication; that in the particular case submitted, rights and obligations of the parties might be affected by circumstances not known to the board; and that the board could not properly undertake to advise in the matter.

The Commissioner then cited a number of similar rulings by the board, and concluded as follows:—The applicants should be advised that, for the reasons given, the board is unable to comply with their request.

**The Union Pacific System** has now three offices in Canada, for both freight and passenger purposes, as follows:—Toronto, G. W. Vaux, General Agent; Calgary, Alta., L. J. Canfield, General Agent; Vancouver, B.C., F. S. Elliott, General Agent.

# The Locomotive as an Investment.

By G. M. Basford, President, Locomotive Feed Water Heater Company.

The following individual paper was read at the Sec. 3, Mechanical, Convention, American Railroad Association:—

**More Ton Miles per Hour.**—The locomotive is a big investment, and it must be so considered and so treated. In no other branch of engineering development has so much progress and improvement been made in efficiency as has been made in the steam locomotive during the present official generation, and the improvement has just begun. If all new and all existing locomotives are made as efficient as the best, and it is possible to make them nearly so, private ownership and operation of railways will be put in the way of success. But, no matter how efficient the power unit may be as a unit, its operation must be such as to obtain the benefit of the possible efficiency for the maximum number of ton miles per hour. More ton miles per hour is the only salvation of the railways. Among other things, this calls for the best locomotives and the best use of locomotives, quick and continuous movements, reduction of idle hours, quick terminal movements, improved dispatching, improved maintenance and repair facilities and repair methods, also fuel and labor saving improvements of every possible kind. It calls for resourcefulness in keeping locomotive wheels turning most continuously and most effectively.

**Steam Locomotive Here to Stay.** — Whatever we may have in the future, today the steam locomotive is the most vital influence in the progress of civilization. Its possibilities for assisting in meeting the problems of the present and future by reducing the cost of transportation lie beyond the imagination of all who have not made a careful study of the improvements now available for increasing capacity.

Whenever you wish you may put on the rails locomotives that, from a performance and particularly an efficiency standpoint, will hold their own with the best non-condensing power plants on land or afloat. You may at any time produce a drawbar horsepower per hour for 2.25 lb. of coal at the speed giving the maximum power of the engine. The problem is how to make all the locomotives in this country approach the standard already set, how to make the best use of facilities that are already available, also how to keep abreast of further improvements.

Your speaker innocently suggested as a subject for this convention: Modernization of existing locomotives, a study of locomotive operation from the point of view of a large investment, believing this to be the greatest problem before you. Your general committee honored me with the request, which is as effective as an order, to do it myself. I appreciate the responsibility. The only difficulty is to make the facts clear and to state the case strongly enough.

**Importance of Overhead.**—I have said that a locomotive must be considered as a big investment and must be used accordingly. It has been stated that the value of locomotives used on our railways is 60% of the total value of all the machinery, implements and tools used in all of the other industries in the country. Is this equipment used as efficiently and as effectively, when it is used, as is that of our manufacturers? A manufacturer is mighty careful about his $25,000 and $100,000 machines to keep them busy. If he does not, he goes "broke." He puts cranes over them. He keeps raw material coming and clears away the finished product. He keeps them in repair. He works them night and day by watching operation and methods. He treats them as a big investment and keeps them going. He thinks of his machinery as being worth so many dollars per hour and he knows just how many dollars in each case. That is why he makes money.

In increased production an important lesson is learned from the electric locomotive. It costs more than the steam locomotive, and its friends have seen to it that it is given every opportunity for greater continuity of service. Expensive machinery ties up lots of capital. That machinery must produce or the carrying charge is overwhelming. The true significance of the word "overhead" needs to be emblazoned in the railway dictionary. Everything possible to do what will keep the wheels moving must be done. Overhead is the nightmare of the business man and the manufacturer, and it ought to be of the railway man. Railway men do not worry about it as much as they ought. Production is the answer to overhead in manufacturing business and in railroading. How to make the locomotive pull more tons per ton of coal, per ton of its own weight, per dollar of wages, per hour of the day, per year, per dollar of shop, terminal and track investment, and per mile run, is the answer on the railway.

Figures prepared to illustrate the increased cost of locomotives built two years ago, compared with the cost of exactly similar ones today were too painful to be included in this discussion. They reveal the fact that those built most recently are up against a serious handicap. They must earn several times more than their predecessors in order to make good. Not only has the cost of new locomotives gone up; the value of old ones from a capital standpoint has gone up and so also has the cost of maintenance and operation. Therefore, every locomotive must produce more.

**Motive Power Chiefs Should be Vice Presidents.**—In order to secure increased production from locomotives a serious handicap must be overcome. Railways are essentially machines. Transportation success depends very largely upon the character and the use of the power plants that move the tons. Not all the operating officers have come to their high places with sufficient knowledge and intimate contact with the locomotive to understand and thoroughly know what a locomotive should be and what it should be expected to do. It is not their fault, but it has been unfortunate for the railways. Many of the members of this organization know that for many years the speaker has implored the mechanical officers of American railways to compel the locomotive problem to take its proper place in railway organizations and therefore in railway operation. For years the speaker has urged a more commanding position for the mechanical officer and the mechanical department. In the present crisis this means more than it ever did. As a matter of course, traffic, accounting, legal and sometimes purchasing responsibilities are given recognition and high standing by being administered by officers of the rank of vice president. This is as it should be. In my opinion, the pulling power of the railways can never be what it ought to be, and what it may be, until motive power problems are solved and motive power policies are presided over by officials acknowledged and supported by the standing that the officer in charge of locomotive design, construction, operation and maintenance requires, not to mention the other question of cars. This suggests that the mechanical policies of the railways, using 26½% of the fuel of the country, involving technical responsibility for upwards of six billion dollars worth of property, for more than four hundred million dollars spent per year in locomotive repairs, and presenting possibilities to effect savings upon the expenditure of over a billion dollars a year for fuel, might with profit be presided over and decided by officers of the standing of vice presidents. This ought to happen, but it should be done in such a way as to accomplish three things: First, safeguard mechanical policies; second, provide for maintenance and operation of mechanical matters through the operating department; and, third, provide prospects and official standing which will constitute adequate reward for lifelong effort in a line of endeavor that requires this incentive.

On the other hand, if our railways do not take care of their mechanical officials, they will continue to lose men whose knowledge, experience and ability are needed in order to prevent public ownership and operation. They must be given the opportunity to increase production of transportation, and, fortunately, they know how to help to do it. In many cases they are obliged to plead and argue for improvements, with higher officials who do not always appreciate the importance of these mechanical questions. Sometimes the decision concerning equipment is in the hands of persons or departments whose responsibility does not extend to the operating results. Too often prices only determine their decisions. Such a selection of equipment is not only detrimental to the operating results, but most discouraging to the motive power officials who must keep the locomotives going and going at the minimum cost of fuel and repairs.

**Profit, Not Fuel Cost, Important.**—The vital thing is to make a profit on transportation. Profit is not determined so much by the first cost of the piece of machinery as by the economy of its performance. Under certain conditions a costly machine may be far more profitable to its owner than a cheap one, which is wasteful in its workings. Railway executives have realized this point in electric locomotive installations. Such installations have not been hampered by traditions such as exist with the steam locomotive, and the engineers are allowed a free hand to produce the best possible economic results. It would be worth while for any railway to give an order for steam locomotives to do certain work at minimum cost per unit of work done without restriction as to the cost of the machine. The writer knows of no record of this having been done. He predicts surprising economies when it is done.

This constitutes the strongest argument for basing locomotive recommendations upon facts that cannot be questioned and for pushing plans to conclusions. High officials will yield to the insistence of arguments the strength of which is made clear to them. Show the

president the meaning of the locomotive as a big investment, and, in justice to himself and the road, he cannot cut money-making improvements out of his appropriations. The president always defers to some authority in mechanical matters. It is most fortunate for every one concerned when this authority is his own mechanical organization. Unhappily it is not always so.

**Bigger Boilers Possible.**—An example of subjects which open the way to revolutionary improvements in the locomotive is dynamic augment, which opens up great possibilities in increased capacity of locomotives. About six years ago, a systematic movement to reduce reciprocating weights and decrease dynamic augment was started. It was carried on successfully up to the beginning of the war and then stopped. This work must be resumed. Railway men were beginning to realize that it was not the static or dead weight of the locomotive alone that was important, but the dead weight plus the additional weight put on the rails by the unbalanced weights at speeds. When the dynamic increase from the unbalanced weights is reduced by lighter weights of reciprocating parts more weight may be put into the boiler. This development lies right at hand. It is well worked out and is ready for immediate application.

Let us see what this means. Consider what are known as the 2-10-2 A and B classes of United States Railroad Administration locomotives. They have not enough counterweight in their main wheels to balance the rotating weights at the main pins. With ordinary open hearth steel parts, as these locomotives are built, there is a lack of rotating balance at the main pins of 390 lb. This produces a dynamic augment at 54.2 miles an hour equal to 50% of the static weight at the main wheel. By the use of high quality steel forgings for reciprocating and rotating parts it is possible to reduce this unbalanced weight in the main wheel to very nearly zero. This would also help the overbalance in the other wheels. Of course, it must be made clear that there was insufficient time to consider this in the U.S.R.A. locomotives.

Furthermore, if the U.S.R.A. heavy mikado is given specially designed reciprocating and revolving parts of high quality steel, its destructive action upon the track at a speed between 40 and 45 miles an hour will be less than that of the U.S.R.A. light mikado that is fitted with the present corresponding parts of open hearth steel. The advantage thus gained is cheap, when it costs only a change in material and refinement of design. At all speeds, at which these locomotives are at all likely to damage the track, the heavy mikado, if built with light reciprocating parts, will be actually a safer locomotive than the light mikado is now. The heavy mikado has 10% more tractive power, 14% more heating surface and its total weight is 9½% greater than the light mikado.

The excellent report to this association in 1915 on this subject should be followed by another study of this promising development, which means so much to the track and to bridges, as well as to the locomotive itself. Maintenance of way officers are now studying stresses in track. They take dynamic augment into consideration, but they seem to accept it as being necessarily high, instead of considering it is a series of forces which may by refinement be reduced. They may be greatly reduced. Their reduction will relieve the track immensely, and relieve boiler restrictions.

**Boiler Design Improved.**—About eight years ago methods of laying out sizes, capacities and proportions of locomotive boilers changed from the empirical to the exact. New rules were established. These were based upon the power of the cylinders, and the boiler was designed to produce the necessary steam. This is not as simple as it sounds. The result of the change in methods was to put locomotive designing into a higher plane, equal to that of marine and stationary engine design. What this has meant to our railways and what it means now, with increasing weight, size and power of locomotives, is difficult to estimate, but it is safe to say that we could not build the big engines of today on the basis of the rules of design recommended by this association in 1897. The locomotive builders have introduced these radical improvements in elementary design. Others have insistently and consistently developed improvements of factors making for better use of fuel and of steam. The use of steam in the cylinders, production of superheated steam, the subjects of combustion, stokers, steam conservation and boiler circulation are now studied in locomotive practice as they have been studied for years in the stationary and the marine fields. Locomotive combustion is being studied as it never was before. This has revealed the relative value of firebox, combustion chamber and tube heating surface and has thrown new light on the subject of air supply to the fire, baffling and mixing the gases and the form and volume of fire boxes. In fact, the fire box has been transformed into a proper furnace. If stationary and marine engineers were limited as to size and weight as locomotive designers are limited, the progress that the locomotive has made during the past few years would be appreciated.

**Fix Up Old Locomotives.**—There is scarcely an item that goes to make up an efficient and safe locomotive that has not been improved to make more power and more mileage. They not only make for better use of fuel, but they keep the locomotive from going to the shop as early and as often, and they protect the crews. These improvements need not be mentioned in detail. They are well known, are past the experimental stage, and are available to transform the fuel, wage, time and tonnage wasters into money makers, because the improvements are applicable to old locomotives as well as to new ones.

Locomotive men and firemen know these things. They know how modernizing transforms a locomotive. They understand what these factors mean to the big new power and they cannot be expected to exert themselves to the utmost and give most efficient service when so many of them must work with locomotives that they know to be capable of so great improvement. Not the least of the advantages of modernizing is its effect upon the men. They naturally do better work when provided with good tools.

New locomotives are usually well equipped for good performance. They are usually provided with most of the factors that make for increased capacity and improved economy. Their application to old locomotives offers a wonderful opportunity for a big money saving improvement. This application to old locomotives is a gold mine ready for immediate operation. These old locomotives may be made, weight for weight, as good and as efficient as new ones. How many men in this meeting realize the task before them if they were asked to explain to a successful manufacturer the reason why this has not been done. How often a 12 or 15 car locomotive is seen on a 4 or 5 car train. This happens on roads having hundreds of locomotives that if modernized would handle light trains economically while the big ones do not. This is somewhat like turning piston rings in a wheel lathe. This is difficult for a manufacturer to understand, especially when it is so easy to bring small, old engines up to date.

**What Has Happened to Some Locomotives.**—Turn to page 55 of the proceedings of this association for 1917 to see how a single modernizing factor changed the maximum power of a locomotive. By applying this improvement to a consolidation locomotive on the Big Four Railroad, the power of the locomotive at 27 miles an hour was increased one-third. The speed at which the locomotive produced its maximum power was stepped up 42%. This is typical of the possibilities on other locomotives with correspondingly greater improvement when all the modernizing factors are applied.

Not long ago, one of the largest Pacific type passenger locomotives in the country gave up its train because of a loose tire. A 20-year-old 8-wheeler took the train of 8 steel cars 40 miles into the terminal in time to save refunding the excess fares. The little 8-wheeler had been modernized. The locomotive man said: "The bosses don't know what these modernized little locomotives will do. They do not know what we have to work with, and they do not use the old locomotives as they should after they are modernized. The tendency is to overlook their possibilities." Due in part to this experience, thirty more of these small locomotives on this road are now being modernized as they go through the shops.

When one of our big railways was considering the application of a fuel saving and capacity increasing factor for modernizing existing locomotives and improving old ones, the problem of keeping one of its important passenger trains on time was pressing. The regular train had six passenger and one parlor car and was hauled on a very fast schedule by a Pacific type saturated locomotive which usually was unable to make the schedule with nine cars. One of the locomotives was modernized in the hope that it would handle 10 cars. In the first test the train had seven cars. On each of the following test runs one additional car was put on until the locomotive handled 15 cars on schedule time. Let me here make record of the fact that one of our great railways declined to even try this particular improvement until its owner agreed not only to furnish it without obligation on the part of the railway, but to remove it at his own expense if it did not satisfy the representations made for it.

In another case modernizing saved 300 old 8-wheel lomocotives which were too ineffective to be maintained as they were. They were good to haul wooden cars, but were outclassed by steel equipment. Approximately 30% in fuel was saved by modernizing and they were made sufficiently powerful for steel car trains.

Modernizing received its first good start by the improvement of a lot of Mallets. Another road has rebuilt prairie type locomotives into mikados with 21% increase in tractive effort. Another road changed over 300 consolidations into mikados. At speeds of 35 miles an hour the last mentioned rebuilt locomotives have a drawbar pull of 22,300 lb., whereas the consolidations gave only 8,500 lb.

at that speed. These were comprehensive changes which have proved successful. Modernizing usually need not be carried as far as to change the type or wheel arrangement. Its greatest field lies in adding improvements without this change. Every railway man knows that he has this opportunity before him. It is unnecessary to cite further notable examples, although this paper could be filled with them. The thing to do is to get into action, survey all existing locomotives, plan the modernizing and rejuvenate a certain number per month on a real time card as they go through the shops.

In 1915 a comparison was made between two locomotives. One was a consolidation, which represented best practice before the time modernizing of design and introducing of fuel saving factors began, the other was a mikado built in 1915. The mikado delivered 82% more work for the same amount of coal, which in each case was as much coal as the fireman could handle. The locomotives were designed for the same road and the same service and represented the advance of 10 years in modernizing on that road, including design and the use of fuel saving, capacity increasing factors.

The locomotive of 10 years ago, and unmodernized, is very little more efficient than one of 70 years ago. Modernizing three of them, however, is usually equivalent to an additional locomotive of the same size. The rest of the problem is to get the utmost service out of the improved locomotive and to obtain on the road the increased capacity known to be available. The available improvements should be capitalized and made to earn money. Not only should the locomotive itself be considered as an investment, but the improvements should also be so considered.

**Electric Locomotive Fallacy.**—Electric locomotive partisans are propagandists in arguments for electricity versus steam. They argue, however, on the basis of the steam locomotive as they knew it in the past rather than as it is today. They further weaken their case by absurd claims to the effect that electric locomotives can save two-thirds of the coal burned by all the steam locomotives in the country, and they base their claims on the steam locomotive of 10 years ago. The truth is that in five years of this period the economy and the capacity of the steam locomotive has more than doubled. The object is not merely to win against the electric, but to pit the steam locomotive against the high cost of everything. Constructive, systematic policy of locomotive engineering and operation is the way to do this and it will do it.

We are told that electrics are replacing steam locomotives. We do not hear enough about the 38 steam mikados that replaced 12 moguls and 38 consolidations on the Missouri, Kansas and Texas several years ago, and of the 41.8% increase of train load, also of the reduction of 23% in the number of trains. The Norfolk and Western replaced 57 locomotives with 40, with a reduction of 26% in the number of trains for the same traffic. The Delaware and Hudson showed a saving of 43.8% in coal by substituting Mallets for consolidations. Each Mallet replaced two consolidations. A year later each of these Mallets showed 7.6% better fuel records and each of them continued to do the work of two consolidations, while burning less coal than one of the consolidations. On the Chesapeake and Ohio 25 Mallets replaced 44 consolidations, saving 37% in the cost of handling freight traffic. This has been going on the country over, in cases too numerous to mention, but too little is said about these improvements and too little is said about future possibilities. When every existing locomotive is thoroughly modernized and when all are operated with the study, care and supervision called for, and when coal and fuel oil are used as if they were expensive—then this association and the men who make it will be recognized for saving the railways. In this scheme of things the obsolete locomotive lacking labor saving, capacity increasing, fuel conserving and safety factors has no place.

For further development we have the tractive effort booster, also the fixing of cut-off to give maximum power at every speed of the locomotive to which B. B. Milner referred at this convention last year.

**Scrap the Old Shops.**—Shops for quick and economical repairs to big locomotives present possibilities for revolutionary modernizing improvement. If the "average" railway shop should be made the subject of investigation and report with a view of equipping it to put locomotives back on the road repaired as quickly and as cheaply as possible, it is the writer's opinion that the honest recommendation of the investigator would be to salvage the old and build a new shop, from foundations up. Shops as well as locomotives need modernizing from the standpoint of being considered as a big investment. Only a short time ago the writer watched the wheeling of a heavy locomotive by air jacks at one of the shops of a big railway where he once had the honor of employment. This would be impossible if the locomotive, or the shops, were considered by that road as a big investment. Let us hope that an able, quick crane has replaced the dangerous, sluggard jacks, and time and man-killing wooden blocking. Fortunately, shops as well as locomotives may be modernized if there is a will to do it, and if the policy of doing it is established on a stable basis. Bear in mind the fact that increasing the number of new big locomotives without increasing shop and locomotive house facilities is fatal as a business policy.

Maintenance of way officers are now engaged upon the establishment of units for comparison of track repair costs, and great improvements in track maintenance costs are expected. If costs of various locomotive repair shop jobs were compared upon a fair and really comparable basis, many shops with high costs could be put on the basis of the best shops. Improved machines, rearrangement of machines and improvement of methods, with reduction of distance traveled by material and parts, would certainly result. Many shop operations are subject to comparisons that would be intelligent and fair, but only items which are subject to fair comparison should be selected. There are many of these, and if the facts that comparisons would reveal are put up to the managements strongly, machinery 50 or more years old would disappear from our shops and locomotive houses because it cannot be modernized.

In the matter of shop production methods this association would do well to discuss the paper upon graphic production control read by E. T. Spidy, Production Engineer, Canadian Pacific Ry., before the Canadian Railway Club (see Canadian Railway and Marine World, Feb., 1920, pg. 55). Officers who desire to make a good record should study it. If Mr. Spidy's "up-to-the-minute" shop information were also applied to locomotives and their operation, railway stockholders and the public would be happy indeed. Careful attention to the excellent report by the committee on shop scheduling systems, to be presented at this convention is earnestly recommended in connection with the reduction of overhead.

**Stitch in Time Terminals.**—Locomotive terminals are not all equipped to handle expensive locomotives promptly and economically. Has anyone charted or scheduled locomotive terminal movements with a view of short cuts in delays? Are big locomotives ever held in yards and sent in herds to the locomotive house for fire cleaning, coaling, sanding and locomotive house jobs, when they could as easily be sent singly to keep the locomotive house load curve more uniform? Because the "stitch in time" at the locomotive house may keep a big locomotive going strong, the best of mechanics and the best of tool equipment should be at the locomotive houses. Is this so today? Unquestionably the locomotive house foreman should be a man of greater authority. It would seem to be a money making scheme to give him much better standing, also to give him a yard foreman to handle the firing up of locomotive and all the out-of-door work, to speed up ash pit and other work that delays expensive locomotives from the road. An inspector who has been a locomotive man should meet all incoming locomotives and discuss with the crews the condition of the locomotive and the defects found. These men would save their annual pay every month. It would be very profitable to have travelling engineers spend a day or so every month at the locomotive house.

Adequate locomotive terminals laid out, organized and equipped for quick, thorough work will speed up the entire railway. Inadequate terminals do more than anything else to slow down the entire railway. Furthermore, locomotives themselves may be designed and equipped for quick terminal work, particularly at the ash pit. Who knows how many new locomotives might be saved by quickening terminal operations?

**Better Use of Power.**—In locomotive operation lies a fruitful field for study and improvement. Mileage of passenger and freight runs is an item of importance. Water and coal stations that were established years ago upon the basis of locomotives which did not have the advantage of modernizing factors may in many cases be relocated with profit. Why should not passenger divisions be extended to 300 miles and freight divisions to 200 miles? There are difficulties, but are we sure they cannot be overcome? It is much better to change crews and much cheaper than to let the locomotive go to a terminal so often. Is it possible to double the mileage between locomotive housings or to cut in halves the time waiting for the ash pit?

As to terminal delays, have conditions improved greatly since N. D. Ballantine recorded, before the Western Railway Club five years ago, the results of an investigation of locomotive service which showed that the mechanical department had the locomotives 58.5% of the time, and of the balance of the time 65% was occupied between terminals and 36% in actual running? Mr. Ballantine revealed an opportunity for remarkable saving by lengthening locomotive divisions that this association can profitably discuss.

**Coal Will Never Again be Cheap.** — Individual fuel records have been advocated for a quarter of a century and some success has come to those patient enough to persist in this direction. Coal costs are already high enough to justify this, and many other improved methods, the importance of which increases with coal costs and with the amount of fuel a big locomotive burns. For example, one reason for the delay in adopting feed water heating is that coal has been considered cheap. Coal must now be considered as a big investment. Fuel is no longer cheap, and in the quantities required to haul the big tonnage that is coming it never again can be cheap. Natural gas was once considered cheap. Think of the result of such opinion.

Government experts have performed wonderful work in the use of fuel. This work will be continued by individual roads, and when it is coupled with systematic application of modernizing factors to old locomotives the results will appear to their full value. However, fuel saving on an obsolete locomotive is like trying to save water that has gone over the dam. Put flash boards of modernizing on top of the dam and save that water for the wheel that turns the mill.

**"Follow Up" Policies.**—A very wise policy has been followed for years by a motive power official who is well known among you. He believes in following up the items of maintenance upon his locomotives. For every item, for example, injectors and rod packing, and the fuel and labor saving factors, staybolts, springs, tubes, annual expenditures for which reach or exceed $100,000, he assigns an expert service man, reporting to him, whose duty is to ensure the proper application, maintenance and use of the items in question. If every road would follow up its $100,000 investments in this way wonderful savings would be effected and many a locomotive would go out on its run instead of being held by government inspections. You know and I know what the railways owe today to the service organizations the supply companies find it necessary to employ to ensure the most efficient use of their devices. This service rendered by these companies has made the big modern, efficient, economical locomotive possible. The time has come for the railways to render these service organizations less necessary than they are today. Some years ago the writer saw the mechanical superintendent of an English railway "hit the ceiling" when a freight locomotive went past his office window with its piston rod packing blowing. We have much to learn concerning the value of keeping worth while improvements up to their best work. We do not worry enough about things that leak and things that may grow into engine failures.

Another fertile field for modernizing is the railway power plant, shop plant and pumping station. These use enormous amounts of fuel in the aggregate and are proverbially wasteful. Records may be made and very easily by rounding these up and by modernizing power plants. In one case, by merely charging up the coal a plant burned, a 25% saving was made. It was saved by showing that fuel is an investment.

Men who make great business successes are said to be brainy—they are brainy, but they are more than that. The number of men who know how to do things and who recognize opportunities is greater than the number that actually do them. Success comes from persistent pushing to conclusions the plans that brains conceive. Those who have won great success in modernizing locomotives are the ones who not only recognize the opportunities for applying to old locomotives modernizing factors that make for more ton miles per ton of metal and per ton of coal, but those who persist in definite plans for doing it. They are the ones who will take high standing in economy of locomotive operation, because they schedule and programme their improvements that make for higher capacity and economy.

**Safeguard Money Already Spent.**—By spending a few thousands in modernizing, millions of dollars already invested in locomotives that are 10 or more years old will return more service. These old locomotives stand as a big non-paying investment. Spend the little that modernizing costs and change them into a big paying investment. A manufacturer must scrap his obsolete machinery. How much more fortunate are the railways. They may at little cost reclaim their locomotives by methods that make them often 50% better than when they were built. We should not consider a 10 year old locomotive in the light of its depreciated value. Many of them will sell today for their original cost. On this basis they are all the more worth modernizing.

**Suicide.**—Without question the greatest locomotive investment, and one which cannot be expressed in dollars, is the organization for locomotive design, operation and maintenance. Organization constitutes the greatest opportunity of all. Constructive, consistent and persistent personnel plans are imperative. The problem is simple, but the solution must be comprehensive. Every railway should see to it that employes are selected wisely, trained properly, promoted by merit from intimate knowledge of performance, promoted from the inside to fill all important prize positions. To this end apprenticeship must be revived, and applied ot all departments, in a form adapted to the great need of the time, and the graduates from apprenticeship must be kept on the road by intelligent systematic personnel plans. The plans referred to will supply every position, including those requiring special technical education. Railways will not be forgiven for neglect of apprenticeship. They are having their punishment now for neglect of it. Have you been making your quota of skilled mechanics all these years? Is one apprentice for every 18.58 mechanics, the country over, safe? Have you studied your labor turnover and made plans to reduce it? Labor is a big investment, and labor turnover is a big loss.

**Vision.**—As to conditions, possibilities and the future development is the great need now. Who is to have the vision to correct the tendency which is already acquiring momentum full of danger to the railways, the tendency for the mechanical departments to drift down to merely practical maintenance organizations? That this association has the power and the opportunity to bring about a proper recognition of the locomotive problem is one of the hopeful factors for the future. But this organization must get above the smaller questions and into the business questions of the pulling power of railways and must do it quickly.

No group of men ever had a more glorious outlook before them. No group ever had a better and stronger incentive; and no problem could possibly be accompanied as this one is, with the means ready at hand for its solution. The task is to study conditions, use factors and facilities that are all ready at hand and assist the development of new ones. The outlook is most promising, hopeful and encouraging; but quick, hard work is necessary, because the situation as it stands today demands the best we have.

What are you going to do about these new things? Eight hour day. Time and a half for overtime. 100 to 200% increase in wages. 100 to 200% increase in fuel cost. What are you, the individual, going to do? You know the conditions and the remedies. Put them before your superior officer in a convincing way—with a foundation and structure of facts. Give them the arguments that will get the money necessary to economical operation.

Nothing that lies ahead is as difficult as the pioneering that gave the country its wonderful railways.

## Tree Windbreaks on C.P.R. Western Lines.

In response to a request for information in regard to the prices of tree windbreaks on the C.P.R. Western Lines, we are advised that the last two summers were exceedingly trying on trees on the prairie, particularly from Moose Jaw west, where the greater part of the company's windbreaks were planted. The hot winds, that swept the prairie during the dry spell, played havoc even with stock that had been well established and had survived many hard winters. In some cases entire plantations were killed back and what trees survived were severely checked in their growth and had to be cut back in order to give them a fresh start. Another feature in the destruction of trees is the panel and slab fence, which has to be maintained until the trees are sufficiently thick to hold the snow. This causes the snow to pile up, and in some cases to completely cover the trees, with the result that the young stock are badly shaken up, when the snow thaws, and settles in heavy masses in the spring.

Of course tree windbreaks are most necessary on knolls and hills, where the track is in a cut. Trees so situated get less than the average amount of moisture, due to quick run off. For this reason trees along the right of way are at a greater disadvantage than they would be around a farm or on low lying ground.

It is generally conceded by all who have tried tree planting on the prairie, that the windbreak must be of at least eight rows of trees, and that it must carry a percentage of dense shade giving, or close foliage, trees. The object of this is to reduce the amount of evaporation from the soil, bank the snow in the center of the plantation and conserve needed moisture. It also reduces evaporation from the leaves in the hot dry spells.

When the C.P.R. started this tree planting there had been no experiments carried on west of Moose Jaw, by either government or private individuals, consequently the company adopted the accepted planting practice of eastern Saskatchewan and Manitoba, and did not plant trees in sufficiently thick strips for territory farther west. When windbreaks have been planted east of Moose Jaw they have been decidedly satisfactory.

Prairie farmers are beginning to realize how beneficial windbreaks are around their dwellings, and more so around the farms, where by repeated cultivation and ploughing, the soil is pulverized, and drifts from the heavy winds. This phase of tree windbreaks is receiving attention from the various farmers' organizations, which are advocating it very strongly in their meetings and through their press.

# Practical Shop Hints; Grinding.

Speed is one of the most important factors in grinding. Don't forget that the cutting speed decreases as the wheel wears down.

Every grinding wheel used at all regularly should have an exhaust hood and should be connected to an exhaust system supplied with a suitable fan.

Some work can be ground from the rough more cheaply than with preliminary turning. Makers of grinding machines should be consulted if there is any doubt in the matter.

"Glazing" of the abrasive wheel, is when the cutting point becomes dull. This sometimes occurs when the wheel is being run at too low speed. Glazing and loading are sometimes confused.

"Loading," is when the material being ground fills into the spaces between the cutting points of the abrasive. The soft materials such as aluminum and babbits, tend to load an abrasive wheel much more than the harder metal.

The grinding wheel is in reality a milling cutter which presents millions of cutting teeth to the work every minute. Don't forget that these teeth cut chips, although they are naturally much smaller than those produced by the milling cutter.

The great field for grinding is in the economical finishing of work, either from the rough or in connection with other machines. In too many cases it has failed because of lack of co-operation between the turning and grinding departments.

An abrasive wheel is a disc built up from an immense number of small cutting particles held together by a bond of some kind. Excessive pressure of the work against the wheel tears these cutting particles out of the bond and wastes the wheel.

Automobile cylinders are usually ground dry and the wheel connected with an exhaust system to remove the dust. If water is used, it is usually circulated in the water jackets surrounding the cylinder, and in this way keeps the cylinder casting cool.

It is good practice to change wheels from one machine to another as they wear down, having the speed of the machines varied according to the diameter of the wheel. Some shops provide different size pulleys so that the speed of the machine may be increased to compensate for the wear of the wheels.

A hard wheel with a narrow face will grind work with less care and thought on the part of the operator, but it is the most expensive grinding that can be done. A wide-face soft wheel with the proper care does much more work per dollar of expense and is the proper combination for economical manufacturing.

Fine grinding can be done with a coarse-grain wheel under the proper conditions; in the same way a fine wheel may produce rough work. Many of the scratches which appear on ground work are made by small particles of metal between the wheel and the work. Good grinding demands conditions which allow these particles to escape.

When work is to be finished by grinding, the lathe hand must realize that conditions have entirely changed and that his work is not to finish, but to prepare for the grinder. This means about the roughest kind of turning he can do, simply reducing the stock to the point where the grinder can handle it more economically than the lathe.

A heavy grinding machine with a stiff spindle can run a soft wheel much more successfully than a lighter machine. This is because it holds the wheel firmly while cutting, and the mass of the machine absorbs much of the vibration. A light machine requires a harder wheel because it does not have the qualities referred to. Don't forget to consider all these points in trying to find out exactly where the trouble lies.

Grinding machines are run at high speed and the question of lubrication should be carefully considered. Don't overlook the directions or suggestions sent out by the makers of the machines. It is to their interest to have them run properly, and the directions should be followed.

Lubrication of grinding machines requires the proper kind of lubricant; this varies according to the kind of work being done and the speed at which the wheel spindle runs.

When grinding has to be done in addition to the lathe finish, it is an added expense. The proper way is to rough-turn with a coarse speed to within, say 1/32 of finished size, then send the piece to the grinding room. No grinding wheel should be used without a substantial safety guard for protection of the operator and surrounding machinery against damage should the wheel break. The operator's eyes should also be protected from the chips either by a glass shield, a spark brush or goggles.

Manufacturers of grinding machinery and wheels claim that a good grinding wheel run at proper speed wears less during its passage over the work than a milling cutter under similar conditions.

The wheel contact helps to determine the proper grade of wheel to be used on any kind of work. On work of small diameter there is more contact and consequently a harder grade of wheel can be used. In surface or in internal grinding the contact is very much greater so that a softer wheel gives better results.

Where water is used in automobile cylinders in the type of grinders where the wheel travels around the surface of the cylinder, trouble is often experienced by the collection of mud in the bottom of the cylinder through which the wheel must pass during every revolution.

The old fear of emery or other abrasive working into the metal being ground has been proved without foundation. Where oil and emery are used between metal surfaces rubbed together, the abrasives will lodge in the pores of the metal. This, however, does not happen in grinding automobile cylinders and similar work.

It is important that a grinding wheel fit the spindle or arbor closely to avoid play which throws it out of balance. Don't make the mistake, however, of forcing a wheel on its spindle, as even a slight strain may result in breaking the wheel. An allowance of 0.005 in. will usually be found about right.

A grinding wheel should always have flanges from ½ to 2/3 the diameter of the wheel itself. These should be relieved in the centre so as to bear perhaps for ½ in. at the outer edge. Never tighten the flanges directly against the wheel, but put in washers of blotting paper or some soft or thick substance between the flange and wheel.

Grinding allowances vary entirely with the work being done and the machine in which it is ground. In heavy, powerful machines which remove stock rapidly, the grinding allowance may be anything from 1/64 to 1/32 in.

For fine finish of grinding where the work is not out of true, 0.003 in. is usually sufficient to true it up nicely if the turned surface is not too rough.

In wet grinding the stream of water should be applied at the right spot, which is the grinding point. It should have sufficient force to keep the face of the wheel clean while in contact with the work. It is especially important on internal work.

Grinding wheels appear softer at slow speed because the metal being ground tears the grinding particles away from the bond which holds them together. Don't condemn a wheel as being too soft until you are sure that its cutting speed is correct.

A soft wheel at the proper speed will give more satisfactory results than a harder wheel at slower speed. Don't forget that the wheel maker has had a wide experience and is always willing to give you the benefit of it. If you are having trouble of any kind submit it to the wheel maker.

Grinding problems cannot always be solved by asking the other man what he is doing. A wheel that is perfectly satisfactory on one machine may not give good results on another. Don't think from this that there is anything mysterious about it, because there is always a good reason for everything that happens.

The old notion about keeping oil away from grinding wheels has been largely exploded. This does not mean that oil spots are good for a grinding wheel as they undoubtedly help it to accumulate dirt and dust. Grinding wheels can be lubricated with oil, water, or almost any compound, as long as it is supplied freely and evenly over the wheel. While soda-water is best for general use, there are places where oil is being used successfully.

Grinding wheels should never be trued with the toothed sharpener if accurate work is to be done. While these cost less money than the diamond, they cannot produce nearly as accurate results. Wheel dressers are good for grinding wheels used on rough work or to true up wheels before applying the diamond. Both wheel dressers and diamonds should be supplied as freely as necessary if economical grinding is to be done.

The most important point in lapping is that the laps shall always fill the hole. If this is not done the hole will not be round as the lap will follow the original surface. The lap should be a little longer than the work, so as to lap the whole length of the hole at once, and so tend to correct any curvature which may exist.

To avoid bell-mouthed holes, which come from being lapped large at the ends, put the emery in a slot near the center of the lap and after the lap is in the hole squirt in oil to float the emery against the surface. Don't sprinkle the emery on the ends of the lap and work the piece over it while it is running as this grinds the ends large.

Ring gauges are lapped with a lead lap. They are first ground straight and smooth to within 0.0005 in. of size. After being lapped they are cooled and cleaned before trying the plug. This is done by placing them in a pail of benzine long enough to bring them down to the temperature of the room.—American Machinist.

# Merging the Grand Trunk into the Canadian National Railways System.

Canadian Railway and Marine World for June gave full particulars of the appointment of a managing committee, to ensure the operation of the G.T.R. in harmony with the Canadian National Rys., the two systems to be treated in the public interest as nearly as possible as one. This committee, as stated previously, consists of H. G. Kelley, President G.T.R. and G.T. Pacific Ry., as chairman; C. A. Hayes, Traffic Manager, Canadian National Rys.; and S. J. Hungerford, Assistant Vice President, Canadian National Rys., representing the Dominion Government; and Frank Scott, Vice President and Treasurer G.T.R., and W. D. Robb, Vice President, Transportation and Maintenance G.T.R., representing that company. The committee, which will continue until after the arbitration award has been made and the G.T.R. preference and common stocks are vested in the government, held a series of conferences during June, careful and expert consideration being given to the work of coordination. The managing committee has named a number of subcommittees, composed of C.N.R. and G.T.R. officials, to make reports and recommendations regarding their respective departments, with a view to ensuring the maximum of efficiency and economy under the coordination plan, and action has already been taken in regard to joint operation of certain lines of both systems, and as to the amalgamation of a number of ticket offices.

Train Changes. — The Canadian National Rys. announced the following as the most important changes, effective June 27:—Train leaving Toronto for Port Arthur, Fort William and Winnipeg, Sunday, Monday, Wednesday and Friday, 9.15 p.m., cancelled. New train 11, leaves Toronto 9.30 p.m. daily for Sudbury and Capreol, connecting at Sudbury with Algoma Eastern Ry. for Little Current. Train 11, leaving Toronto Tuesday, Thursday and Saturday, connects at Capreol Wednesday, Friday and Sunday with new Canadian National-Grand Trunk Train 1, tri-weekly Montreal to Winnipeg via Port Arthur.

Train 2 from Winnipeg, arriving Toronto 4.30 p.m., Tuesday, Wednesday, Friday and Sunday 4.50 p.m., cancelled.

New train 12 leaves Capreol and Sudbury daily, arriving Toronto 8.50 a.m. Train arriving Toronto, Monday, Wednesday and Friday connects at Capreol the preceding day with new train 2, Winnipeg to Montreal.

The National leaves Toronto 11 p.m. daily for Winnipeg via Grand Trunk to North Bay, T. & N.O. to Cochrane, thence Canadian National. The National will arrive Toronto from Winnipeg, 3.00 p.m. daily.

West of Winnipeg the National runs over the Grand Trunk Pacific Ry. to Edmonton, 799 miles, thence over the Canadian National Ry. to Vancouver, 775 miles, making a total run of 1,574 miles, against 1,602 by the Canadian Northern through route, and 1,474 over Canadian Pacific. The train leaves Winnipeg daily at 10.25 a.m., arriving at Saskatoon at 12.10 p.m.; Edmonton 11.15 p.m., and Vancouver 9 a.m. Eastbound it leaves Vancouver at 9 a.m., Edmonton 8 a.m., Saskatoon 7.10 a.m., arriving Winnipeg at 11 a.m.

A new fast train, the Capital City, leaves Toronto 12.00 noon, daily except Sunday, for Ottawa, via Grand Trunk Toronto to Napanee, thence Canadian National, arriving Ottawa 7.15 p.m., with close connection for Montreal and Quebec. Westbound, The Queen City leaves Ottawa 1.15 p.m., daily except Sunday, over same route, arriving Toronto 8.30 p.m. Stops on these trains between Toronto and Napanee will be limited to Whitby, Oshawa, Bowmanville, Port Hope, Cobourg, Trenton and Belleville. Connection is made at Harrowsmith for and from Kingston. Trains leaving Toronto 9.30 p.m. and Ottawa 12.30 p.m. cancelled.

Night train leaves Toronto 10.40 p.m. daily, arriving Ottawa 7.30 a.m.; returning, leave Ottawa 10.00 p.m. daily, arriving Toronto 7.00 a.m. These trains operate over the Canadian National throughout.

Train formerly leaving Toronto 4.45 p.m. daily, except Sunday, for Yarker, leaves at the same time and operates over Canadian National to Cobourg (G. T.R. station) only; returning, leaves Cobourg 7 a.m., daily except Sunday, arriving Toronto 10.15 a.m.

Grand Trunk train formerly leaving Toronto 6 p.m. daily except Sunday, for Belleville, leaves at same time and operates to Kingston via Grand Trunk to Brighton, Canadian National to Napanee, thence Grand Trunk to Kingston. Westbound this train leaves Kingston 6 a.m., daily except Sunday, for Toronto, via same route.

Grand Trunk train leave Toronto 7 a.m. daily for Montreal, running via Canadian National between Brighton and Napanee.

Ticket Office Amalgamations. — As part of the unifying process of the traffic agencies and other interests of the C.N.R. and the G.T.R., the following changes will take place about July 1, the amalgamated offices being known as Canadian National-Grand Trunk ticket offices:—

Boston, Mass.—The C.N.R. and G.T.R. offices have both been in the Old South Building, 294 Washington St. The C.N. R. office will be closed, and the business amalgamated in the G.T.R. office, W. R. Eastman, heretofore General Agent, Passenger Department, G.T.R., being appointed General Agent, and C. K. Howard, heretofore General Agent, C.N.R., being promoted to another position.

New York, N.Y.—The C.N.R. office at 1520 Woolworth Building will be closed, and the business amalgamated at the G.T.R. office, 1270 Broadway, A. B. Chown, heretofore General Agent, Passenger Department G.T.R., being appointed General Agent, and F. A. Young, heretofore General Agent, C.N.R., being transferred to another position.

Quebec, Que.—The C.N.R. office at 7 Du Fort St. will be closed, and the business amalgamated at the G.T.R. office at Ste. Anne and Du Fort Streets, S. J. Nestor, heretofore City Ticket Agent, C.N.R., being appointed City Passenger Agent; G. H. Scott, heretofore City Passenger and Ticket Agent, G.T.R., being appointed Special Passenger Agent, and P. H. Proulx, heretofore Ticket Agent, C.N.R., being appointed City Ticket Agent.

Montreal.—The G.T.R. office, at 22 St. James Street, will be closed, and the business amalgamated at the C.N.R. office, 230 St. James Street, M. O. Dafoe, heretofore City Passenger and Ticket Agent, G.T.R., being appointed City Passenger Agent, and A. J. Roy, heretofore City Passenger Agent, C.N.R., being appointed City Ticket Agent.

Ottawa.—The G.T.R. office at Sparks and Elgin Sts. will be closed, and the business amalgamated at the C.N.R. office at Sparks and Metcalf Sts., P. M. Butler, heretofore General Agent, Passenger Department, G.T.R., being appointed General Agent; I. G. Reece, heretofore City Passenger Agent C.N.R., being appointed City Ticket Agent, and C. A. Belford, heretofore City Ticket Agent, G.T.R., being appointed City Ticket Agent.

Toronto.—The C.N.R. office, at 52 King St. East, will be closed, and the business amalgamated at the G.T.R. office, King and Yonge Sts., W. J. Moffatt, heretofore City Passenger Agent, G.T.R., being appointed City Passenger Agent; C. E. Tewny, heretofore City Ticket Agent, G.T.R., being appointed City Ticket Agent; and R. E. Richmond, heretofore City Ticket Agent, C.N.R., being appointed Assistant City Ticket Agent.

Hamilton, Ont.—The G.T.R. office at 11 James St. North will be closed, the business being amalgamated at the C.N. R. office at 7 James St., Jas. Anderson, heretofore City Passenger and Ticket Agent, G.T.R., being appointed City Ticket Agent.

Western Amalgamations. — Winnipeg press dispatch, June 20. — Complete amalgamation of stations and staffs on the Canadian National and Grand Trunk Pacific Railways will take place within the next 30 days at all western points. Local committees are working on the matter in connection with the Winnipeg staffs.

## Rehabilitation of Belgian Railways.

The following is stated to be the condition of the Belgian railways on Jan. 1, the latest date to which information has been received:—Freight cars available average about 14,000 daily, while in 1914 the daily average furnished Belgian shippers was in the neighborhood of 20,000. The number of freight trains running is about 84% of the number before the war. The average daily tonnage hauled is 171,000 tons, compared with a daily average of 190,000 tons in 1914. The passenger trains in daily operation number 1,536.

On Jan. 1, 1919, there were but 578 locomotives in good running condition; this number is now said to be increased to 2,776. Railway receipts have greatly increased in recent months, although there will probably be some deficit for the year because of the heavy monthly deficits during the period following the armistice. For the 11 months ended Nov. 30, 1919, the total receipts amounted to $57,128,000, at normal exchange, while the total for 1913 was $59,444,000.

During Nov., 1919, passenger and passengers' baggage receipts were $2,516,-720, and freight receipts were $4,130,200. The corresponding figures for November, 1913, were $1,497,101 and $3,762,149 respectively. This increase of current receipts is of course, partly occasioned by an increase in rates.

The need for additional rolling stock is acute. Locomotives and cars reclaimed from Germany are usually found to be in need of extensive repairs, and it has been impossible to obtain prompt delivery of new orders. At present it is stated that it would take more than 4,000 additional freight cars daily to meet the demands of commerce and industry.

# Industrial, Logging and Mining Railways in British Columbia.

The B. C. Railways Departments report for the calendar year 1919 contains considerable information relative to industrial railways in the province, and says: "During the year a large amount of new work has been added in connection with the above owing to the amendments to the Railway Act having brought railways not subject to the Dominion jurisdiction under this department's jurisdiction. This new work includes, besides the inspection of locomotive boilers, previously under the Boiler Inspector's department, the examination of locomotive engineers." An amendment to the Railway Act passed in 1917, provided that "no company shall operate a railway within the province except with the Minister of Railways' written consent, subject to such conditions as the Lieutenant-Governor-in-council may impose, and a further amendment passed in 1918, brought under the Minister's control the inspection of rolling stock used on such railways. Under these provisions the department has drawn up a new set of locomotive rules, and from April to Dec. 31, 1919, 53 locomotive boilers were given a hydrostatic test, 150 preliminary examinations have been made, 70 locomotive men have been examined and granted certificates, and there are 50 more applicants for certificates awaiting examination. The inspector is giving careful inspection of the rolling stock employed, and giving instruction to the employes as to rules, etc.

There are over 70 industrial common carrier railways under the department's jurisdiction operating approximately 1,000 miles of line, equipped with 170 steam locomotives, 32 electric locomotives, 4,000 cars and miscellaneous equipment. The accompanying table shows the railways under the department's jurisdiction, with mileage and particulars of rolling stock. The table includes three railways which report to the Dominion Government, viz.: Eastern British Columbia Ry., Morrissey, Fernie & Michel Ry., and Pacific Great Eastern Ry.

| Company. | Head Office. | Operating. | Miles track. | Locos., steam. | Locos., elec. | Equipment. | Total. |
|---|---|---|---|---|---|---|---|
| Abbotsford Timber & Trading Co | Abbotsford | Abbotsford Mill | 8 | 1 | .... | 17 logging-trucks, 1 flat car, 1 oil-car | 19 |
| Alberni Pacific Lumber Co | Port Alberni | Alberni Mill | 7 | 2 | .... | 20 logging-cars, 7 logging-trucks, 1 workmen's passenger-car | 28 |
| Amick, J. H., Logging Co | Sooke | Sooke | 8 | 1 | .... | 40 logging-trucks | 40 |
| Anderson, P. B | Vancouver | Knox Bay | 4 | 1 | .... | 10 logging-cars, 8 logging-trucks, 1 flat car | 19 |
| Beaver River Lumber Co. | New Westminster | Beaver River | 4 | 2 | .... | 11 logging-cars | 11 |
| Beaver Cove Lumber & Pulp Co | Vancouver | Beaver Cove | 6 | 1 | .... | 4 cars | 4 |
| Bloedel, Stewart & Welch Lumber Co | Vancouver | Myrtle Point | 20 | 3 | .... | 51 cars | 51 |
| Britannia Mining & Smelting Co. | Britannia Beach | Britannia Beach | 35 | .... | 25 | 267 cars | 267 |
| B.C. Mills Timber & Trading Co | Vancouver | Rock Bay | 27 | 6 | .... | 70 logging-trucks | 70 |
| Brooks, Scanlon & O'Brien (Eagle River and Northern Ry. | Vancouver | Stillwater | 18 | 3 | .... | 42 logging-trucks | 42 |
| Campbell River Lumber Co | White Rock | Hernando Is | 2 | 4 | .... | 4 logging | 4 |
| " " | " | Otter | 1 | 4 | .... | 6 cars | 6 |
| Canadian Panama Timber & Logging Co | Victoria | Sooke | 7 | 1 | .... | 14 logging-cars, 2 workmen's passenger-cars | 16 |
| Canadian Collieries, Ltd | Victoria | Ladysmith | 21 | 10 | .... | 8 box, 25 flat, 383 coal-cars, 25 rock-dumps, 2 passenger-cars, 8 | |
| " | " | " | 35 | .... | .... | workmen's passenger-cars, 1 steam-shovel, 1 pile-driver, 1 snow-plough | 455 |
| Canadian Puget Sound Co | Victoria | Jordan River | .... | 3 | .... | 72 logging-trucks | 72 |
| Canadian Robert Dollar Co | Vancouver | Union Bay | 7 | 1 | .... | 1 boarding-car, 6 logging-cars, 16 sets logging-trucks | 23 |
| Canadian Western Fuel Co | Nanaimo | Nanaimo | 20 | 6 | .... | 42 flat, 564 coal-cars, 21 work-cars, 2 workmen's passenger-cars, 1 crane | 630 |
| Capilano Timber Co | North Vancouver | North Vancouver | 8 | 2 | .... | 1 flat, 12 logging-cars, 27 logging-trucks, 1 steam-shovel, 1 snow-plough | 42 |
| Clayburn Co | Clayburn | Clayburn | 8 | 2 | 2 | 3 flat, 11 ore-cars, 4 coal-cars | 18 |
| Columbia River Lumber Co | Vancouver | Golden | 28 | 3 | .... | 2 box, 2 flat, 82 logging-cars, 3 log-ladders | 89 |
| Comox Logging Co | " | Comox | 50 | 6 | .... | 200 logging-cars, 30 logging-trucks, 10 boarding-cars, 12-tank-cars, 2 flat, 1 box, 4 gons | 259 |
| Corbin Coal & Coke Co | Spokane, Wash. | Corbin | 12 | 2 | .... | 96 coal-cars, 8 work-cars, 2 steam-shovels, 1 rotary plough | 107 |
| Craig-Taylor Lumber Co | Vancouver | Otter | 5 | 2 | .... | 8 logging-cars | 8 |
| Crow's Nest Pass Lumber Co | Wardner | Waso | 9 | 2 | .... | 3 flat, 7 boarding-cars, 2 log-loaders | 12 |
| Clayton Lumber Co | Cloverdale | Cloverdale | 4 | 1 | .... | 4 trucks | 4 |
| Dolly Varden Mines Ry | Vancouver | Alice Arm | 18 | 3 | .... | 1 box, 15 flat, 2 cabooses | 18 |
| Eagle Timber Co | Vancuover | Grassy Bay | 3 | 1 | .... | 1 box, 1 flat, 7 logging-trucks, 1 pile-driver, 1 log-loader | 11 |
| East Kootenay Lumber Co. | Jaffray | Jaffray | 10 | 1 | .... | 24 logging-cars, 2 log-loaders | 26 |
| Eastern B.C. Ry. (Corbin Coal & Coke Co.), | Spokane, Wash. | Corbin | 16 | 2 | .... | 8 box, 19 flat, 1 baggage, 1 passenger-car, 1 pile-driver, 1 snow-plough | 31 |
| Eastern Lumber Co | Ladysmith | Ladysmith | 3 | 1 | .... | 5 logging-trucks | 5 |
| Ellis, H. M. | Vancouver | Lombard | 3 | 1 | .... | 10 logging-trucks | 10 |
| Galbraith Logging Co | New Westminster | Langley Mill | 4 | 1 | .... | 4 logging-trucks, 1 log-loader | 5 |
| Gordon Development Co | Vancouver | Half Moon Bay | 4 | 1 | .... | 1 flat, 10 logging-trucks | 11 |
| Granby Consolidated Mining & Smelting Co. | Vancouver | Anyox | 6 | 8 | 3 | 2 box, 12 flat, 50 ore-cars, 3 coal-cars, 20 ballast, 1 steam-shovel | 88 |
| Gwilt Lumber Co | Courtenay | Courtenay | 4 | 1 | .... | 2 sets logging-trucks | 4 |
| Griffin, Contractors | Vancouver | C. N. Ry. | .... | 2 | .... | | .... |
| Hedley Gold Mining Co | Hedley | Hedley | 3 | .... | 2 | 40 ore-cars | 40 |
| Heaps, E. H | Ft. Victoria, Vancouver | Ruskin | 12 | 1 | .... | 4 flat, 15 logging-trucks, 3 oil-cars, 2 tank-cars | 24 |
| Hoard & Flaherty | Bainbridge | Bainbridge | 3 | 1 | .... | 4 sets logging-trucks | 8 |
| International Timber Co | Vancouver | Campbell River | 20 | 3 | .... | 2 flat, 50 logging-cars, 10 work-cars, 1 box, 1 workmen's passenger-car, 1 pile-driver | 65 |
| Keystone Logging Co | Vancouver | Silverdale | 8 | 2 | .... | 1 flat, 11 logging-trucks, 1 pile-driver, 1 log-loader | 14 |
| King, M. B., Lumber Co | Newton | Kings | 3 | 1 | .... | 2 box, 1 logging-car | 3 |
| Khales International Timber & Trading Co. | Mission | Mission | 2 | 1 | .... | 1 logging-car | 1 |
| Lamb Lumber Co | Vancouver | Lang Bay | 4 | 1 | .... | 1 flat, 10 logging-cars, 4 logging-trucks | 15 |
| Mayo Lumber Co | Duncan | Duncan | 3 | 1 | .... | 2 logging-cars, 1 log-loader | 3 |
| McDonald-Murphy Logging Co | Campbell River | Campbell River | 3 | 1 | .... | 8 logging-trucks | 8 |
| Merrill-Ring-Moore Co | Vancouver | Johnstone Strait | 3 | 2 | .... | 19 logging-cars | 19 |
| Morrissey, Fernie & Michel (Crow's Nest Pass Coal Co.) | Fernie | Fernie | 12 | 5 | .... | 6 box, 49 coal-cars, 1 passenger-car, 5 workmen's passenger-cars, 1 caboose, 1 snow-plough, 1 crane | 64 |
| Magoffin, Contractors | Prince George | G.T.P. Ry. | .... | 4 | .... | | .... |
| Nimpkish Timber Co | Vancouver | Alert Bay | 9 | 3 | .... | 21 logging-cars, 12 logging-trucks, 1 pile-driver | 34 |
| New Ladysmith Lumber Co | Nanaimo | Nanaimo | 9 | 2 | .... | 11 cars | 11 |
| Otis-Staples Lumber Co. (St. Mary's & Cherry Ry.) | Wycliffe | Wycliffe | 34 | 3 | .... | 91 cars | 91 |
| Pacific Great Eastern Ry | Vancouver | North Vancouver to Whytecliffe | 13 | 10 | .... | 49 box, 138 flat, 35 stock, 3 refrigerators, 10 gons, 10 oil-cars, 4 cabooses | |
| " " | Vanouver | Squamish to Tatton | 231 | .... | .... | 45 ballast, 27 outfit-cars, 8 coaches, 1 comb. P. & B., 2 mail and baggage, 3 P. gas-motors, 3 steam-shovels, 1 ditcher, 1 pile driver, 1 crane | 352 |
| Pacific Coast Coal Mines | Victoria | Wellington | 20 | 3 | .... | 3 flat, 48 coal-cars | 51 |
| Pacific Mills | Ocean Falls | Kimsquit | 8 | 2 | .... | 25 logging-cars, 4 work-cars, 2 pile-drivers, 2 log-loaders | 33 |
| Powell River Co | Vancouver | Kingcome Inlet | 24 | 2 | .... | 3 flat, 32 logging-trucks | 35 |
| Port Moody-Coquitlam Ry. (Robt. McNair Lumber Co.) | Vancouver | Port Moody | 15 | 1 | .... | 6 flat cars, 12 logging-cars | 18 |
| Peterson, Contractors | Vancouver | | .... | 2 | .... | | .... |
| Ross Saskatoon Lumber Co | Waldo | Kootenay River | 12 | 2 | .... | 27 logging-cars | 27 |
| Salmon River Lumber Co | Sperling | Sperling | 5 | 1 | .... | 1 set logging-trucks | 2 |
| Seaford Logging Co | | Powell River | 3 | 1 | .... | 19 cars | 19 |
| Shawnigan Lake Lumber Co | Victoria | Shawnigan Lake | 6 | 2 | .... | 20 logging-trucks | 20 |
| Southgate Logging Co | Seattle, Wash. | Bute Inlet | 7 | 2 | .... | 1 flat car, 11 logging-cars, 2 logging-trucks, 1 pile-driver | 15 |
| Smith-Hutchinson Lumber Co | Vancouver | Fraser Valley (B. C.E. Ry.) | 2 | 1 | .... | 2 sets logging-trucks | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Straits Lumber Co. | Vancouver | Lang Bay | 9 | 1 | .... | 18 logging-trucks, 1 pile-driver 19 |
| Timberland Lumber Co. | New Westminster | Ladysmith | 6 | 1 | .... | 8 logging-cars 8 |
| Vancouver Lumber Co. (Mainland Cedar Co.) | Connaught Bridge | Port Neville | 4 | 1 | .... | 10 logging-cars, 1 box car, 4 logging-trucks, 1 work-car, 1 pile-driver, 2 log-loaders 19 |
| Victoria Lumber Co. | Chemainus | Chemainus and Ladysmith | 21 | 4 | .... | 73 logging-cars 73 |
| Wilson Brady, Ltd. | Vancouver | Valdes Is. | 7 | 2 | .... | 1 flat car, 16 logging-trucks 17 |
| Wilson Logging & Timber Co. | Vancouver | Heriot Bay | 6 | 1 | .... | 8 logging-trucks 8 |
| Wilson, J.C., Lumber Co. | Qualicum Beach | Qualicum Beach | 4 | 1 | .... | 8 logging-trucks 8 |
| Totals | | | 956 | 162 | 32 | 3,633 |

## Aerial Transportation Notes.

The Vancouver Island Aerial Service Co. is reported to have been inaugurated with headquarters at Victoria, B.C. A site for an aeroplane and hydroplane landing station is said to have been secured at Comox.

An Ottawa press report states that the Dominion Government will shortly undertake survey and forest protection service by aeroplane in the Rocky Mountain areas from stations at Vancouver, B.C., and Morley, Alta.

Lieut.-Colonel A. K. Tyler, O.B.E., who has been appointed officer commanding the Canadian Air Force, has gone to Camp Borden, Ont., to take up his duties. Applications for positions on the force have been received, and the work of selection and organization is reported to be in progress.

The Dominion Express Co. has, according to a London, Eng., cable, arranged for the transportation of passengers between London and Paris by aircraft. There will be a daily service in each direction, the time of the trip being scheduled at 2 hours 15 minutes. The single trip fare is approximately $75.

Airship R-80, built at Barrow-in-Furness, Eng., for the British Admiralty, was expected to be launched by the end of June. Her dimensions, etc., are:—length, 535 ft.; breadth, 70 ft.; lifting power, 38 tons; number of engines, four; power, 240 h.p. each; estimated maximum speed, 65 miles an hour.

The Clifton Aero Club Ltd. has been incorporated under the Ontario Companies Act with authorized capital of $40,000 and office at Niagara Falls, Ont., to provide aviation fields and aerodrome sites; to deal in aircraft and aeronautical supplies of all kinds; to carry passengers, merchandise and mail and give exhibition flights for hire. The provisional directors are J. B. Robinson, J. P. O'Reilly and H. R. Hillick, Niagara Falls, Ont.

## Plans for Grouping British Railways.

London, Eng., cablegram: — Sir Eric Geddes' scheme for the economical administration of the British railways, which is being considered by the cabinet, disposes of the widespread expectation that the systems were to be nationalized. The scheme, however, contains some revolutionary proposals. The 135 railway undertakings in England and Wales are to be distributed into four geographical groups, comprising the northeastern and central system, the northwestern and midland, the southwestern and south coast, and the western and Wales system, each administered by one board of management. The proposal is that the state will buy out the smaller companies, and lease their lines to the larger undertakings in the various groups, thus leaving the entire management to be continued by private enterprise. It is claimed that this scheme of co-operation will effect enormous economies in directors' fees and administration charges, while the pooling of locomotives and cars and the prevention of overlapping will make for greater efficiency.

The proposals will not, however, pass into law without a storm of protest from the working railwaymen, who have placed absolute dependence on the statement by Mr. Winston Churchill during the general elections to the effect that the government intended to nationalize the lines. Nationalization makes the same appeal to railwaymen as to the miners, and the tabling of Sir Eric Geddes' scheme is certain to usher in another big struggle on this issue.—Copyright by Toronto Star.

It may be explained that of the 135 railway undertakings in England and Wales apparently independent, only a comparatively few are trunk lines or of more than local importance, although a number of the smaller lines carry a very considerable traffic, and up to 1915, at any rate, paid dividends to their shareholders. The Cambrian Ry. is perhaps the largest of the independent companies but it has never been a prosperous concern owing to the fact that there is little traffic originating in the territory through which it runs. It has close affiliation with the London & North Western Ry., the Great Western Ry. and the Midland Ry. There are a number of other lines having considerable mileage and carrying a lot of traffic operated as separate lines, but owned jointly by two or more of the large trunk lines. The Shrewsbury & Hereford Ry., owned by the L. & N. W. Ry. and the G. W. Ry. and the lines operated by the Cheshire Lines Committee, owned by the Midland Ry. and the Great Central Ry.; and the Somerset & Dorset Ry., owned by the Midland Ry. and the London & South Western Ry. Of the other lines which are of little more than local importance, notwithstanding the amount of traffic carried, are the Taff Vale Ry., the Rhondda Valley Ry., the Barry Docks & Ry. Co., and other coal carrying lines in South Wales, and the Maryport & Carlise Ry. in Cumberland.

## Qu'Appelle, Long Lake & Saskatchewan Railway Land Suit.

An action brought by David Russell, Montreal, broker and promoter, to recover $8,175,000 from Sir Edmund Osler, Hon. W. Pugsley, the National Trust Co. as executor the estate of the late H. C. Hammond, and C. S. McInnes, as executor of the estate of the late Hon. D. McInnes, came before the Ontario High Court April 27. The plaintiff alleged that in May, 1916, he bought from the then directors of the Qu'Appelle, Long Lake & Saskatchewan Ry. 493,000 acres of its land grants for $500,000 and stock in the Canada Saskatchewan Land Co.; that the directors sought to evade carrying out the contract; that he lost $5,000,000 through the railway and its lands being subsequently sold to Mackenzie, Mann & Co. and the Canadian Northern Ry.; and the claim further included $200,- alleged to have been expended in attempting to recover the property from Mackenzie, Mann & Co. The statement of claim contained allegations of fraud, espionage, bribery and attempts on his liberty and life. The statement of defence claimed that Russell had made default in his agreement to pay for the land, and that in return for shares in the Canada Saskatchewan Land Co. he gave up all claim to the land. Russell was not in court when the case came up, and it was dismissed.

## Canadian National Railways. Earnings.

| | 1920 | 1919 |
|---|---|---|
| January | $ 7,726,562 | $ 6,787,517 |
| February | 6,516,059 | 6,265,562 |
| March | 7,761,326 | 7,160,036 |
| April | 8,207,478 | 6,936,635 |
| May | 8,305,860 | 7,884,287 |
| | $38,058,285 | $35,034,037 |

Approximate earnings for three weeks ended June 21, $5,305,120, against $4,621,197 for the same period 1919.

### Canadian Northern Railway System.

| | 1920 | 1919 |
|---|---|---|
| January | $4,200,700 | $4,026,000 |
| February | 3,862,300 | 3,363,800 |
| March | 4,587,700 | 3,554,350 |
| April | 4,732,623 | 3,878,149 |
| | $17,383,323 | $14,822,299 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan... | $13,914,569 | $13,328,628 | $585,941 | *$967,571 |
| Feb... | 13,557,104 | 12,843,231 | 713,873 | *267,242 |
| Mar... | 15,715,937 | 13,758,171 | 1,957,766 | 418,721 |
| Apr... | 15,929,416 | 13,587,570 | 2,341,846 | 253,222 |
| | $59,117,026 | $53,517,600 | $5,599,426 | *$562,870 |
| Incr. | $9,541,444 | $10,104,314 | ..... | ..... |
| Decr. | ..... | ..... | $562,870 | ..... |

Approximate earnings for May $16,161,000, and for three weeks ended June 21, $10,857,000, against $13,277,000 for May, and $9,073,000 for three weeks ended June 21, 1919.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Deficit | Increase |
|---|---|---|---|---|
| Jan. | $ 5,054,034 | $ 5,867,445 | $ 813,411 | $ 97,406 |
| Feb. | 4,660,831 | 5,159,742 | 498,911 | 188,987 |
| Mar. | 5,756,372 | 5,491,293 | 265,079 | 575,215 |
| Apr. | 5,477,816 | 5,187,340 | 290,476 | 465,592 |
| | $20,949,$53 | $21,705,820 | $ 756,767 | $1,327,200 |
| Incr. | $1,587,993 | $2,915,193 | ..... | ..... |
| Decr. | ..... | ..... | $1,327,200 | ..... |

Approximate earnings for May, $7,269,680, and for three weeks ended June 21, $5,905,666, against $6,846,886 for May, and $5,059,517 for three weeks ended June 21, 1919.

Sir William Mackenzie's Private Car. P. F. Casgrain, M.P. for Charlevoix-Montmorency, Que., asked in the House of Commons recently, "How many times has Sir William Mackenzie's private car travelled on the Canadian National Rys. within the last two years." The Minister of Railway replied: "The Government has no information as to the details of operation of each individual car, on the Canadian National Rys."

# Mainly About Railway People Throughout Canada.

J. Antonisen, who was appointed City Engineer, Port Arthur, Ont., recently, was born in Christiania, Norway, in 1869, and after spending a year in shipbuilding at Bergen, Norway, went to the United States in 1888, where he acquired some practical experience in civil engineering, and returned to Norway in 1894. After graduating in civil engineering at the Dresden University, he was engaged for about two years as Assistant Engineer on the Saxony Government Railways, and spent another four years in the Saxony Government department for improvement and regulation of rivers. He came to Canada in 1904 and entered C.P.R. service as Terminal Engineer, Winnipeg, and in 1905 was appointed City Engineer, Port Arthur, Ont., and subsequently also Manager, Public Utilities Commission there, resigning in 1911, when he was appointed City Engineer, Moose Jaw, Sasks., in 1912. He resigned the last mentioned position in 1913 and was appointed Superintendent, Brandon Municipal Ry., Brandon, Man., in 1913, which position he resigned in 1914, and returned to Port Arthur, Ont., where he conducted a private practice until his present appointment.

W. B. Bamford, who has been appointed District Freight Agent, C.P.R., Nelson, B.C., was born at Belleville, Ont., Sept. 10, 1863, and has been, prior to June, 1910, District Freight Agent, C.P.R., London, Ont.; June, 1910, to Apr., 1911, General Freight Agent, Atlantic Division, C.P.R., St. John, N.B.; Apr., 1911, to May, 1916, Division Freight Agent, Atlantic Division, C.P.R., St. John, N.B.; May, 1916, to June 1, 1920, District Freight Agent, C.P.R., Toronto.

Kennet William Blackwell, Vice President, Canadian Steel Foundries Ltd., Montreal, died there, June 11, after a short illness. He was born at Devizes, Eng., July 16, 1850, and was the son of T. E. B. Blackwell, Vice President and General Manager of the G.T.R. from 1857 to 1863. He was education at Bishops College, Lennoxville, Que., and in England, and took up the study of mechanical engineering at the age of 17, spending five years in the drawing office of the G.T.R. shops at Montreal, after which he was, from 1872 to 1875, Shop Foreman, G.T.R., Montreal; 1875 to 1879, Assistant Mechanical Superintendent, G.T.R., Montreal; 1879 to Sept, 1881, Mechanical Superintendent, Chicago and Grand Trunk Rd.; 1881 to 1883, Superintendent, Locomotive and Car Department, C.P.R., Montreal. In 1883 he resigned to enter business in connection with the manufacture of railway supplies in Montreal, and eventually became President and Managing Director of the Canada Switch & Spring Co., which later became the Montreal Steel Works Ltd., of which he was President, and when the business was taken over by Canadian Steel Foundries Ltd., he became Vice President of the last mentioned company. He was President of the Canadian Society of Civil Engineers, now the Engineering Institute of Canada, in 1903, and was subsequently an honorary councillor of that institute. He was also a director, at various times, of the Locomotive & Machine Co., Montreal; Vice President, Suburban Tramway & Power Co., Montreal Park & Island Ry., Montreal Street Ry., Nova Scotia Steel & Coal Co., and several financial and industrial companies. The funeral took place at Mount Royal Cemetery, Montreal, June 14, when a large number of transportation men attended.

George Bonham, who died suddenly, from apoplexy, at Montreal, June 1, aged 83, was at one time accountant on the Quebec & Lake St. John Ry., and remained for a time with the Canadian Northern Quebec Ry., when the control of the former line passed to the latter.

W. A. Booth, chief draftsman, G.T.R., Montreal, and Secretary Canadian Railway Club, was elected Vice Chairman of the Society of Railway Club Secretaries, at Atlantic City, recently.

J. M. Copeland, who has been appointed Travelling Agent, Great Northern Ry., Toronto, was presented with a silver mounted and engraved umbrella recently, by R. W. Long, Divisional Freight Agent, G.T.R., Toronto, and staff, on leaving the G.T.R. service.

T. M. Hyman,
Master Car Builder, London, Ont., Shops, Grand Trunk Railway.

J. J. Crowley, Assistant Superintendent, Canada Southern Division, Michigan Central Rd., St. Thomas, Ont., died at St. Bernard Hospital, Chicago, Ill., June 14.

J. H. Cunningham, who has resigned as General Agent, Union Pacific Rd., Vancouver, B.C., is now President of Rock-Cunningham Inc., Seattle, Wash., shippers and steamship agents.

Mrs. Dennis, wife of Col. J. S. Dennis, C.M.G., Chief Commissioner of Colonization and Development, C.P.R., died at Calgary, Alta., June 8, after a long illness.

Richard Doyle has been appointed Assistant General Manager, Mississippi River & Bonne Terre, Ry., Bonne Terre, Mo., operating 46.2 miles of line from Riverside to Doe Run, and 8.11 miles of branches. He was born at Dudley, Ill., Nov. 12, 1862, and entered transportation service June 16, 1862, since when he has been, to Jan. 1, 1883, telegraph operator, Big Four Rd., at various points; Jan. 1, 1883, to Aug. 1, 1892, dispatcher; Aug. 1 to Nov. 15, 1892, chief dispatcher; Nov. 15, 1892, to Mar. 1, 1893, Assistant Trainmaster; Mar. 1, 1893, to Dec. 1, 1899, Trainmaster same road, Mattoon, Ill.; Dec. 1, 1899, to Jan. 1, 1904, Trainmaster, Wabash Rd., St. Thomas, Ont.; Jan. 1, 1904, to Nov. 1, 1906, Superintendent, same road, Moberly, Mo.; Nov., 1906, to Dec. 1, 1909, Trainmaster, G.T.R., Battle Creek, Mich.; Dec. 1, 1909, to Dec. 15, 1910, Master of Trainsportation, same road, Durand, Mich.; Dec. 15, 1910, to Nov., 1912, Trainmaster and Assistant Superintendent, Chicago & Alton Rd,, Springfield, Ill.; Nov., 1912, to Mar. 16, 1916, Trainmaster; Mar. 16, 1916, to June 1, 1920, Superintendent, Mississippi River & Bonne Terre Ry., Bonne Terre, Mo.

James Dunsmuir, at one time chief owner of the Esquimalt & Nanaimo Ry., and later a director of the C.P.R., which company acquired the control of the E. & N.R., died at Cowichan Lake, B.C., June 6, as the result of a stroke, after being in poor health for some time. He was born at Fort Vancouver July 8, 1851. He entered business life with his father, who discovered and developed the first coal measures of any importance in British Columbia, and eventually succeeded him as President and chief owner of the Union and Wellington collieries, and the Esquimalt & Nanaimo Ry. These properties have since passed into the hands of Canadian Collieries (Dunsmuir) Ltd., and the C.P.R. respectively. He was a director of the C.P.R. for some years after 1908, was a member of the B.C. Legislature from 1898 to 1902, President of the Council 1900 to 1902, and Lieutenant-Governor of the province from 1906 to 1909. He entertained the present King and Queen when they visited British Columbia in 1901, and was present at the coronation of the late King Edward and Queen Alexandra in 1902.

L. C. Fritch, at one time General Manager, Eastern Lines, Canadian Northern Ry., Toronto, and latterly Vice President and Chief Engineer, Chicago, Rock Island & Pacific Ry., under corporate control, has been elected Vice President of the latter company, in charge of construction, maintenance and capital expenditures, with office at Chicago.

John Macneill Grieve, who has been appointed General Superintendent, Sleeping, Dining and Parlor Cars and News Service, Canadian National Rys., Toronto, was born in Scotland, Aug. 25, 1870, and entered railway service in July, 1900, since when he has been, to Sept., 1900, waiter, Intercolonial Ry., Halifax, N.S.; Sept., 1900, to Apr., 1907, waiter and steward, C.P.R., Montreal; May, 1907, to Apr., 1908, waiter, Apr., 1908, to Mar., 1910, dining car steward, Mar., 1910, to Mar. 1912, Inspector, Mar., 1912, to Apr., 1915, Chief Inspector, Apr., 1915, to Oct., 1917, Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Canadian Northern Ry., Winnipeg; Oct., 1917, to May 1, 1920, Superintendent, same department, Canadian Northern Ry., latterly Canadian National Rys., Winnipeg.

John Halstead, whose appointment as Division Freight Agent, C.P.R., Winnipeg, was announced in our last issue, entered C.P.R. service Jan. 7, 1892, since when he has been, to May, 1894, messenger and clerk, Freight Department,

London, Ont.; May, 1894, to July, 1897, billing clerk, Toronto; July, 1897, to July, 1901, stenographer, General Freight Department, Toronto; July, 1901, to May, 1902, chief clerk, General Freight Department, Toronto; May to Nov., 1902, Travelling Freight Agent, Winnipeg; Nov., 1902, to Feb., 1906, chief clerk, General Freight Department, Vancouver, B.C.; Feb. to Oct., 1906, Freight and Passenger Agent, Tacoma, Wash.; Oct., 1906, to Jan. 1, 1909, Assistant General Freight Agent, Calgary, Alta.; Jan. 1, 1909, to May 15, 1920, Division Freight Agent, Calgary, Alta.

R. A. C. Henry, B.A., B.Sc., Assistant Engineer, Railways and Canals Department, Ottawa, has been appointed Engineer in Charge, for the Dominion Government, in connection with the arbitration as to the acquisition of the G.T.R. System, and is located in the Drummond Building, Montreal. F. P. Moffatt of Winnipeg, formerly Senior Division Engineer, Hudson Bay Ry., has been appointed Assistant Engineer in connection with the work.

C. R. Hosmer, one of the C.P.R. directors, and Mrs. Hosmer, are spending the summer at Dorval, Que.

T. M. Hyman, whose appointment as Master Car Builder, G.T.R., London, Ont., was announced in our last issue, was born near Bristol, Eng., June 12, 1885, and after serving an apprenticeship in car construction in England, came to Canada and entered G.T.R. service at Point St. Charles shops, Montreal, and in 1914 was Car Inspector. On the outbreak of war in 1914, he enlisted for active service and went overseas with the Second Brigade of the first contingent, and served throughout the war, receiving the Distinguished Conduct Medal. On his return to civil life in 1919, he was appointed Assistant General Foreman, Car Department, Point St. Charles shops, G.T.R., Montreal, and was appointed to his present position May 1.

Walter E. Joyce, who has been engineer in charge of the Montreal tunnel, Canadian National Rys., since the late S. P. Brown resigned the position of Chief Engineer, has resigned, and is reported to have been appointed in charge of the Ridout suspension bridge at Kingston, N.Y.

H. G. Kelley, President G.T.R. and G.T. Pacific Ry., is a member of the committee on freight stations, organization, simplification of switching, and mechanical appliances, of the International Railway Congress, which will meet in Rome, Italy, in April and May, 1922.

Jas. A. C. Kelman, whose appointment as Telegraph Traffic Supervisor, Central & Western Divisions, Grand Trunk Pacific Ry., Winnipeg, was announced in our last issue, was born at Bowmanville, Ont., Nov. 1, 1886, and entered telegraph service Feb. 1, 1902, since when he has been, to Mar. 30, 1903, messenger, Great North Western Telegraph Co., Bowmanville, Ont.; Feb. 1, to Sept. 10, 1903, telegraph operator, same company, Brighton, Ont.; Oct. 1, 1903, to Nov. 1, 1905, telegraph operator, G.N.W.T. Co. and C.P.R. Telegraph, Toronto; Nov., 1905, to July, 1908, telegraph operator, C.P.R. and Canadian Northern Ry., Winnipeg; July 13, 1908, to Nov. 1, 1910, telegraph operator, G.T.P. Ry., Winnipeg; Nov. 1, 1910, to June 1, 1917, chief telegraph operator, same company, Winnipeg; June 1, 1917, to May 17, 1920, telegraph circuit manager, same company, Winnipeg.

Ernest Roy Logie, whose appointment as Division Engineer, Superior Division, Canadian National Rys., Hornepayne, Ont., was announced in a recent issue, was born at Chatham, N.B., Aug. 16, 1886, and entered railway service in Mar. 1907, since when he has been, to Sept., 1908, draftsman and rodman, Grand Trunk Pacific Ry., Winnipeg, and Edmonton, Alta.; June, 1909, to Dec., 1910, draftsman, leveller and Resident Engineer, successively, Bangor & Aroostook Rd., Bangor, Me,; Jan., 1911, to Jan., 1912, topographer on location, and instrument man on construction, Franz to Hearst, Ont., Algoma Central & Hudson Bay Ry.; Jan., 1912, to Sept., 1917, Resident Engineer on construction, Sudbury-Port Arthur line, Canadian Northern Ry., and Lambton-Guelph line, Toronto Suburban Ry.; Sept., 1917, to Dec., 1918, Resident Engineer, Toronto, Hamilton & Buffalo Ry., Bridgeburg and Hamilton, Ont.; Jan., 1919, to Feb., 1920, Resident Engineer on Maintenance, Canadian National Rys., Rosedale, Ont.

J. K. Macdonald, who has been appointed Chief Engineer, Northern Light Railways Co., Elk Lake, Ont., in charge

J. M. Grieve,
General Superintendent, Sleeping, Dining and Parlor Cars and News Service, Canadian National Railways.

of surveys and construction of the projected light railways in Northern Ontario, was born in 1869, and graduated in civil engineering from Ottawa University in 1892, and held various minor engineering positions in Canada and the U.S. from 1892 to 1900. In 1900 he was contractors' engineer on the harbor works at Port Colborne, Ont.; 1901, Chief Engineer and General Superintendent, Marietta, Columbus & Cleveland Ry., and rebuilt and operated 67 miles of coal railway, which was subsequently sold to the Wabash Rd.; 1902, Division Engineer, Missouri Pacific Ry. on construction work in Arkansas; 1903, Division Engineer on location; 1904, Locating Engineer on the southern end of the Toronto-Sudbury line, C.P.R.; 1905, Division Engineer, New Liskeard to McDougalls Chutes, Timiskaming & Northern Ontario Ry.; 1906 to 1907, prospecting mining claims, and contractors' engineer, Canadian Northern Ry.; 1908, on location work, Ontario Northern & Timagami Ry. from Sturgeon Falls north, and also engaged on the construction of the Northern Ontario Smelter at Sturgeon Falls, Ont.; 1909, Inspection Engineer, Atlantic, Quebec & Western Ry., Gaspe, Que.; 1910, Engineer for the Foundation Co. engaged on the reconstruction of the C.P.R. Windsor St. station, Montreal; 1911, Engineer in charge of the Mond Nickel Co.'s connecting railway; 1912, Contractors' Engineer, C.P.R., double tracking on the Lake Superior Division; 1913, engaged in mine surveying, prospecting and municipal work, Sudbury, Ont.; 1914, Contractors' Engineer, Trent Canal, Washago, Ont. From 1915 to 1919, he was in military service overseas, two years being spent in France on light railway location and construction, and subsequent to his discharge in Apr., 1919, he has acted as a vocational officer for the Disabled Soldiers Civil Reestablishment Commission at Toronto.

W. McIlroy, whose appointment as General Agent, Passenger Department, C.P.R., Detroit, Mich., was announced in our last issue, entered C.P.R. service in May, 1891, in the telegraph department, and has been, from June, 1892, to July, 1893, clerk, Galt, Ont.; July 1893, to Feb., 1899, telegraph operator, Toronto; Feb., 1899, to June 1900, agent, Brantford, Ont.; June, 1900, to Mar., 1905, agent, Galt Ont.; Mar., 1905, to Oct., 1912, agent, Peterborough, Ont.; Oct., 1912, to May, 1915, City Passenger and Ticket Agent, Hamilton, Ont.; May, 1915, to June, 1916, City Passenger Agent Toronto; June, 1916, to June 1, 1920, chief clerk to District Passenger Agent, Toronto.

Miss Evelyn MacInnes, second daughter of W. R. MacInnes, Vice President Traffic, C.P.R., was married at Montreal June 15, to Capt. R. B. S. Reford, M.C., of the Irish Guards, formerly A.D.C. to the Lord Lieutenant of Ireland, and elder son of R. Wilson Reford, of the Robert Reford Co., Montreal.

Arthur Tilley McKean, whose appointment as Division Freight Agent, C.P.R., Calgary, Alta., was announced in our last issue, was born at St. John, N.B., Dec. 18, 1886, and entered C.P.R. service Apr. 1, 1903, since when he has been, to Mar., 1906, clerk and stenographer, General Freight Department, St. John, N.B.; Mar., 1906, to Jan., 1908, clerk, assistant chief clerk and chief clerk to Assistant Freight Traffic Manager, Winnipeg; Jan., 1908, to June, 1911, Soliciting Freight Agent, Winnipeg; June, 1911, to Jan., 1916, City Freight Agent, Winnipeg; Jan., 1916, to May 15, 1920, Division Freight Agent, Winnipeg.

R. M. MacMillan, whose appointment as Divisional Superintendent of Telegraphs, and Superintendent of Time Service, Central Division, Grand Trunk Pacific Ry., Winnipeg, was announced in our last issue, entered telegraph service in 1904 as messenger with the Western Union Telegraph Co., Sydney, N.S., and worked through the various positions of clerk, operator and local manager there, and was later transferred to Halifax, N. S. In 1911 he went west and entered C.P.R. Telegraphs service, transferred to the Grand Trunk Pacific Telegraph service at Winnipeg in the same year, and was subsequently city manager in that service at Regina, Sask., and Calgary and Edmonton, Alta., successively, and, during the absence on active military service of F. T. Caldwell, was appointed acting Divisional Superintendent of Telegraphs.

Mrs. A. D. MacTier, wife of the Vice President, Eastern Lines, C.P.R., and Miss Adeline MacTier, are spending the summer in England.

Richard Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., died there June 8. He was born in Wales in 1850, and served for nearly eight years in the construction and traffic departments of British railways before coming to Canada. He entered C.P.R. service in 1881, serving successively as contractor, Assistant Manager of Construction, Nipissing Division; Superintendent, Lake Superior Division; Superintendent, Pacific Division, and General Superintendent, Pacific Division to 1907, when he was appointed Executive Agent for the Pacific Coast, and later, General Executive Assistant for British Columbia.

Charles Sedgewick Morse, who has been appointed District Freight Agent, C.P.R., Toronto, was born at Ottawa, Ont., Aug. 31, 1889, and entered C.P.R. service Mar. 1, 1906, since when he has been, to Jan. 1, 1909, stenographer, tracing clerk and export clerk, Winnipeg; Jan. 1, 1909, to Apr. 1, 1912, Travelling Freight Agent, Calgary, Alta.; Apr. 1, 1912, to July 15, 1914, District Freight Agent Fort William, Ont.; July 15, 1914, to June 1, 1920, District Freight Agent, London, Ont.

Lord Mount Stephen, first President of the C.P.R., celebrated his 91st birthday in England, June 5.

Jas. Murdoch, of Toronto, who has resigned his position as a member of the Domininon Board of Commerce, has announced that he will return to his office in Cleveland, Ohio, as Vice President of the Brotherhood of Railway Trainmen of America.

John Murphy, Chief Electrical Engineer, Railway and Canals Department, and Board of Railway Commissioners, addressed the Engineering Institute of Canada, Ottawa Branch, recently, on ice problems and their solution, illustrated with moving pictures and lantern slides.

Charles F. Needham, whose appointment as Assistant to General Superintendent, Motive Power and Car Departments, G.T.R., Montreal, was announced in our last issue, was born at London, Ont., Dec. 9, 1877, and entered G.T.R. service July 2, 1898, since when he has been, with the exception of short periods in the road and transportation department and the motive power department, successively as follows,—clerk, head time keeper, accountant, chief clerk, and special assistant, to 1905, at Toronto, and to May 17, 1920, at Montreal.

David Pottinger, I.S.O., at one time General Manager, Intercolonial & Prince Edward Island Railways, at Moncton, N. B., and Mrs. Pottinger, who spent most of the winter in Montreal, are at Schediac, N.B., for the summer.

C. Price-Green, Industrial Commissioner Canadian National Rys., Toronto, spoke on forests and forest preservation in Canada, before the National Editorial Association at Boston, Mass., June 4.

John Gunion Rutherford, C.M.G., one of the members of the Board of Railway Commissioners, Ottawa, has been given the degree of doctor of veterinary science, honoris causa, by Toronto University.

S. Osborne Scott, General Passenger Agent Canadian National Rys., Winnipeg, was married there, June 2, to Miss Audrey Heath.

Lady Shaughnessy and Hon. Marguerite Shaughnessy have returned to Montreal from England.

Mrs. Spencer, widow of C. W. Spencer, at one time in the C.P.R. service, and afterwards with the Canadian Northern Ry., and Miss Beatrice Spencer, who spent the winter in California, have returned to Montreal.

Frederick William Sterling, who has been appointed District Freight Agent, C.P.R., Edmonton, Alta., was born at Thornbury, Ont., Sept. 13, 1879, and entered C.P.R. service in 1894, since when he has been, to 1903, messenger, local freight office, Vancouver, B.C.; 1903 to 1904, claims clerk, General Freight Department, Vancouver, B.C.; 1904 to 1906, chief clerk, General Freight Department, Vancouver, B.C.; 1906 to 1910, Contracting Freight Agent, Seattle, Wash.; 1910 to 1913, Travelling Freight Agent, Vancouver, B.C.; 1913 to May, 1920, District Freight Agent, Nelson, B.C.

William Tansley, who has been appointed Car Service Agent, C.P.R., Toronto, was born at Shelburne, Ont., Dec. 27, 1872, and entered C.P.R. service in Sept., 1889, since when he has been, to 1900, operator and agent at various points on the Ontario Division; 1901 to 1907, dispatcher, Toronto; 1907 to 1912, Chief Dispatcher, Toronto; 1907 to 1912, Assistant Superintendent, Havelock, Ont.; 1914 to 1915, Assistant Superintendent, Toronto; May 18 to July, 1915, Assistant Superintendent, Smiths Falls, Ont.; July to Dec., 1915, acting Superintendent of Car Service, Eastern Lines, Montreal; Dec., 1915, to Feb., 1916, Assistant Superintendent, Montreal Terminals; Feb., 1916, to Jan., 1917, Assistant Superintendent, London, Ont.; Jan. to Apr., 1917, acting Superintendent, London, Ont.; Apr., 1917, to Apr., 1918, Superintendent, Laurentian Division, Quebec District, Montreal; Apr., 1918, to May 31, 1920, Car Service Agent, C.P.R., St. John, N.B.

Lady Van Horne, and Miss Van Horne, are spending the summer at Covenhoven, St. Andrews, N.B.

Mrs. Vaughan, wife of H. H. Vaughan, formerly Assistant to Vice President, C. P.R., and their family, are spending the summer at Lake Placid, N.Y.

W. G. Vernon, Yardmaster, G.T.R., Windsor, Ont., dropped dead in the yards there, June 24, aged 54.

F. L. Wanklyn, General Executive Agent, C.P.R., Montreal, and Mrs. Wanklyn, are spending the summer at their country house, at Senneville, Que.

Howard Williams, C.B.E., heretofore Assistant General Manager, London & North Western Ry. of England, has been appointed General Manager, Central Argentine Ry.

John H. Wilson, whose appointment as Locomotive Foreman, C.P.R., John St., Toronto, was announced in our last issue, was born at Aberdeen, Scotland, Aug. 31, 1878, and entered C.P.R. service May 1, 1899, since when he has been, to May, 1900, machinist, Winnipeg; May to Dec., 1900, charge hand, Calgary, Alta.; Jan., 1901, to Nov., 1906 assistant foreman, Brandon, Man.; Nov., 1906, to Aug. 1909, Locomotive Foreman, Brandon, Man.; Aug. to Dec. 1909, Locomotive Foreman, Moose Jaw, Sask.; Jan., 1910, to Nov., 1914, Locomotive Foreman, Kenora, Ont.; Nov., 1914, to Apr., 1916, Locomotive Foreman, Canadian Northern Ry., Hornepayne, Ont.; Apr. 1916, to Apr. 1919, General Foreman, Canadian Northern Ry., Trenton, Ont.; Apr. to Nov., 1919, Locomotive Foreman, C.P.R., Smiths Falls, Ont.; Nov., 1919, to Apr., 1920, Locomotive Foreman, C.P.R., Browneville Jct., Me.

## Delaware & Hudson Co.'s Canadian Properties.

The Delaware & Hudson Co.'s annual report, for the year ended Dec. 31, 1919, contains the following:—Your railroad properties in Canada, operated by their owners, obtained the following results, which are compared with the previous year:

The Quebec, Montreal & Southern operating revenues decreased $208,238.47, or 26.49%, and operating expenses increased $49,874.32, or 6.34%. Income from hire of freight cars increased $49,480.83, or 22.04%, and net operating income, not deducting interest due your company, was $7,712.47, a decrease of $199,264.27. Freight movement decreased 23,355,427 ton miles, or 51.97%, mainly on account of the reaction following the war. Freight revenue decreased $211,476.70, or 33.97%. Passenger movement decreased by 491,408 passenger miles, or 10.69%. Operating expenses were increased by charges in anticipation of wages adjustments which may be necessary and will probably be retroactive to Jan. 1, 1919. Decreases occurred in maintenance of way and structures and transportation expenses, but were more than offset by an increase in the outlay for maintenance of equipment resulting from heavy repairs to locomotives during the year.

The Napierville Junction operating revenues increased $73,474.20, or 17.27%; operating expenses increased $83,831.25, or 27.71%, and net operating income decreased $10,118.92, or 13.64%. Operating expenses were increased by necessary wages adjustments and this company's proportion of the increased cost of operating through passenger train service due to increased wages paid by the U.S. Railroad Administration. Passenger revenue increased $124,443.64, or 97.01%, on account of the increase in passenger traffic which followed the termination of the war and the operation of through passenger train service to the station at Windsor St., Montreal. However, this increase was more than offset by a decrease in freight revenue of 23.76%, and the increase in expenses.

## Toronto Union Station Progress.

W. F. Maclean, M.P. for South York, Ont., asked the following questions in the House of Commons June 8:—"Is the Minister of Railways aware that the new Union Station at Toronto, which is being built largely at the expense, either directly or indirectly, of the people of this country, has been completed, and is practically ready for occupation, but that for some reason or another the use of it is delayed? Is he also aware that the people of Toronto and of Ontario generally would like to see the splendid accommodation provided in that station for postal, express and passenger business, put at their disposal at the earliest possible date? If some legal difficulty stands in the way, I should like to know whether the government is prepared to remove that and to give the public the use of the building?"

The Minister of Railways, Hon. J. D. Reid, replied:—"The work in connection with the new station at Toronto is not and will not be completed for some little time. It has been delayed on account of strikes and shortage of material. The Toronto Terminals Railway Co., which is constructing this station, tells me that every effort is being made to complete it at the earliest possible moment.

## Railway Association of Canada's Officers, Committees, Etc.

Following is a revised, up-to-date list of Railway Association of Canada's officers, committees, etc.

Honorary Chairman, Lord Shaughnessy, Chairman, C.P.R. Co., Montreal.

President, H. G. Kelley, President, G. T.R., Montreal.

General Secretary, C. P. Riddell, Montreal.

Executive Committee—Lord Shaughnessy, Chairman, C.P.R., Montreal; H. G. Kelley, President, G.T.R., Montreal; E. W. Beatty, President, C.P.R., Montreal; D. B. Hanna, President, Canadian National Rys., Toronto; J. N. Beckley, President, T., H. & B. Ry., Rochester, N.Y.; A. H. Smith, President, New York Central Rd., New York.

Operating Committee—Grant Hall, Vice President, C.P.R., Montreal; W. D. Robb, Vice President, G.T.R., Montreal; M. H. MacLeod, Vice President, C.N.R., Toronto; F. F. Backus, General Manager, T., H. & B. R., Hamilton; J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke.

Traffic Committee—C. A. Hayes, Vice President, C.N.R., Toronto; J. E. Dalrymple, Vice President, G.T.R., Montreal; W. R. MacInnes, Vice President, C. P.R., Montreal; G. C. Martin, General Traffic Manager, T. H. & B. R., Hamilton; Carl Howe, Traffic Manager, Michigan Central Rd., Chicago.

Financial Committee—I. G. Ogden, Vice President, C.P.R., Montreal; Frank Scott, Vice President, G.T.R., Montreal; A. J. Mitchell, Vice President, C.N.R., Toronto; W. H. Maund, Sec.-Treas., T. & N. O. R., Toronto; E. B. Barber, Comptroller, Algoma Central & Hudson Bay Ry., Sault Ste. Marie.

Legal Committee—W. C. Chisholm, General Solicitor, G.T.R., Montreal; W. H. Curle, General Solicitor, C.P.R., Montreal; Gerard Ruel, General Counsel, C. N.R., Toronto; F. E. Robson, General Solicitor, Michigan Central Rd., Detroit; E. D. Cahill, General Solicitor, T. H. & B. Ry., Hamilton.

Sub-Committee on Transportation — H. T. Malcolmson, Superintendent, T. H. & B.R., Hamilton; H. Shearer, General Superintendent, M.C.R., Detroit; C. G. Bowker, General Superintendent, G.T.R., Toronto; F. P. Brady, General Manager, C.N.R., Montreal; A. Price, General Manager, C.P.R., Montreal; W. H. Farrell, General Manager, Algoma Eastern Ry., Sudbury; W. A. Griffin, Sup't of Traffic, T. & N. O. Ry., North Bay.

Sub-Committee on Car Service — F. Price, Sup't Car Service, G.T.R., Montreal; A. Hatton, Gen'l Sup't Car Service, C.P.R., Montreal; A. E. Lock, Sup't Car Service, T. H. & B. R., Hamilton; J. P. Driscoll, Gen'l Sup't Car Service, C.N.R., Toronto; W. S. Moy, Car Accountant, Quebec Cent. Ry., Sherbrooke; W. M. Hugill, Sup't Car Service, A. C. & H. B. R., Sault Ste. Marie; J. S. Gordon, General Manager, Quebec Oriental Ry., New Carlisle; C. A. Stewart, Manager, Temiscouata Ry., Riviere du Loup.

Sub-Committee on Rolling Stock—W. H. Sample, Gen'l Sup't Motive Power, G. T.R., Montreal; W. H. Winterrowd, Chief Mech. Engineer, C.P.R., Montreal; W. U. Appleton, Mechanical Engineer, C.N. R., Moncton; H. L. Rodgers, Mech. Engineer, T. & N. O. R., North Bay; W. T. Kuhn, Sup't Motive Power, T. H. & B. R., Hamilton; G. M. Robins, Master Mechanic, Quebec Central Ry., Sherbrooke; G. E. Parks, Mechanical Engineer, Mich. Cent. Rd., Detroit; T. C. Hudson, Gen'l Master Mechanic, C.N.R., Montreal.

Sub-Committee on Engineering—F. L. C. Bond, Chief Engineer, G.T.R., Montreal; A. F. Stewart, Chief Engineer, C. N.R., Toronto; J. M. R. Fairbairn, Chief Engineer, C.P.R., Montreal; R. S. McCormick, Gen. Supt. and Chief Engineer, A. C. & H. B. R., Sault Ste. Marie; R. L. Latham, Chief Engineer, T. H. & B. R., Hamilton.

Sub-Committee on Wages and Working Conditions—E. R. Battley, Sup't Motive Power, G.T.R., Montreal; Geo. Hodge, Asst. to Vice President, C.P.R., Montreal; A. J. Hills, Asst. to President, C.N.R., Toronto.

Sub-Committee on Claims—J. M. Eedson, Freight Claim Agent, T. H. & B. R., Hamilton; E. Arnold, Freight Claim Agent, G.T.R., Montreal; G. C. Jackson, Auditor of Claims, C.P.R., Montreal; H. McDonald, Freight Claim Agent, C.N.R., Toronto.

The Railway Association of Canada Western Lines.

Secretary—E. J. Stone, Winnipeg.

Western Operating Committee—W. P. Hinton, Vice President, G. T. Pacific Ry.; A. E. Warren, General Manager, C.N.R.; C. Murphy, General Manager, C.P.R.; D. C. Coleman, Vice Persident, C.P.R.; C. E. Dafoe, Gen'l Superintendent, Midland Ry. of Manitoba.

Sub-Committee on Traffic and Transportation—H. H. Brewer, General Superintendent, G.T.R.; C. E. Dafoe, General Superintendent, Midland Ry. of Manitoba; A. E. Stevens, General Superintendent, C.P.R.; A. Wilcox, General Superintendent, C.N.R.; W. J. Manders, Asst. Frt. Trf. Manager, C.N.R.; W. M. Kirkpatrick, Asst. Frt. Trf. Manager, C.P.R.; W. C. Bowles, General Freight Agent, C.P.R.; A. E. Rosevear, General Freight Agent, G. T. Pacific Ry.; E. D. Cotterell, Sup't of Car Service, C.P.R.; T. P. White, Sup't of Car Service, G. T. Pacific Ry.; E. Crawford, Sup't of Car Service, C.N.R.; A. G. Sutherland, Sup't of Car Service, E. D. & B. C. Ry.

## Grant Hall Honored in Winnipeg.

Grant Hall, Vice President C.P.R., was entertained at dinner at the Royal Alexandra Hotel, Winnipeg, on June 4, the event being somewhat belated, owing to the fact that when he was appointed to his present position he had to leave Winnipeg suddenly for Montreal to assume it. Nearly 300 leading citizens from throughout the west were present, Sir Jas. Aikins, Lieutenant Governor of Manitoba, presiding. Mr. Hall, in replying to the toast of his health, is reported as saying that it was a really great encouragement to a man to find that after years spent among them they would go to extremes of trouble to show him such marks of approval and appreciation. It was not all of his own volition that he went to Montreal, for both on account of his own many warm friendships and associations in Winnipeg and the west, and the fact that his family has grown up here and formed close ties in Winnipeg, it was a great loss to him and them to leave. He had watched with constant faith the development of Winnipeg and of the west for 20 years, from the time when at the invitation of Sir William Whyte he had first gone west. He continued:—"I have seen the C.P.R. extend its main line passenger service from one train a day to three, including the Trans-Canada Limited. I have seen 100 miles of the track doubled; the Winnipeg yards grow to 150 miles of track, including Transcona; the shops from 500 men to over 2,000, and the Ogden shops established with 1,200 men. Thirty years ago I was only an apprentice in the Grand Trunk shops. I cannot speak to my western friends on an occasion like this without referring to the problems that face us as a result of the war. The western men gave a good account of themselves in France and Flanders and may be relied upon to do the same now at home. I am not a pessimist, but I would suggest that we all get together and consider our problems, present and future, with a minimum of provocative argument. We want to serve you; we cannot get along without you. I claim that we should be allowed, and should get, the remuneration necessary to make that service adequate to your needs. Though I live in the east, my heart is with you, for I appreciate the west. I hope you will always believe I am trying to give you the service to which you are entitled. Sometimes I hear western men say that the eastern men do not know enough about the west. I know that western men do not know enough about the east. We are one country, and the west is an important part of it, but I would suggest that you learn the east, and learn to appreciate it."

Premier Norris of Manitoba, who spoke for all the other western premiers as well as himself, voiced the sentiments of the west in regretting the departure of such a sterling public spirited person as Mr. Hall. The Mayor of Winnipeg, in the name of its citizens at large, paid a tribute of appreciation to the services rendered the city by Mr. Hall, during his executive residence there. Among the other speakers were the Mayor of Toronto, and Peter Heenan, M.L.A., for Kenora, Ont., a C.P.R. employe, who is often called upon to represent the men in conference with the management, and who testified to the confidence they have in Mr. Hall.

## Alaskan Railway Work for 1920.

Construction and preparatory work for 1920 on the southern and northern sections of the Alaska Government Ry., as outlined by Col. Frederic Mears, Chairman and Chief Engineer, Alaskan Engineering Commission, includes heavy bridges and rock-cut work, as well as new grading and repair of old grades. The contract has been let for the 504 ft. truss span over the Susitna River, 265 miles north of Seward. Examinations are being made for the foundations of the Hurricane Gulch steel arch bridge, 284 miles north of Seward, which will be the northern limit of operation for the southern division this year. It was necessary to start excavation at this point early in the season, owing to the heavy yardage in the approach cut. Several miles of sidehill grading work will be carried out by steam shovel along the Susitna River. North of this work, in the same locality, about 24 miles of regrading are required, to repair the old grade, which has deteriorated badly at several points owing to its abandonment in 1917-18. Distribution of supplies and materials, from the present end of track, 237 miles north of Seward, for 38 miles northward was carried out during the winter by sledding over frozen roads. On the northern division construction will be confined to Nenana Canyon, over a distance of about 10 miles, 120 miles south of Fairbanks, from the present end of track. Here engineers have been assigned to construction sections and six station gangs have made contracts for heavy rock cut work.

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TORONTO, CANADA, JULY, 1920.

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## Electrification of Railways in Great Britain.

Reports of recent annual meetings of British railway companies give information as to proposals for electrifying sections of the lines as follows:—The London & North Western Ry. appropriated £150,000 for widening its line between Chalk Farm and Willesden for electric service, and work on completing the electrification of suburban lines, postponed during the war, is in progress. The London & South Western Ry. has decided to supersede the present electrical equipment of the Waterloo and city underground line with modern equipment and to extend the length of the trains, at a cost, including additional cars, of £750,000. The Great Eastern Ry. has authorized its General Manager to prepare a scheme for the electrification of its lines. The London, Brighton & South Coast Ry., which has been operating its minor suburban trains electrically for some years, is encouraged to hope that at an early date the company may be able to electrify its lines throughout the whole of its suburban area. The Lancashire & Yorkshire Ry. directors have recommended that the line between Manchester and Oldham, and on to Shaw and Royton, be electrified. The Great Western Ry. is electrifying the Ealing & Shepherds Bush Ry. The North Eastern Ry. has under consideration proposals for the electrification of the main line between York and Newcastle, 80 miles.

## A North and South American Railway.

The often discussed proposal for a north and south American railway extending from Hudson Bay, to Patagonia is again being revived. This line would be approximately 10,000 miles long, and it is estimated the trip could be made in 10 or 12 days. The projected railway, while it has been advocated to some extent for the past 50 years, obtained the official endorsement of the International American Conference in 1902, and has again been considered by the Pan-American financial conference held in Washyears most of the South American republyears most of the South America republics have been linked up by railways, and the Peruvian Government is building additional lines so that a north and south railway on the southern half of the continent is within measurable realization. The same may be said of the railway situation in Canada, the United States and Mexico, where something like a through route will be available on the completion of the Hudson Bay Ry. by the Dominion Government. The greatest difficulty to be overcome is in Central America, where the population apparently is not deeply interested and the geological conditions to be met with are discouraging.

**Quebec & Saguenay Ry. Ownership and Operation.**—The Minister of Railways stated in the House of Commons, recently, that the government took possession of this line Mar. 4, 1919, that it is still in the contractors' hands and is being operated by them under an arrangement made Sept. 24, 1919.

## Sir William Van Horne's Estate.

The Supreme Court at Ottawa recently heard the case of the British Columbia Finance Minister vs. Royal Trust Co.., an appeal from the judgment of the British Columbia Court of Appeals affirming the judgment of the trial judge, which declared that the Finance Minister's statement determining the amount of succession duty in respect to the estate of the late Sir Wm. Van Horne payable to the Province of British Columbia proceeded upon an erroneous basis, and that the succession duty payable in respect of such estate to British Columbia is $8,523.16 and no more. The appellant's grounds of appeal were that the property of the deceased, wherever situated, should be taken into account in determining the rate of succession duty to which the property of deceased situate within British Columbia is liable and that the part of deceased's property within the province is liable to the proportionate duty that would have been payable by that portion if all the property of deceased, wherever situate, had been within the province. Judgment was reserved.

## Air Required to Operate Thermit Welding Preheaters.

The following data is the result of tests made recently by Metal & Thermit Corporation, New York, N.Y., to determine the proper amount of air required for special thermit welding gasoline and compressed air preheaters: 25 lb. per sq. in. seems to be a practical minimum for operating preheaters. At this pressure, a single burner preheater will require approximately 25 cu. ft. of free air a minute and a double burner preheater approximately 50 cu. ft. of free air a minute. For very large welds, where the walls of the molds are thick, and the preheater gates longer than usual, a pressure of 40 lb. a sq. in. would be advisable, which would require approximately 35 cu. ft. of free air a minute for a single burner preheater and 70 cu. ft. of free air a minute for a double burner preheater. In the case of a large plant, with a central air compressor plant, upon which demands are being made by many departments, the pressure mentioned above should be maintained at the outlet to which the preheaters are attached.

**Railway Employes' Voting Act, Ontario.**—The Act passed in 1918 providing for the taking of the votes of railway men, who expected to be absent from their homes on the regular election day was amended at the Ontario Legislature's recent session. The provisions of the act are made to apply to voting on bylaws, elections for boards of education, or for public school trustees where the election is held by ballot, and the act is to apply in any place where at least 25 railway employes petition the council to pass a bylaw to that effect.

**The Federated Order of Railroad Employes** has been incorporated under the Dominion Companies Act part 1, without share capital, and with office in Toronto, to promote the moral and social welfare of its members, and to further their interests in every legitimate manner; also to provide for the maintenance of permanently disabled members or their dependents by furnishing shelter or other relief. The incorporators are:—F. Morrison, Brockville, Ont.; M. Morrison, H. A. Nightingale, A. J. Stark, Toronto, and H. S. Rand, Chicago, Ill.

## Caraquet & Gulf Shore Railway Acquired by Dominion Government.

The following report of a committee of the Privy Council was approved by the Governor General on June 10:—The committee of the Privy Council have had before them a report, dated June 8, 1920, from the Minister of Railways and Canals, submitting, with reference to the order in Council of May 22, 1918, no. 1260, whereby authority was given for the purchase of various branch lines of railway in New Brunswick, upon the terms and conditions therein mentioned and for the reasons therein set out, that, in the Appropriation Act. No. 2, Statutes of Canada, 1918, chap. 52, provision was also made for the purchase of the Caraquet & Gulf Shore Ry., but that such purchase was not completed, on account of the parties not being able to agree as to the terms. That the owners of the said railway have now agreed to accept the offer made by the Minister of Railways and Canals of $200,000, and the cancellation of the amount owed by the company to the Canadian Government Rys. of $87,705.39, for the said railway, its equipment and other property, free from all liens, encumbrances and debts whatsoever. The Minister, therefore, recommends that, under the provisions of An Act to amend the Government Railway Act, and to authorize the purchase of certain railways, 5 George V, chap. 16, authority be given for the purchcase of the said railway accordingly, and that provision therefor be made in the supplementary estimates, the said railway to be taken over as of June 1, 1920, and interest to be paid on the amount aforesaid, from the said date to the date of payment, upon transfer of title satisfactory to the Department of Justice. The committee concur in the foregoing recommendation and submit the same for approval.

The Caraquet Ry. Co. was incorporated by the New Brunswick Legislature in 1882, and the railway was put in operation from Gloucester Jct., on the Intercolonial Ry., to Shippegan Harbor, N.B., 68 miles, by the contractors in Dec., 1887. It was taken over by the company for operation Jan 1, 1889. The Gulf Shore Ry. Co. was incorporated by the N.B. Legislature in 1885. Its line extends from Pokemouche Jct., on the Caraquet Ry., to Tracadie, 16.78 miles. This line was subsequently amalgamated with the Caraquet Ry., and the combined lines have been operated as the Caraquet & Gulf Shore Ry. The operations for the year ended June 30, 1918, the last figures available, were as follows:—

| | | |
|---|---|---|
| Earnings: | | |
| Passenger traffic | | $21,958.35 |
| Freight traffic | | 83,866.93 |
| Total | | $105,825.28 |
| Expenses: | | |
| Maintenance of way | $33,793.15 | |
| Maintenance of equapment | 15,581.77 | |
| Traffic expenses | 415.01 | |
| Transportation | 43,623.40 | |
| General expenses | 11,631.35 | |
| | | 105,044.68 |
| Net earnings | | $780.60 |

The Caraquet Ry. received subsidies of $224,000 from the Dominion, and $180,000 from New Brunswick, and the Gulf Shore Ry. received subsidies of $53,699.20 from the Dominion and $41,950 from New Brunswick. The capital at June 30, 1918, was reported to be $1,250,000 of stocks and $500,000 of bonds.

The Caraquet & Gulf Shore Ry. officials, as last reported to Canadian Railway and Marine World, were as follows: President, Geo. Colfins, Special Representative, Canadian National Rys., Trenton, Ont.; Secretary, C. S. Hamilton, Toronto; Treasurer, K. W. Mullins; Superintendent, F. V. Burton; and Mechanical Superintendent, N. Thibideau, Bathurst, N.B.

## Port Arthur and Fort William Government Grain Elevators.

The following questions were asked in the House of Commons recently by J. P. Molloy, M.P. for Provencher, Man.:—"Is the Government aware of the general dissatisfaction of shippers of grain from the West, with the government terminal weights at Port Arthur? If so, what measures, if any, have been taken to investigate and remedy same? If any investigations have been held by the Board of Grain Commissioners or other commission, has their report been received, and what has been, if any, their recommendation?"

Sir Geo. Foster replied as follows:—"The government is not aware of any general dissatisfaction with regard to the weights given by the terminal elevators at Fort William and Port Arthur. Individual complaints are received from time to time, which is every case are investigated. As a protection in the case of errors in weighing, the depth of grain in each car on arrival at the elevator is recorded, and the cubical contents estimated accordingly, which furnishes a basis against which the actual weight can be checked. The Board of Grain Commissioners has on file a statement from one of the largest shippers of grain from Western Canada to the head of the Lakes, that the outturns of their cars at terminal elevators at Fort William and Port Arthur are 100% satisfactory. The only thing in the nature of a general complain received by the Board of Grain Commissioners is that raised by the Order of Grain Buyers, which was fully investigated by the board in January last, and their full report on which is now in the hands of the government. While is complaint touched to some extent on the matter of weights at the head of the Lakes, it was mainly a question of shortage bonds as applied to country buyers that furnished the chief grounds for complaint."

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and Public Elevators in the East.

Prepared by the Dominion Bureau of Statistics, Internal Trade Branch.

| Week ending June 4th, 1920. | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William | | | | | | |
| C.P.R. | 42,168 | 20,375 | 19,653 | ..... | 7,444 | 89,640 |
| Empire Elevator Co. | 39,999 | 15,077 | 46,694 | 8,976 | 15,402 | 126,149 |
| Consolidated Elevator Co. | 55,154 | 29,769 | 52,237 | 36,194 | 1,361 | 174,715 |
| Ogilvie Flour Mills Co. | 529,089 | 28,116 | 13,815 | ..... | 1,529 | 573,549 |
| Western Terminal Elevator Co. | 60,597 | 15,096 | 12,118 | 14,522 | 99 | 102,412 |
| G. T. Pacific | 65,863 | 41,341 | 28,751 | 20,354 | 1,572 | 157,881 |
| Grain Growers' Grain Co. | 99,622 | 38,302 | 53,718 | ..... | 1,339 | 192,981 |
| Fort William Elevator Co. | 28,366 | 163,850 | 6,449 | 6,697 | 461 | 205,823 |
| Northwestern Elevator Co. | 143,141 | 161,173 | 33,615 | 43 | 69 | 338,041 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 473,504 | 108,759 | 106,354 | 1,946 | 7,479 | 698,042 |
| Sask. Co-op. Elevator Co. | 177,440 | 26,671 | 66,845 | 50,979 | 3,224 | 325,159 |
| Canadian Government Elevator | 73,340 | 132,540 | 41,720 | 72,181 | 4,656 | 324,437 |
| Thunder Bay | 142,762 | 202,983 | 20,437 | 14,495 | 1,292 | 381,969 |
| Davidson and Smith | 48,702 | 10,003 | 8,166 | ..... | 4,734 | 71,605 |
| Eastern-Richardson | 177,048 | 61,998 | 33,475 | 9,087 | 5,985 | 287,593 |
| Total Public Terminal Elevators | 2,156,775 | 1,057,053 | 544,047 | 235,474 | 56,646 | 4,049,995 |
| Total Private Terminal Elevators | 529,020 | 78,371 | 122,931 | 145 | ..... | 730,467 |
| Saskatoon Can. Gov't. Elevator | 1,988,908 | 56,628 | 1,829 | 1,118 | ..... | 2,048,551 |
| Moose Jaw Can. Gov't. Elevator | 1,512,984 | 38,135 | 1,962 | 5,491 | 223 | 1,558,796 |
| Calgary Can. Gov't. Elevator | 1,242,779 | 448,187 | 21,025 | 58 | 9,934 | 1,721,983 |
| Vancouver, B.C. | ..... | ..... | 5,616 | ..... | ..... | 5,616 |
| *Total Interior Terminal Elevators | 4,744,671 | 542,950 | 30,432 | 6,735 | 10,158 | 5,344,946 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 386,481 | 151,175 | 53,174 | ..... | ..... | 590,830 |
| Midland Elevator Co. | 986,868 | 14,301 | 123,706 | ..... | 39,437 | 1,164,312 |
| Tiffin, G.T.P. | 81,299 | 30,770 | ..... | ..... | ..... | 112,069 |
| Port McNicoll | 997,305 | 6,232 | 173,670 | ..... | ..... | 1,177,207 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 484,883 | 290,362 | 81,509 | ..... | ..... | 856,754 |
| West Can. Flour Mills Co., Ltd. | 245,171 | ..... | ..... | ..... | ..... | 245,171 |
| Toronto Campbell Flour Mills Co. | 108,533 | 7,647 | 4,393 | ..... | ..... | 120,573 |
| Kingston— | | | | | | |
| Commercial Elevator Co. | ..... | 1,714 | ..... | ..... | ..... | 1,714 |
| *Maple Leaf Milling Co., Ltd. | 739,613 | ..... | ..... | ..... | ..... | 739,613 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 2,018,303 | 348,753 | 723,401 | ..... | 20,329 | 3,110,786 |
| Montreal Warehousing Co. | 1,250,903 | 6,786 | 38,638 | ..... | ..... | 1,296,327 |
| Ogilvie Flour Mills Co. | 77,295 | 231 | 35 | ..... | ..... | 77,561 |
| Quebec Harbor Commissioners | ..... | 28,684 | ..... | ..... | ..... | 28,684 |
| West St. John, N.B., C.P.R. | 59,148 | ..... | 26,306 | ..... | ..... | 85,454 |
| St. John, N.B., Can. Nat. Rys. | 9,191 | ..... | 34,940 | ..... | ..... | 44,131 |
| Halifax, N.S., Can. Nat. Rys. | | | | | | |
| Baltimore, U.S.A. | | | | | | |
| Total Public Elevators | 7,444,993 | 886,655 | 1,259,772 | ..... | 59,766 | 9,651,186 |
| *Total Country Elevators | 4,574,375 | 2,617,847 | 948,745 | 278,040 | ..... | 8,419,007 |
| U.S. Atlantic Seaboard ports— | | | | | | |
| *Portland, Me. | 10,330 | 7,209 | 19,788 | ..... | 128,836 | 166,163 |
| Baltimore, Md. | ..... | ..... | ..... | ..... | 4,317 | 4,317 |
| Total U.S. Atlantic Seaboard Ports | 10,330 | 7,209 | 19,788 | ..... | 133,153 | 179,480 |
| Total Quantity in Store | 19,460,164 | 5,190,085 | 2,925,715 | 520,394 | 259,723 | 28,356,081 |

*Quantity for each individual interior terminal elevator not received.

*Week ending May 27th, 1920.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 296. May 15.—Approving regulations for transportation by express of acids, inflammables, oxidizing substances, etc.

General order 297. May 21.—Authorizing Great North Western Telegraph Co., C.P.R., Grand Trunk Pacific Telegraph Co. and Western Union Telegraph Co. to file with Board, for consideration, tentative schedules in accordance with direction contained in judgment of Assistant Chief Commissioner May 6.

General order 298. June 2.—Approving forms of Live Stock Contract and Special Contract with Attendants in charge of Stock, marked Schedule A and Schedule B respectively; and that form of Special Contract with Attendants in Charge of Stock (Schedule B), be printed on back of Live Stock Contract form (Schedule A); that on and after July 1, the forms herein approved shall be the only contracts for carriage of live stock to be used by all railway companies.

General order 299. June 5.—Approving schedules submitted by Great North Western Telegraph Co., C.P.R. Telegraph Co., Grand Trunk Pacific Telegraph Co., and Western Union Telegraph Co., and amended as a result of the checking and scaling by Board's Traffic Department.

29,639. May 15.—Apportioning cost of diverting Bowen Road, across Toronto, Hamilton & Buffalo Ry., between Lots 8 and 9, Concessions 3, 4 and 5, from Niagara River, in Welland County, Ont.

29,640. May 15.—Approving location of proposed express building by G.T.R. at Stuart St. station, Hamilton, Ont.

29,641. May 14.—Authorizing Saskatchewan Government to make highway crossing over Grand Trunk Pacific Ry. Moose Jaw Northwesterly Branch, in n.w. ¼ Sec. 1, Tp. 20, Range 2, west 3rd meridian.

29,642. May 18.—Rescinding order 29,478, Mar. 18, which authorized London & Port Stanley Ry. to erect station at east end of base line road, Westminster Psychophathic Hospital, London, Ont.

29,643. May 14.—Authorizing C.P.R. to rebuild bridge 112.6, Chalk River Subdivision, Ont.

29,644. May 18.—Approving location of C.P.R. crossing on line between Secs. 4 and 9, Tp. 15, Range 19, west 4th meridian, Alta.

29,645. May 17.—Authorizing Canadian National Rys. to rebuild bridge over St. Esprit River, Montcalm County, Que.

29,646. May 17.—Authorizing Canadian National Rys. to make highway diversion and overhead crossing at mile 31.3, Vernon-Kelowna Branch, B.C.

29,647. May 17.—Authorizing Canadian National Rys. to rebuild bridge over Jordan River, Terrebonne County, Que.

29,648. May 14.—Authorizing C.P.R. to rebuild bridge 30.8, Shaunavon Subdivision, Sask.

29,649. May 12.—Authorizing Canadian National Rys. to erect a platform and an open shelter, and stop its suburban trains at intersection of Monkland Boulevard, about half a mile south of Lazard, Que.

29,650. May 19.—Dismissing application of Ford City, Ont., for order directing G.T.R. to provide suitable highway crossing over its track at Albert Road.

29,651. May 20.—Amending order 29,582, Apr. 27, re overhead bridges at Hastings, Pender and Keefer Sts., Vancouver, B.C., over Vancouver, Victoria & Eastern Ry.

29,652. May 18.—Authorizing C.P.R. to build spur for Imperial Oil Ltd., Estevan, Sask.

29,653. May 19.—Authorizing town of Capreol, Ont., to make highway crossing over Canadian National Rys. at Yonge St.

29,654. May 18.—Authorizing Ste. Agathe des Monts Municipality to construct a highway crossing over C.P.R. at mile 43.80, Laurentian Subdivision.

29,655. May 18.—Authorizing Sherbrooke Ry. & Power Co. to build tracks across C.P.R. at Alexander St., Sherbrooke, Que.

29,656. May 18.—Authorizing G.T.R. to build spur for F. Rogers & Co., Toronto.

29,657. May 20.—Rescinding order 5,646, Nov. 3, 1908, authorizing G.T.R. to build spurs in Tay Tp., Ont.

29,658. May 21.—Dismissing Winnipeg Board of Trade's complaint against alleged discrimination in cost of cable tolls as between Manitoba points and Great Britain, as compared with rates prevailing between western boundary of Ontario and Canso, N.S.

29,659. May 21.—Approving Canadian National Rys. application for approval of its Standard Mileage Freight Tariff C.R.C. no. E-115 to apply between stations on railway south of the St. Lawrence River, including also Montreal and Quebec.

29,660. May 21.—Amending order 28,202, Mar. 31, 1919, approving C.P.R. plan, showing proposed location of new station at Metiskow, Alta., with detail plans of building to be built in lieu of the class A-2, by changing class A-2 to class A-3.

29,661. May 21.—Authorizing Canadian National Rys. to enter upon lands of J. B. Mercier, Quebec, Que., to remove trees which obstruct view of Quinn's crossing, St. Malo, Que.

29,662. May 21.—Authorizing Canadian National Rys. to rebuild bridge over L'Assomption River, St. Charles Borromee Parish, Joliette County, Que.

29,663. May 21.—Authorizing G.T.R. to rebuild overhead bridge at mile 281.03, District 2, Montreal Division, 0.94 mile east of St. Bruno station, Que.

29,664. May 21.—Approving London & Port Stanley Ry. plan of signal protection for gauntlet tracks on Mill Creek bridge, St. Thomas, Ont.

29,665. May 20.—Authorizing C.P.R. to build spur for Imperial Oil, Ltd., Shaunavon, Sask.

29,666. May 21.—Relieving C.P.R. from providing further protection at crossing of Carleton Ave., 1½ miles west of Ottawa, Ont.

29,667. May 21.—Extending to July 1, time within which Canadian National Rys. may install automatic bell at crossing of main road leading to Red River, St. Jean Baptiste, Que. See also order 29,684.

29,668. May 20.—Authorizing Saskatchewan Government, on behalf of Swift Current rural municipality 137, to make highway crossing over C.P.R., between Secs. 23 and 26, Tp. 15, Range 15, west 3rd meridian, and to divert highway in s.e. ¼ Sec. 26.

29,669. May 22.—Approving C.P.R. relocation of station building at Cassils, Alta.

29,670. May 21.—Authorizing Canadian National Rys. to build spur for Imperial Oil Ltd., Drumheller, Alta., to be completed within three months from date.

29,671. May 15.—Dismissing application of City of Montreal for order directing G.T.R. to operate six passenger trains and one freight train between Cote St. Paul and Bonaventure station.

29,672. May 26.—Ordering G.T.R. to erect station at Bechard, Sask.

29,673. May 26.—Ordering Canadian National Rys. to build two one-car stock pens at Ste. Rose du Lac, Man.

29,674. May 27.—Authorizing C.P.R. to rebuild bridge 26.6, Timiskaming Subdivision, Algoma District, Ont.

29,675. May 27.—Approving G.T.R. plan of express building to be built for Canadian Express Co. at Chatham, Ont.

29,676. May 27.—Authorizing Kettle Valley Ry. to build spur on Lot 340, Yale Division, B.C.

29,677. May 27.—Authorizing C.P.R. to build two spurs for Jenckes Canadian Co., Grantham Tp., Que.

29,678. May 27.—Ordering Canadian National Rys. to build 2-carload stock yard and platform at Steep Rock, Man.

29,679. May 28.—Authorizing C.P.R. to build spur for Dominion Metal Exporting Co., Winnipeg.

29,680. May 28.—Authorizing C.P.R. Co., as lessee of St. Lawrence & Ottawa Ry., to build spur for W. Freedman, Ottawa, Ont.

29,681. May 27.—Authorizing C.P.R. to build passing track extension across road allowance north of north boundary of n.e. ¼ Sec. 32, Tp. 24, Range 10, Canmore, Alta.

29,682. May 26.—Authorizing C.P.R. to rebuild bridge 1.17, over west branch of Winnipeg river, on Keewatin Subdivision.

29,683. May 29.—Apportioning cost of building and maintaining interchange track between C.P.R. and G.T.R. in Guelph, Ont., 70% to be paid by G.T.R. and 30% by C.P.R.

29,684. May 29.—Amending order 29,667, May 21, by substituting Manitoba for Quebec, after St. Jean Baptiste.

29,685. June 2.—Authorizing Canadian Northern Ontario Ry. to connect with G.T.R. at Pembroke, Ont., and to cross Park Lane, concession road between Lot 13 and block P and the River Road.

29,686. June 2.—Ordering that G.T.R. crossing of Cherry St., Toronto, be protected in so far as southbound movement is concerned, by watchmen between 6 a.m. and 10 p.m., the cost to be paid 65% by G.T.R. and 35% by the city.

29,687, 29,688. June 2.—Approving C.P.R. plans showing details of alterations to abutments and replacement of existing 20 ft. girder span by 22 ft. 4 in. reinforced concrete span, bridge 73.6 over Gould's Creek, Chalk River Subdivision, Que., and of 29 ft. girder by 28 ft. 4 in concrete span of bridge 6.88, on its North Bay Subdivision, Algoma District, Ont.

29,689. June 2.—Authorizing C.P.R. to build spur for Dominion Brass & Iron Bedstead Co., Outremont, Que.

29,690. June 1.—Ordering C.P.R. to have postal car 40, in use on Dominion Atlantic Ry., rebuilt in accordance with Board's Mail Car Specifications, or, in the alternative, withdrawn from service and replaced by suitable car.

29,691. June 2.—Approving C.P.R. plans B-2-305, May 3, and B-1-1604-2, Mar. 19, showing details of alterations to abutments and replacement of 24 ft. girder by 22 ft. 4 in. reinforced concrete span, at mile 37.98 Thessalon Subdivision, Algoma District, Ont.

29,692. June 1.—Authorizing G.T.R. to build spur for Canadian Steel Foundries, Point St. Charles, Montreal.

29,693. June 1.—Relieving G.T.R. from providing further protection at Stamford crossing, west of Clifton Jct., Ont.

29,694. May 31.—Approving Pere Marquette Rd. plans showing track circuit locking to be installed and detector bars to be eliminated at interlocking plant at Blenheim, Ont.

29,695. June 2.—Authorizing C.P.R. Co. to build three spurs for Cowan Co., Toronto.

29,696. June 1.—Authorizing Elk Valley Lumber Co. to connect with Crows Nest Southern Ry. at Fernie, B.C.

29,697. June 2.—Approving agreement, May 6, between Bell Telephone Co. and Mississippi Telephone Co., Lanark County, Ont.

29,698. June 4.—Authorizing C.P.R. to rebuild bridge 111. over Black River, Heron Bay Subdivision, Algoma District, Ont.

29,699. June 2.—Authorizing British Columbia Government to make highway crossing over Esquimalt & Nanaimo Ry. at mile 63.15, Vancouver Island, B.C.

29,700, 29,701. June 2.—Approving Bell Telephone Co. agreements, May 12, with Fraser Telephone Co., Oxford County, Ont., and May 14, with South Diagonal Telephone Co., Grey County, Ont., and rescinding order 25,941, Mar. 16, 1917, approving previous agreement with latter company.

29,702. June 2.—Relieving C.P.R. from providing further protection at crossing of highway 3 miles east of Yamachiche, Que.

29,703. June 4.—Authorizing C.P.R. to build spur for Hodge Coal Co., Moose Jaw, Sask.

29,704. June 4.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to build bridge over Grand View cut at Clarke Drive and Eighth Ave., Vancouver, B.C.

29,705. June 4.—Authorizing Canadian National Rys. to cross and divert highway in n.e. ¼ Sec. 22, Tp. 53, Range 22, west 3rd meridian, Sask.

29,706. June 4.—Authorizing C.P.R. to divert road allowance on south boundary of s.e. ¼ Sec. 23, Tp. 19, Range 1, west 2nd meridian, and to carry same at grade across its tracks at mile 79.84 Neudorf Subdivision, and to close diverted portion.

29,707. June 7.—Authorizing C.P.R. to build connection with West Canadian Collieries spur in s.e. ¼ Sec. 3, Tp. 8, Range 4, west 5th meridian.

29,708. June 2.—Approving agreement, May 14, between Bell Telephone Co. and Falkirk Telephone Co., Middlesex County, Ont., and rescinding orders 6,138 and 25,826 approving agreements between same companies, Aug. 22, 1907, and Jan. 9, 1917, respectively.

29,709. June 7.—Authorizing C.P.R. to divert road allowance on south boundary of s.w. ¼ Sec. 20, Tp. 12, Range 21, west 1st meridian, and to carry same across tracks at mile 20.4, Lenore Subdivision.

29,710. Ordering G.T.R. to remove trees on northwest corner of crossing of Kingston Road near West Hill, Ont.

29,711. June 8.—Authorizing G.T.R. to extend spur for Dominion Canners, St. Catharines, Ont.

29,712. June 8.—Authorizing G.T.R. to build two extensions to spurs for Goodyear Tire & Rubber Co. of Canada, New Toronto, Ont.

29,713. June 8.—Authorizing City of Montreal to alter subway on St. Denis St., under C.P.R.

29,714 to 29,716. June 8.—Authorizing Canadian Northern Quebec Ry. plans, profiles and books of reference of proposed revisions of line at East Yamachiche, mile 94.82 to 96.43 from Quebec, St. Boniface parish; at St. Paulin, St. Lawrence Subdivision, mile 100.60, St. Paulin, St. Severe and St. Barnabe parishes, and near Ste. Ursule, mile 110.15 to 114.89, through St. Justin and Ste. Ursule parishes, Maskinonge county, Que.

29,717. June 9.—Authorizing British Columbia Electric Ry. to cross Vancouver & Lulu Island Ry. at Twelfth Ave., Vancouver.

29,718. June 8.—Authorizing G.T.R. to take up one of the sidings authorized for Expanded Metal & Roofing Co., Toronto by order 5,682, Nov. 17, 1908.

29,719 to 29,722. June 8.—Approving Bell Telephone Co. agreements, Mar. 29, with St. Paul de Chester Telephone Co., for interchange of messages, and rescinding order 22,864, Nov. 12. 1914; May 18, with Riverside Telephone Co.; May 18, with Brant Telephone Co., and May 13, with Admaston Rural Telephone Association, and rescinding order 26,120, May 11.

29,723. June 8.—Approving Canadian Northern Quebec Ry. plan of proposed revision of line near St. Boniface, mile 87.6 to 91.60 from Quebec through St. Boniface and St. Flore parishes, Que.

29,724. June 8.—Approving plans and specifications of Maidstone Tp., Ont., showing work to be done on Pike Creek drain crossing.

29,725. June 8.—Authorizing G.T.R. to build spur at Cainsville. Ont.

29,726. June 8.—Approving G.T.R. plan of new station at Clandeboye, Ont.

29,727. June 8.—Authorizing C.P.R. to cross Place d'Armes St., Kingston, Ont., at grade.

29,728. June 9.—Authorizing C.P.R. to build spur for Hydro Electric Power Commission of Ontario, at Peterborough, Ont.

29,729. May 29.—Approving C.P.R. route map, showing revised general location of its Langdon

North Branch from Sec. 36, Tp. 24, Range 15, mile 10, to Sec. 5, Tp. 24, Range 2, west 4th meridian, mile 215, Alta.

29,730. June 10.—Authorizing C.P.R. to build its Neebing ballast pit spur, at grade, across road allowance between Lots 20 and 21, Con. 3, Neebing Tp., Ont., at mile 5.83 Kaministikwia Subdivision.

29,731. June 10.—Authorizing Canadian National Rys. to build bridge over Rosebud River at mile 319.2, Calgary Subdivision in Sec. 28, Tp. 28, Range 19, west 4th meridian, Alta.

29,732. June 9.—Approving change in location of C.P.R. station at Bowell, Alta.

29,733, 29,734.—June 10.—Approving Bell Telephone Co. agreements, May 31, with Port Hope Telephone Co., Durham County, Ont.; and May 28, Dunsford Telephone, Light & Power Co-operative Association, Victoria County, Ont., and rescinding order 25,055, June 12, 1916.

29,735. June 10.—Authorizing Quebec, Montreal & Southern Ry. to build two additional sidings in Sorel, Que.

29,736. June 10.—Approving Canadian Northern Saskatchewan Ry. revised location in the west half of Sec. 36, Tp. 12, Range 8, west 2nd meridian.

29,737. June 10.—Ordering C.P.R. to stop on flag, trains 23 and 24, and on Sundays in lieu of these trains to stop trains 33 and 34, at Norwood, Ont.

29,738. June 12.—Approving agreement, May 28, between Bell Telephone Co. and Point Mara Telephone Co., Ontario County, Ont.

29,739. June 12.—Authorizing Essex Terminal Ry. to build siding across MacDougall St., Windsor, Ont.

29,740. June 11.—Approving C.P.R. plans, Mar. 1, showing details of superstructure and three reinforced concrete girders to be erected at bridge 61.48 over Aumond Creek, North Bay Subdivision, Algoma District, Ont.

29,741. June 11.—Relieving C.P.R. from providing further protection at highway crossing near Yamachiche station, Que.

29,742. June 11.—Authorizing C.P.R. to divert road allowance on north boundary of Sec. 10, Tp. 2, Range 25, west 3rd meridian, across its tracks at mile 19, Moose Jaw Southwesterly Branch (Assiniboia to Consul) and to close diverted portion within its right of way.

29,743. June 12.—Authorizing Essex Terminal Ry. Co. to build siding for Piggott Lumber Co., Windsor, Ont.

29,744. June 9.—Authorizing C.P.R. to build sidings and alterations to sidings for Quaker Oats Co., Peterborough, Ont.

29,745. June 11.—Approving agreement, May 29, between Bell Telephone Co. and Uptergrove Telephone Co., Ontario County, Ont.

29,746. June 11.—Ordering G.T.R. to install wigwag signal at crossing of Parkdale Ave., Ottawa.

29,747. June 11.—Approving Canadian National Rys. standard plan showing clearances at overhead unloading apparatus for tank cars, suction pipe to be swung around clear of the track when not in use, and employes to be kept off tops and sides of cars when passing under structure.

29,748. June 15.—Approving G.T.R. bylaw, May 21, authorizing Vice President, Passenger Traffic Manager or General Passenger Agent to prepare and issue tariffs of passengertolls, and rescinding orders 13,449 and 21,718, Apr. 18, 1911, and Apr. 30, 1914, respectively.

29,749. June 15.—Approving agreement, June 2, between Bell Telephone Co. and Dingwall Telephone Co., Oxford County, Ont.

29,750. June 15.—Approving C.P.R. route map showing revision of Cutknife to Whitford Lake Branch from Sec. 35, Tp. 44, Range 25, west 3rd meridian, mile 24, to Sec. 11, Tp. 56, Range 15, west 4th meridian, mile 180.5.

29,751. June 15.—Authorizing Michigan Central Rd. to connect with the Essex County track on Lot 23, Con. 4, Gosfield Tp., Ont.

29,752. June 15.—Amending order 29,052, Nov. 20, 1919, re Pere Marquette Rd., crossing bell at Middlemarch, Ont., by rescinding paragraph 2.

29,753. June 11.—Authorizing Ottawa Electric Ry. to build power distribution line over C.P.R. on Clifton Road, Westboro, Ont.

29,754. June 15.—Approving proposed extension to Grand Trunk Pacific Ry. station at Stony Plain, Alta.

29,755. June 15.—Authorizing Canadian Northern Quebec Ry. to build spur for Jos. Dufresne at mile 175.40, Montreal.

29,756. June 15.—Authorizing Esquimalt & Nanaimo Ry. to build bridge 3.75 over Stamp River, on its Great Central Lake Branch, B.C.

29,757. June 15.—Authorizing C.P.R. to build spur for Ford Motor Co. of Canada, Ltd., Calgary, Alta.

29,758. June 16.—Approving C.P.R. plan of revised location of portion of its Lanigan Northeasterly Branch from Sec. 23, Tp. 33, Range 22, at mile 0 to Sec. 11, Tp. 40, Range 18, west 2nd meridian, at mile 50.55, and rescinding order 29,158, Dec. 12, 1919.

29,759. June 16.—Ordering Ottawa & New York Ry. (N.Y.C.R.) to build station at Northfield, Ont., including waiting room and freight shed combined; and to appoint caretaker to see that station is kept clean, heated, ventilated and lighted for accommodation of passengers.

29,760. June 15.—Ordering Toronto, Hamilton & Buffalo Ry. to provide protection at crossing of Wellington St. South, Hamilton, Ont., between 7.3 a.m. and 11.30 p.m. daily.

29,761. June 16.—Ordering Dominion Atlantic Ry. to have postal car 40 rebuilt in accordance with Board's mail car specifications, or withdrawn from service and replaced by suitable car; D.A.R. to be liable to penalty of $25 a day for every day it is in default in complying with this order; and rescinding order 29,690, June 1.

29,762. June 16.—Authorizing Canadian National Rys. to build spur for Sanitary Buildings, Ltd., Regina, Sask.

29,763. June 17.—Extending to July 31, 1921, time within which Canadian Northern Ontario Ry. may install interlocking plant at junction with C.P.R. at mile 18.4, Kingston Subdivision, near Harrowsmith station, Ont.

29,764. June 18.—Relieving C.P.R. from providing further protection at highway crossing at Putnam, Ont.

29,765. June 18.—Authorizing Canadian Northern Ry. to build across highway at mile 45, Kamloops-Vernon line, Okanagan Branch, B.C.

29,766. June 18.—Authorizing Canadian National Rys. to connect Canadian Northern Ry. with National Transcontinental Ry. near St. Prosper, Que.

29,767. June 18.—Ordering Canadian National Rys. to appoint station agent at Valparaiso, Sask., by July 15, and to build suitable station there.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Canadian Niagara Bridge Co.—A meeting of shareholders to effect organization, elect directors, etc., was held at Hamilton, Ont., on June 7, and the following officers were elected subsequently:—President, E. W. Beatty, K.C., President C.P.R., Montreal; Vice President, A. H. Smith, President New York Central Rd., New York; Secretary, E. F. Stephenson, Secretary New York Central Rd., New York; Assistant Secretary and General Solicitor, E. D. Cahill, General Solicitor, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont.; General Treasurer, M. S. Barger, New York; Assistant General Treasurers, H. G. Snelling and Edgar Freeman, New York; Treasurer, Ernest Alexander, Secretary, C.P.R., Montreal; Auditor, John Leslie, Comptroller C.P.R., Montreal; Chief Engineer, R. L. Latham, Chief Engineer, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont.

The company was incorporated by the Dominion Parliament in 1918, with Lord Shaughnessy, J. N. Beckley, E. D. Cahill and W. P. Torrance as provisional directors, to build a bridge across the Niagara River, the Canadian end to be located between Chippawa and Fort Erie, Ont., and six miles of lines to connect the bridge with existing railways. In 1919 the act was amended to enable the company to build 12 miles of line, instead of six, to connect with existing lines from Welland to Bridgeburg.

Great Northern Ry.—We are officially advised that there is no truth in a recent press report that the company has filed plans for dock and wharfage improvements on Semiahmoo Bay, White Rock, B.C., in connection with its B.C. lines. (June, pg. 297.)

Hudson Bay Railway.—A special committee of the Senate, appointed to take evidence, and report, upon the navigability and fishery resources of Hudson Bay and Strait, and of the character of the ports on the bay, with regard to their fitness as a railway terminus, has reported that sufficient care was not taken in the selection of Nelson as the railway terminus and that the government should not make further important expenditures upon that port without first making a new and thorough examination into the relative merits of Churchill and Nelson as a terminus. To utilize Churchill would necessitate the building of 80 miles of railway, across a country about the character of which there is considerable divergence of opinion. The committee's report is given very fully in the Marine Department of this issue, under "Senate committee report on the Hudson Bay route and ports."

Kettle Valley Ry.—A press report states that it is expected to have about 13 miles of the branch from Princeton to the Copper Mountain district opened for traffic at an early date.

Mount McKay & Kakabeka Falls Ry. Co.—The Ontario Legislature has passed an act providing that this railway may be operated by steam for a further period of two years, except on Neebing Ave., north of Montreal St., Fort William, Ont., and extending the time for the completion of the unconstructed sections of the line to Squaw Bay until 1922. (April, pg. 176.)

Northern Light Ry.—A press report states that the first car load of steel rails for the construction of the 36 in. gauge light railway from Elk Lake to Gowganda, Ont., has been delivered at Elk Lake. The report also states that surveys on the projected line are being proceeded with.

A meeting of shareholders of this newly incorporated company has been called to be held in Toronto, July 5, to receive and adopt the provisional directors' report and accounts; to elect directors; to let contracts for the construction of a light railway, and to authorize the directors to issue bonds for $10,000 a mile on the whole undertaking, or on any branch or part contracted to be built. A press report of June 12 stated that $300,000 of 7% first mortgage bonds were being offered by the company as part of the financing necessary for the construction of the projected light railway from Elk Lake to the Gowganda mining camp, about 30 miles.

Pacific Great Eastern Ry.—The Premier of British Columbia on his return from a trip of inspection over the line recently is reported to have said that the foundation work for the viaduct at Deep Creek was completed, that the steel work was expected to be completed in July, that track laying would then be resumed, and that it was expected to have rails laid into Quesnel some time in September. The site for the station building and terminal yards in Quesnel was selected during the Premier's visit. (June, pg. 297.)

Springfield Ry. Co.—The Nova Scotia Legislature has passed an act amending the company's charter. The Davison Tramway Co. was incorporated by the Nova Scotia Legislature at its 1903-4 session to build a railway to be operated by electricity, steam or any other motive power, near Alpena, and from near Cherrifield, on the Halifax & Southwestern Ry., and from any point on the Caledonia branch of that railway to points on the Davison Lumber Co.'s lands. The name of the company was changed in the following year to the Springfield Ry. Co. Construction of a line from Hastings Jct., one mile from Springfield, on the Halifax & Southwestern Ry., was begun in 1905, and about 9 miles of line were reported in operation in Nov., 1906. Subsequent additions were made, and it is reported that the company is operating 30

miles of standard gauge track, carrying mail to Crossburn, N.S., 10 miles, and lumber and general freight traffic over all its lines. The company's head office is at Crossburn.

**Timiskaming & Northern Ontario Ry.** The Ontario Legislature has authorized the construction of an extension of this railway from its present terminus at Cochrane, Ont., to James Bay, with 20 mile branches and spurs as may be necessary. The location of the extension and branches is to be subject to the government's approval, and the cost of construction is to be paid out of such sums as may be appropriated therefor by the legislature from time to time. (June, pg. 298.)

# Canadian National Railways Construction, Betterments, Etc.

**Halifax Ocean Terminals.**—A recent Halifax, N.S., press report states that the only permanent work in progress at the new ocean terminals there is the train shed, which is nearing completion.

**Fairview Locomotive Terminal.**—Tenders are under consideration for grading at the locomotive terminal at Fairview, near Halifax, N.S.

**Sydney Mines Freight Shed.**—Tenders are under consideration for the erection of a freight shed at Sydney Mines, N.S. We are officially advised that it will be 180 x 40 ft. and be of wooden construction. It will replace a similar structure destroyed by fire recently.

**New Glasgow Station.**—We are officially advised that the work in hand at New Glasgow, N.S., consists of the erection of an extension 79 ft. 8 in. long and the remodelling of the existing building to give modern facilities for handling passenger and baggage business.

**St. John Train Shed Damaged.** — A large section of the roof of the train shed at St. John, N.B., collapsed on June 15, and it is said that 15,000 square ft. of the roof fell on the platforms and tracks. The roof was condemned some time ago, and work has been in progress taking down the entire station. A start had been made June 14, on taking down the trusses supporting the roof, and it is believed that the jar from the operation of trains out of the station, brought about the collapse. The St. John City Council was reported to have been advised in May that appropriations had been made for $1,000,000 towards the erection of a new station, and additions to the yards.

**McGivney Jct.-Fredericton Division.**—We are officially advised that R. B. Stewart's tender for improvements on the line between McGivney Jct. and Fredericton, N.B., for about $186,000 is to be accepted.

**Moncton Yards.**—Tenders are under consideration for grading for a yard for Moncton, N.B.

**St. Lawrence Subdivision Revisions.**—Tenders were invited recently for clearing, fencing, grading, and building trestles, culverts, and bridge substructures on the following deviations of main line on the St. Lawrence Subdivision, Canadian Northern Quebec Ry.: Burrel deviation, between mile 87 and 92, between Glenada and St. Boniface; East Yamachiche deviation, between mile 94.5 and 96.5, between St. Boniface and Charette; St. Paulin deviation, between mile 100 and 106, between Charette and St. Paulin; St. Ursule deviation, between mile 109 and 116, between Fremont and St. Justin.

The St. Lawrence Subdivision extends from Joliette to Quebec, and is made up in part of the Great Northern Ry. of Canada, a line acquired by Canadian Northern Ry. interests, and in part by the Quebec, New Brunswick & Nova Scotia Ry., which was built by the same interests, and leaves the former line at Garneau Jct., just east of the St. Maurice River and 80 miles from Quebec. The Great Northern was built under rather stringent financial conditions, and in days when 1% grades were considered quite good enough, especially as its connections at either end were built to that standard and worse, but for some 30 miles out of Joliette it runs over the Montreal plain, and it was difficult to get 1% grades even if one tried. The Quebec, New Brunswick & Nova Scotia, on the other hand, was built to the same standard as the National Transcontinental Ry., which it parallels for some distance, so that on the whole subdivision of some 140 miles there are only about 30 miles on which the 6/10% standard was seriously exceeded, where the old line brushed up against the foothills of the Laurentides, and about one half of this was compatible with modern standards.

The location staff had made more or less of a study of this section for many years back, but capital was scarce and traffic none too heavy, and until recently it did not seem worth while to call attention to it, but the recent boom in paper and pulp products, and the growth of Northern Quebec generally has caused quite a change of conditions. Heavier locomotives and cars became the rule, and it happened, as it very often does, that the worst sections in point of grades and curvature were also those which required considerable bridges and viaducts. The bridges were built about 1900, and were not equal to the heavier loading of the present day, rebuilding became necessary, and it turned out that the bridges could be built on the revised locations just as cheaply, and in one instance much more cheaply than on the existing location. The intervening grading was a comparatively unimportant matter. The result is a reduction of the grades over the subdivision from 1% to 6/10%, and a corresponding increase in train load of 80%, at a cost (excluding bridges) of some $250,000, while the capitalized value of the increased trainload is estimated at from $4,000,000 to $6,000,000 with present traffic, and the traffic shows every sign of increasing even faster in the future than in the past..

From the west the diversions are: 1, the St. Ursule, 4.75 miles, which entails a viaduct 700 ft. long and 150 ft. high; 2, the St. Paulin, or Riviere-du-Loup, 3 miles, and including a viaduct over the Riviere-du-Loup 1,000 ft. long and 140 ft. high; 3, the East Yamachiche, only 1½ miles long, but involving a viaduct 550 ft. long and 100 ft. high; 4, the Burrill, some 4 miles long. This extends over two ravines, one of which is to be filled in solid, and the other is crossed by a steel trestle 450 ft. long and 80 ft. high. The intervening grading is comparatively unimportant, although there is some rock on both the first and last sections. Aside from the reduction of grades, the distance has been shortened somewhat, and the curvature flattened from 8° to 5°, and much reduced in total amount. These revisions when completed will furnish the C.N.R. with a first class line from Montreal to the St. Maurice, and from Garneau to Quebec, the only break in the standard being across the valley of the St. Maurice River, some 7 or 8 miles.

**Levis Station.**—The repairs and improvements at Levis, Que., station, upon which the Minister of Railways advised the House of Commons in Oct., 1919, the government proposed to expend $125,000, have been completed and the renovated building was expected to be opened for public use June 27. A party of C.N.R. officials made an inspection of the building June 5. The renovated station is provided with three entrances, viz., from Laurier Ave., from Commercial St., and the third facing the platform. The ground floor contains a general waiting room, 75 x 40 ft.; a ladies' waiting room, 28 ft. square; smoking room, 30 x 40 ft.; Canadian Express Co.'s office; ticket office, lavatories, etc., for passengers, and conductors' rest room. The upper floors will contain division officials offices.

**Charney to Quebec Bridge.**—Tenders were received to June 25 for grading and track laying for direct connection between Charney, 8 miles west of Levis, Que., and the Quebec bridge.

**Western Lines Betterments.**—Tenders are under consideration for the following betterments, etc., on Western lines:—For excavation and laying of cast iron pipe lines at Maymont, Humboldt, Dana, Alsask, and Margo, Sask.; for fencing (labor only) on 24 track miles on the Swan River subdivision; for construction of stream diversions at miles 333.1 and 335.6, Calgary Subdivision, Alta., and for grading and culverts, on line diversion between miles 333.2 and 335.1 Calgary Subdivision, Alta.

**Western Line Extensions.**—The House of Commons on June 10 passed an act authorizing the Canadian Northern Ry. Co. to build and operate the following lines of railway:—From Prince Albert, Sask., to Tp. 57, Range 25, west 2nd meridian; from the company's main line between the crossing of the North Saskatchewan River and Radisson, generally northerly and westerly to Meeting Lake; and from the Maryfield branch in Ranges 23 to 26, west of the 2nd Meridian, generally southerly and westerly to Tps. 2 or 3, on the 3rd Meridian.

We are officially advised that the invitation for tenders for the construction of a 16 mile extension of the Maryfield branch, in the direction of Bengough, Sask, was withdrawn, on account of a deputation requesting another route to be investigated. The management acceded to the request and the route suggested is being investigated.

**Lampman Mines Branch.**—We are officially advised that the work to be done on the Peebles-Lampman, Sask., Branch for this current year will include the completion of the 20 miles south from Peebles which was started in 1919.

**Turtleford Extension.**—We are officially advised that it is proposed to complete the grading on the Turtleford extension, Sask., to mile 83 this year, but it is not expected that any rails will be laid on the extension this year. We are also advised that a contract for grading on this extension has been let to the Western Construction Co., North Battleford, Sask.

# Railway Rolling Stock Orders and Deliveries.

Imperial Oil Ltd. has ordered 300 tank cars from Canadian Car & Foundry Co.

The G.T.R. is reported to be in the market for 12 eight-wheel switching locomotives.

The C.P.R. has ordered 15 vans from its Angus shops, Montreal, and between May 19 and June 13, received 2 Santa Fe locomotives from its Angus shops, and 2 vans from its Winnipeg shops.

U.S. Bureau of Foreign and Domestic Commerce figures shows that 5 locomotives valued at $41,900, 91 freight and miscellaneous cars valued at $91,531, and car parts valued at $41,512 were exported to Canada during April.

Canadian National Rys. have received 20 mail cars and 7 first class passenger cars, ordered in 1919, from Canadian Car & Foundry Co., and 6 medium Pacific locomotives from Montreal Locomotive Works, ordered this year.

The Interstate Commerce Commission has announced the immediate appropriation of $125,000,000, out of the $300,000,000 revolving fund provided in the Transportation Act, for the purchase of rolling stock for U.S. railways.

Canadian Car & Foundry Co., between May 15 and June 12, delivered 15 first class passenger cars to Canadian National Rys., 336 repaired box cars to Grand Trunk Pacific Ry., 63 tank cars to Imperial Oil Ltd., and 85 dryer cars to Citadel Brick & Paving Block Co. The G.T.P.R. cars were delivered from the Fort William shops and the others from Montreal.

Canadian Railway and Marine World for June gave particulars of the amounts voted by the Ontario Legislature in the supplementary estimates for the year ending Oct. 31, 1920, for the Timiskaming & Northern Ontario Ry., including $225,000 for additional locomotives. The main estimates for the year ending Oct. 31, 1921, passed subsequently, contained $450,000 for new locomotives and equipment, as capital expenditure.

The Kipawa Co., Ltd., has ordered a 4-wheel switching locomotive from Montreal Locomotive Works. Following are the chief details:—

| | |
|---|---|
| Weight in working order | 79,000 lb. |
| Wheel base | 7 ft. |
| Cylinders, diar. and stroke | 14 x 22 in. |
| Cylinder spread | 80 in. |
| Driving wheels, diar. | 40 in. |
| Driving wheels, material | Cast iron |
| Driving journals | 7 x 8 in. |
| Boiler, type | Straight top |
| Boiler inside diar first ring | 45 in. |
| Boiler pressure | 190 lb. |
| Firebox, length and width | 46⅛ x 50¼ in. |
| Tubes, no. and diar. | 111 2 in. |
| Tubes, length | 11 ft. 8 in. |
| Heating surface, tubes | 674 sq. ft. |
| Heating surface, firebox | 60 sq. ft. |
| Heating surface, total | 734 sq. ft. |
| Grate area | 16.2 sq. ft. |
| Tractive power | 17,400 |
| Factor of adhesion | 4.5 |
| Reverse gear | Hand type |
| Cab | Steel plate |
| Tank, type | Saddle |
| Capacity, water | 1,700 U.S. gal. |
| Capacity, coal | 1,600 lb. |

The Timiskaming & Northern Ontario Ry. has ordered 2 eight-wheel switching locomotives from Montreal Locomotive Works. Following are the chief details:

| | |
|---|---|
| Weight in working order | 202,000 lb. |
| Wheel base | 14 ft. 6 in. |
| Cylinder, diar. and stroke | 23 x 28 in. |
| Cylinder spread | 88 in. |
| Driving wheels, diar. | 53 in. |
| Driving wheels, material | Cast steel |
| Driving journals | Main 9½ x 12 in., others 9 x 12 in. |
| Frames, width | 4½ in. |
| Boiler, type | Extended wagon top radial stayed |
| Boiler, inside diar, first ring | 69⅝ in. |
| Boiler pressure | 180 lb. |
| Firebox, length and width | 89½ x 75¼ in. |
| Tubes, no. and diar. | 202 2 in.; 32 5⅜ in. |
| Tubes, length | 14 ft. 6 in. |
| Heating surface, tubes | 1,533 sq. ft. |
| Heating surface, flues | 653 sq. ft. |
| Heating surface, firebox | 153 sq. ft. |
| Heating surface, f. b. tubes | 25 sq. ft. |
| Heating surface, total | 2,364 sq. ft. |
| Superheating surface | 570 sq. ft. |
| Grate area | 46.26 sq. ft. |
| Tractive power | 42,760 |
| Factor of adhesion | 4.72 |
| Superheater | Schmidt |
| Reverse gear | Ragonnet |
| Cab | Steel plate vestibule type |
| Tender frame | Commonwealth cast steel |
| Tender wheels, diar. | 33 in. |
| Tender truck, type | Cast steel side frame |
| Tender journals | 5½ x 10 in. |
| Tank, type | Water bottom |
| Capacity, water | 5,700 imp. gal. |
| Capacity, coal | 10 tons |

The Roumanian Government has ordered 25 consolidation (2-8-0) locomotives from Montreal Locomotive Works. Following are the chief details:—

| | |
|---|---|
| Weight on drivers | 158,000 lb. |
| Weight on truck | 16,000 lb. |
| Weight, total | 174,000 lb. |
| Wheel base, driving | 15 ft. 6 in. |
| Wheel base, engine | 23 ft. 8 in. |
| Wheel base, engine and tender | 57 ft. 4½ in. |
| Cylinders, diar. and stroke | 21 x 28 in. |
| Cylinder spread | 78½ in. |
| Driving wheels, diar. | 56 in. |
| Driving wheels, material | Cast steel |
| Driving journals | 9½ x 10 in. |
| Frames, width | 4 in. |
| Engine truck wheels | 33 in. |
| Engine truck journals | 5 x 10 in. |
| Boiler, type | Straight top |
| Boiler, inside diar. first ring | 70 in. |
| Boiler pressure | 13½ kg. per sq. c/m. |
| Firebox, length and width | 122¾ x 377⅛ in. |
| Tubes, no. and diar. | 165 2 in.; 26 5⅜ in. |
| Tubes, length | 13 ft. 9 in. |
| Heating surface, tubes | 1,181 sq. ft. |
| Heating surface, flues | 500 sq. ft. |
| Heating surface, firebox | 181 sq. ft. |
| Heating surface, total | 1,862 sq. ft. |
| Superheating surface | 420 sq. ft. |
| Grate area | 32.3 sq. ft. |
| Tractive power | 35.600 |
| Factor of adhesion | 4.15 |
| Superheater | Schmidt |
| Reverse gear | Screw type |
| Cab | Steel plate |
| Tender frame | Steel channels |
| Tender wheels, diar. | 33 in. |
| Tender truck, type | Arch bar |
| Tender journals | 5½ x 10 in. |
| Tank, type | Water bottom |
| Capacity, water | 4,630 imp. gal. |
| Capacity, fuel | 4 metric tons |
| Capacity, oil | 1,320 imp. gal. |

C.P.R. Special Farming Train. — The C.P.R., in connection with the Saskatchewan Agriculture and Education Departments, and Saskatchewan University College, provided a special train of 13 lecture and demonstration cars to travel over the Saskatchewan lines and give instruction on the raising of live stock, field husbandry, poultry raising, farm mechanics, household science and instruction for boys and girls. The first stopping place was Macklin, on May 31, and the trip was timed to end at Yorkton, June 19. The schedule provided that two centers were to be visited each day, the period of instruction being four hours—from 9 a.m. to 1 p.m., and from 2.30 to 6.30 p.m.

C.P.R. Boys Club, Montreal.—Alfred Price, General Manager, Eastern Lines, C.P.R., and President of the club, occupied the chair at the annual meeting in Montreal, May 31. The report showed the various branches of work carried on and the prize list showed the standing obtained by the boys in their studies in railway accounting, railway auditing, elementary shorthand, and advanced shorthand. Physical exercise is not neglected, the C.P.R. providing tickets for members for physical instruction at the Y. M. C. A. The prizes were presented by A. D. MacTier, Vice President, Eastern Lines, C.P.R.

## Grand Trunk Railway Construction, Betterments, Etc.

Arthabaska, Que. — Senator Lavergne called the attention of the Senate recently to the necessity of building a G.T.R. branch line from Victoriaville to Arthabaska, Que., 3 miles, and asked whether it was the government's intention, now that the G.T.R. is being taken over by the Dominion, to build such a line. He stated that Victoriaville is on the G.T.R. main line, and that Arthabaska is the chief town of a district with a population of 100,000. Arthabaska is the seat of all government and other public buildings, and is also an industrial center, and its only present outlet is at Victoriaville. Sir James Lougheed in reply stated that the G.T.R. had not come absolutely under government control; it was being administered by representatives of the company and the government. He had no doubt that in due course every consideration would be given to the suggestion.

Ottawa Cross Town Tracks.—A petition is being signed asking the Dominion Government to take steps to discontinue all through traffic across Ottawa and to remove all cross town tracks with the exception of a switching track for serving existing industries, such track to be used only at certain hours, and to be removed at some future date.

London Grade Separation Proposals.—Several meetings are reported to have taken place between a special committee of the London, Ont., City Council and G.T.R. representatives to discuss the elimination of level crossings in the city. The Board of Railway Commissioners has had officials in London investigating the situation and a report has been received on the necessity of increased protection at the crossings. The city council is in favor of eliminating the crossings altogether and of so saving the cost of keeping watchmen, and G.T.R. officials are reported to have expressed a willingness to meet the city on the matter. A press report states that the company's Chief Engineer will visit London shortly to prepare plans for subways at Waterloo and Rectory streets as the beginning of the work. It is estimated that these subways will cost about $200,000 each. (June, pg. 292.)

## Reported Sale of Edmonton, Dunvegan & British Columbia Railway.

A recent press report stated that control of the E., D. & B. C. Ry. and of its subsidiary, the Central Canada Ry., had been secured by eastern persons closely associated with the C.P.R., and that pending a definite settlement of the matter, a report on the condition of the two railways was being prepared by W. A. James, Assistant Chief Engineer, C.P.R., Winnipeg. An Edmonton, Alta., press report of June 3 stated that J. D. McArthur, President E., D. & B. C. Ry., had said it would be about three weeks or so thereafter before any announcement as to the contemplated change in the ownership of the line and its subsidiaries could be made.

The Premier and the Attorney General of Alberta, together with J. D. McArthur, and the solicitor for the Union Bank, which is interested in the transaction, were reported to be in Montreal, June 12, in connection with the proposed sale of the line.

## Freight and Passenger Traffic Notes.

The Canadian National Rys. and the C.P.R. put into effect summer tourist rates to Pacific coast points on June 1.

The number of cars which passed over the Quebec Bridge for the seven days ended June 8 was as follows:—

| | 1920. | 1919. |
|---|---|---|
| Bridge Station to Chaudiere Jct..... | 441 | 326 |
| Chaudiere Jct. to Bridge Station..... | 358 | 172 |
| Total . . ..... | 799 | 498 |

The U.S. Interstate Commerce Commission was reported on June 8 to have approved of the C.P.R.'s application for permission to file a schedule containing reduced rates on shipments of paper and paper articles from points in Canada to New York City.

The Grand Trunk Pacific Ry. has announced a second summer tour over its lines. The party is limited to 200 persons, and will start from Grand Forks, North Dakota, July 6, and will travel from Winnipeg in a special excursion train to Prince Rupert, B.C., which will be reached in nine days, stopovers being made at several points. From Prince Rupert the party will travel by G.T.P.R. steamship via the inner channel to Seattle, Wash., with stopovers at Vancouver and Victoria, B.C. Members of the party have the option of returning to the starting point by a number of routes, and may complete the trip any time up to Oct. 31.

The Canadian National Rys. is reported to have put in operation on June 1 a gasoline motor car on the line between Winnipeg and Transcona, Man. The car accommodates 75 passengers, and makes the 6-mile trip in 10 minutes. It makes seven trips from Winnipeg to Transcona, and eight trips from Transcona to Winnipeg every week day, and two trips each way on Sundays. On week days additional trips are run to accommodate the employes of the Canadian National Rys. Transcona shops. More than 1,000 persons are reported to have used the car on the first day it was operated. It has sufficient power to haul a trailer, which will be provided as soon as traffic warrants.

The Quebec & Saguenay Ry. continues to be operated by the contractors, Hugh Doheny & Co., for the Canadian National Rys. On June 1 the contractors put in operation the following train service:—A train daily except Sundays, leaving Quebec (Quebec Ry., Light & Power station) at 2.45 p.m., reaching Murray Bay at 6.45 p.m., and a train leaving Murray Bay at 7.45 a.m., reaching Quebec at 11.45 a.m. On June 26 and on each succeeding Saturday to Sept. 11, a train will leave Quebec at 7.30 a.m., reaching Murray Bay at 11.30 a.m. The return train will leave Murray Bay at 5.15 p.m. on Sunday, June 27, and each succeeding Sunday to Sept. 12, reaching Quebec at 9.15 p.m.

Justice Lafontaine gave judgment in the Superior Court at Montreal June 8 in an action brought by Hodgson, Sumner & Co. against the C.P.R. for $931.55 for loss of merchandise. The goods were delivered to a carter driving a wagon bearing the C.P.R. sign, and were signed for on one of the company's bills of lading, but never reached their destination. The judge held that according to the custom established by the C.P.R. Co. for receiving goods and signing a bill of lading for their transportation to places indicated, the person accredited to receive them was not any particular individual, but whatever person might be in charge of the vehicle on which appeared the printed initials "C.P.R." In view of article 1730 of the Civil Code to the effect that the mandator is liable to third parties who, in good faith, contract with a person not his mandatory, under the belief that he is so, when the mandator has given reasonable cause for such belief, the court ordered the C.P.R. to pay the full amount claimed by plaintiffs, with interest from the date the action was taken, and costs.

## Canadian Pacific Railway Construction, Betterments, Etc.

**St. John, N.B., Bridge.**—A press report states that excavation for the main piers for the new bridge at the reversible falls of the St. John River has been started, that the caissons to be used for the foundation work are being built in Montreal, that different sections will be put together at St. John and that it is expected the work for the supports of the western approach to the bridge will be started during the summer.

**St. John-Montreal Gradients.**—A press report states that the company has an engineer in the field studying the gradients on the line between St. John, N.B., and Montreal, to determine the possibility of reducing them.

**Timiskaming to Lac La Quinze.** — Hon. L. A. Taschereau, Attorney General for Quebec, is reported to have said recently that arrangements had been completed regarding the construction by the C.P.R. of the projected line from Timiskaming to the Quinze River Falls, Que., and that he had been given to understand by the C.P.R. officials, whom he had seen at Montreal, that construction work would be carried out promptly.

**Ottawa Suburban Station.**—A press report states that the company proposes to build a station near Parkdale Ave., Ottawa.

**Saskatchewan Beach Station.**—A station building is reported to have been built at Saskatchewan Beach, Sask. Hitherto passengers for this summer resort have had to use Silton station.

**Western Branch Lines.**—The Senate railway committee on June 2 approved without amendment the company's bill authorizing construction of certain branch lines in the prairie provinces, details of which were given in Canadian Railway and Marine World for June, pg. 292. The bill was read a third time, and was assented to June 16. (June, pg. 291.)

**A St. Malo Shops Mare's Nest.**—As a sample of how time is wasted in the House of Commons, the ridiculous questions asked, and the difficulties of carrying on the management of a government railway under such circumstances, the following may be quoted: C. A. Gauvreau, M.P. for Temiscouata, Que., asked recently, "Is it true that two first class machines, which were in good working order at the Riviere-du-Loup shops, were scrapped after their transfer to the St. Malo shops?" The Minister of Railways answered "No." The answering of this question probably involved, first a letter from a House of Commons officer to the Railways Department transmitting it, then a letter from the Railways Department to the Canadian National Rys. management, enquiry by the management of the St. Malo shops Superintendent, a reply from him, and its transmission from the management to the Railways Department.

## Traffic Orders by Board of Railway Commissioners.

**Contracts for Live Stock Transportation.**

General order 298. June 2.—Re consideration of special form of contract for transportation of live stock, to be used by railway companies: Upon hearing the matter at Ottawa, Feb. 10, 1920, the Canadian Manufacturers' Association, Western Live Stock Shippers' Association, Winnipeg Live Stock Exchange, Calgary Live Stock Exchange, Cattlemen's Protective Association of Western Canada, Express Traffic Association, Toronto Humane Society, Western Canada Live Stock Union, Canadian Council of Agriculture, United Farmers of Ontario, United Farmers' Co-operative Company, Eastern Canada Live Stock Union, Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen, Swift Canadian Co., Grand Trunk and Canadian Pacific and Canadian National Railways, and Michigan Central Rd. being represented, it is ordered as follows:—

1. That the forms of Live Stock Contract and the Special Contract with Attendants in Charge of Stock, attached hereto marked Schedule A and Schedule B respectively, be approved.

2. That the form of Special Contract with Attendants in Charge of Stock (Schedule B) be printed on the back of the Live Stock Contract form (Schedule A).

3. That on and after July 1, 1920, the forms herein approved shall be the only contracts for the carriage of live stock to be used by all the railway companies subject to the legislative authority of the Parliament of Canada.

We are unable to give sufficient space to publish the schedules A and B.

## Railway Finance, Meetings, Etc.

**The Canada & Gulf Terminal Ry.**—The company received tenders recently for the purchase of $1,400,000 of 5% twenty-year first mortgage gold debentures secured by a trust deed in favor of the Royal Trust Co., and dated Mar. 31, 1920.

**New Brunswick Ry.** — At a special meeting of shareholders at St. John, N. B., June 1, a resolution is reported to have been passed authorizing the directors to sell or dispose of all or any part of the company's extensive landed properties in the Upper St. John River district. The company's railway forms part of the C.P.R. system, and the company for years past has been dealing with its land grants only.

**Thousand Islands Ry.**—There has been deposited with the Secretary of State at Ottawa two instruments dated Aug. 2, 1905, and April 21, 1920, appointing J. P. Ashworth, and F. Scott, respectively, as trustees under a mortgage dated Feb. 28, 1894, from the Thousand Islands Ry. Co. to John Bell, to secure payment of $50,000 of 6% first mortgage bonds.

**Toronto, Hamilton & Buffalo Ry.**—At the annual meeting at Hamilton, Ont., June 2, the following were elected directors:—Lord Shaughnessy, E. W. Beatty, K.C., Grant Hall, A. H. Smith, A. H. Harris, W. E. Scott, H. B. Ledyard, W. P. Torrance, W. K. Vanderbilt, Jr., D. W. Saunders and J. N. Beckley.

**Fighting Grasshoppers.** — The C.P.R. has had poison spread along its right of way in the prairie provinces to kill grasshoppers in the infected areas.

# Transportation Appointments Throughout Canada.

**The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.**

Canadian Government Merchant Marine, Ltd.—G. E. BUNTING, heretofore Ontario Freight Agent, who has been in Australasia for several months, in C.G.M.M. interests, has been appointed representative for Australia and New Zealand. Office, Auckland, New Zealand.

Capt. L. M. HATFIELD, formerly master of various steamships owned and managed by William Thomson & Co., St. John, N.B., and latterly master of various steamships owned by the British Government, has been appointed Assistant Marine Superintendent. Office, Montreal.

H. M. MILBURNE, heretofore Marine Superintendent, Montreal, has been appointed Assistant to Manager. Office, Montreal.

Capt. E. E. TEDFORD, formerly master and Marine Superintendent, Strath Steamship Co., Cardiff, Wales, and latterly superintending the building of steamships for the British Government, to be managed by that company, has been appointed Marine Superintendent, C. G. M. M., vice H. M. Milburne, appointed Assistant to Manager. Office, Montreal.

Canadian National Rys.—L. BROUSSEAU has been appointed District Engineer, Levis, Edmundston & St. Maurice Divisions, Quebec District, vice J. C. Beckwith, transferred. Office, Quebec, Que.

J. G. HOLMAN has been appointed agent for the summer, at Lake Joseph, Ont.

J. KIRKPATRICK has been appointed agent for the summer, at Bala Park, Ont.

O. I. VIRTUE has been appointed Inspector, Sleeping, Dining and Parlor Cars, Toronto, vice E. L. Clarke, resigned on account of ill health.

Canadian Pacific Ry.—W. B. BAMFORD, heretofore District Freight Agent, Toronto, has been appointed District Freight Agent, Nelson, B.C., vice F. W. Sterling, transferred.

H. G. BUCHANAN, heretofore District Freight Agent, Edmonton, Alta., has been appointed District Freight Agent, London, Ont., vice C. S. Morse, transferred.

R. V. CARLETON, heretofore Locomotive Foreman, Toronto, has been appointed Locomotive Foreman, Trenton, Ont., vice D. L. Jones, transferred.

W. R. JEFFREY, heretofore tax and assessment clerk, has been appointed Assistant Tax Agent, Montreal.

D. L. JONES, heretofore Locomotive Foreman, Trenton, Ont., has been appointed Locomotive Foreman, Windsor, Ont., vice T. Milne, retired on pension.

C. P. McGHEE has been appointed District Freight Agent, Los Angeles, Cal.

C. S. MORSE, heretofore District Freight Agent, London, Ont., has been appointed District Freight Agent, Toronto, vice W. B. Bamford, transferred.

F. W. STERLING, heretofore District Freight Agent, Nelson, B.C., has been appointed District Freight Agent, Edmonton, Alta., vice H. G. Buchanan, transferred.

W. TANSLEY, heretofore Car Service Agent, St. John, N.B., has been appointed Car Service Agent, Toronto, vice H. C. Taylor, promoted.

H. C. TAYLOR, heretofore Car Service Agent, Toronto, has been appointed Superintendent of Car Service, Eastern Lines, vice R. A. Sewell, transferred. Office, Montreal.

J. H. WILSON, heretofore Night Locomotive Foreman, Brownville Jct., Me., has been appointed Locomotive Foreman, Toronto, vice R. V. Carleton, transferred.

Central Vermont Ry.—E. F. SMITH has been appointed Assistant to President. Office, St. Albans, Vt.

Grand Trunk Ry.—The position of Assistant to Vice President in Charge of Transportation, held by C. R. MOORE, with office at the company's general offices, whose appointment as General Superintendent of Car Service was announced in our last issue, has been taken by C. MANNING, heretofore Assistant to Vice President, with office at Point St. Charles shops, and the last mentioned position has been abolished.

R. S. MOORE, recently in Canadian National Rys. service, has been appointed chief clerk to General Agent, G.T.R., Toronto.

Grand Trunk Pacific Ry. — A. D. CAREY, heretofore Assistant Superintendent, Smithers, B.C., has been appointed Superintendent, Edson, Alta., vice R. M. Halpenny, resigned to enter private business.

Great Northern Ry. — J. M. COPELAND, recently in G.T.R. service, has been appointed Travelling Agent G.N.R., Toronto.

H. E. WATKINS has been appointed General Agent, in charge of Canadian territory east of Port Arthur and Fort William, Ont., including the Maritime Provinces, but no Windsor, Walkerville and Ford, Ont. Office, 53 Yonge St., Toronto.

Union Pacific Rd.—F. S. ELLIOTT has been appointed General Agent, Vancouver, B.C., vice J. H. Cunningham, resigned to enter private business.

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C.P.R. Taxation.—T. W. Caldwell, M.P. for Victoria and Carleton, N.B., asked in the House of Commons recently:—"What amount was paid by the C.P.R. Co. in Business Profits Tax in 1916, 1917, 1918 and 1919?" The Finance Minister replied: "Accounting period ended June 30, 1915, none ;accounting period ended June 30, 1916, none, this was due to tax paid to United Kingdom; accounting period ended Dec. 31, 1916, $588,600.20; accounting period ended Dec. 31, 1917, none; income tax paid for 1917 period, $1,765,475.13; accounting period ended Dec. 31, 1918, none; amount paid for 1918 period under Income War Tax Act, 1917, and order in council Mar. 14, 1918, $1,463,097.24; accounting period ended Dec. 31, 1919, returns for 1919 period not filed. The Business Profits War Tax Act, 1916, provides the returns may be filed on or before July 1, 1920. Total tax paid by C.P.R. for accounting periods 1915 to 1918, inclusive, $3,817,172.57."

Railway Lands Patented.—Letters patent were issued during May respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta, and British Columbia as follows:—

| | Acres. |
|---|---|
| Canadian Northern Ry. | 240.00 |
| Canadian Pacific Ry. grants | 27.64 |
| Canadian Pacific Ry. roadbed and station grounds | 9.91 |
| Grand Trunk Pacific Ry. | 428.33 |
| Grand Trunk Pacific Ry. Branch Lines Co. . . | 29.41 |
| | 735.29 |

## Telegraph, Telephone and Cable Matters.

B. A. Boate, heretofore local manager, Great North Western Telegraph Co., Brandon, Man., has been appointed local manager at Regina, Sask., vice R. F. Errington, transferred.

L. Black, for several years in Western Union Telegraph Co.'s service at Sydney, N.S., has been appointed local manager there, vice J. B. Colbourne, resigned to enter C.P.R. telegraph service at Calgary, Alta.

The C.P.R. Telegraphs have nominated F. H. Phippen, K.C., as their representative on a board of conciliation to consider operator's wages. J. T. Gunn, Secretary Electrical Workers Union, represents the men.

J. B. Colbourne, who has resigned as local manager, Western Union Telegraph Co., Sydney, N.S., to enter C.P.R. telegraph service at Calgary, Alta., was presented with a gold chain and an address by the Sydney staff on leaving for the west recently.

H. Wittmaak, who died at Kitchener, Ont., June 3, aged 60, was formerly in C.P.R. Telegraphs service, and was said to have been the first of that company's telegraph operators in Hespeler, Ont. He was agent there when he retired from active service about two years ago.

The Great North Western Telegraph Co. has opened offices at Authier and Kiskisink Club House, Que., Moonbeam, Ragged Rapids, Port MacDiarmid and Sparrow Lake, Ont., and has closed its offices at Oscalanea, Que., Battersea and Thamesford, Ont., and Kylemore, Sask.

A London, Eng., press dispatch states that the Pacific cable connecting Canada with Australasia is to be duplicated between Bamfield, B.C., and Norfolk Island at a cost of approximately £4,000,000. The Pacific cable was completed in 1902, and the distance between Bamfield and Norfolk Island is approximately 6,000 miles, and there are two intermediate stations, one at Fanning Island and the other at Fiji. The cable between Bamfield and Fanning Island is said to be the longest laid in one piece.

The British Postmaster General has sent notices to the various chambers of commerce and boards of trade in Great Britain calling attention to the fact that a state owned cable is in operation between Great Britain and Canada, and to the government's desire that this cable, which is known as the Imperial cable, should be used mainly, if not exclusively, for traffic between Great Britain and the British Dominions. It is operated direct from the Central Telegraph Office in London, to Halifax, N.S., where connection is made with the Canadian land lines, as well as with the British cable to the West Indies. Traffic for Australasian points is sent by a special line direct from Halifax to Bamfield, B.C., and thence by the state owned Pacific cable to Australia and New Zealand, there being only one retransmission, viz., at Halifax.

## Among the Express Companies.

The Canadian National Ex. Co. has closed its office at Prince Albert, Sask.

M. Cunningham, formerly with the Canadian National Ex. Co., is reported to have been appointed agent Canadian Ex. Co., at Stewart, B.C.

J. I. M. Grant, heretofore cashier, Canadian Ex. Co., St. Catharines, Ont., has been appointed agent at Brantford, Ont., vice G. A. Oliver, resigned.

# Electric Railway Department

## Oshawa Railway Fifty-ton Electric Locomotive.

The Oshawa Ry., Oshawa, Ont., has added a 50-ton 400 horse power, steel, electric locomotive, which it has had built by Ottawa Car Manufacturing Co. The following are the principal dimensions:—

| | |
|---|---|
| Length over end sills | 32 ft. |
| Length of cab | 16 ft. |
| Distance between bolter centers | 18 ft. |
| Width over cab | 10 ft. |
| Height, top of rail to top of roof | 12 ft. |
| Height top of rail to center of draw bar | 34½ ft. |

The underframe is of steel construction, built as one unit. There are 6 longitudinal sills consisting of four 12 in. I beams and two 12 in. channels, with cross sill of 9 in. I beams and corner angle 6 x 6 x ½ in. Bumpers, or end sills, are built up with a 12 in. channel, fastened to ends of longitudinal sills by 6 x 6 x ½ in. angles, with another 12 in. channel shaped to meet the requirements of the M.C.B. coupler height, after which a ¾ in. steel plate is sheared to meet the required shape, and securely rivetted together. Bolsters are of box girder type constructed with two 12 in. channels and 1½ x 15 in. steel plate on the bottom side, rivetted to flanges of the 12 in. channels. A ½ in. rolled steel floor plate extends the full length of the locomotive and the full width of cab. This construction forms a strong girder of the box type.

Oshawa Railway, Fifty-Ton, All Steel Electric Locomotive.

The cab, or body, is of steel construction, consisting of angle irons for ends and Z bars intermediates, 6 in all, bent to form the sides and roof in one continuous piece, to which 3/16 in. sheet steel plates are rivetted, forming window and door openings. The roof is of steeple type, having 3 windows in each side and 2 on ends, with door at each diagonal corner. Two windows on each side are drop, and the third, which is at the control corner of the cab, is of a sliding type, with hinged arm rest, to enable the locomotive men to look out with ease when shunting. A storm sash is placed on the end window opposite the locomotive man. An 18 in. globe ventilator is placed at the center of roof, to take away any heat generated by the resistors. All sash and doors are of white ash, with ⅞ in. white ash t. and g. sheeting on the interior. A frame is built of angle iron, surrounded with movable expanded metal screens, for the purpose of mounting the control equipment, which is located in the center of the cab. The resistors, which are installed in the top half, near the roof, are surrounded by 4 sheet metal doors, with ends of permanent sheet steel panels rivetted to frame. The floors are of wood, with air space of 1½ in. between the 1½ steel plate and bottom side of floor boards, which are 1½ in. thick, t. and g., covered over with steel checker plate. The hoods or sloping ends are of 3/16 in. steel plates rivetted to angle irons. Doors are placed on end to permit installing new carbons and oiling air compressors. Also on side of hoods there is a double door, to permit installation of equipment, and the same are constructed to prevent undue heating of the electrical apparatus, which they contain, including the fan motor. There is also a door into the cab, so as to give the locomotive man easy access from inside of cab without going outside. These side doors are arranged to keep out water and give abundance of ventilation. An upholstered seat, with arm rest, is provided at each operator's position.

Pilot and switchman's steps are provided at each end. The pilot is constructed of angle iron base, with 1½ in. iron pipe for uprights, conforming to shape to meet the requirements of the locomotive end and coupler. A 1¼ in. pipe rail is located on each end, to ensure safety, with an 18 in. opening at center, to give access to switchmen and train men, also train line jumpers. This railing is 3 ft. high with center rail, one end secured to hoods, and the opposite end forms a grab handle on the side, where angle iron steps are provided, with another grab handle fastened to cab corner post, providing access to inside of cab. A hand brake is provided with a 15 in. drop handle. Marker lamps and sockets of standard railway type are provided with flags. Sand boxes are located in each hood and designed to carry a quarter ton of sand, with 2 O.B. type air sanders in each box. The corner wheels have an independent discharge pipe of 1¼ in., which is attached to the truck connected with rubber hose to each air sander. A standard air operated locomotive bell is provided at one end, mounted on hoods. This bell is also hand operated by a cable running through a ½ in. pipe and pulleys, which makes a very easy hand ringing apparatus. The headlights, which are located on each hood, are of the Golden Glow type 12 in., 94 watts, 115 volts, plain resistance, with mirror reflector. Trolley retrievers are of the O. B. type on each end, mounted on hoods. The couplers have been designed specially to meet the requirements of the underframe and trucks. A very heavy bumper pocket casting, rivetted to center I beams, contains the Westinghouse friction draft gear. This arrangement eliminates any buffing shocks, which the locomotive would get if provided with the solid coupler head, therefore, is an important factor when one takes into consideration the Westinghouse h.l. control, which is installed inside the cab, giving longer life and better service, also eliminating unnecessary adjustments, which would occure without the use of the Westinghouse friction draft gear. Coupler heads are the M.C.B. standard. Poling sockets are provided at each corner, complying with the M.C.B. standard design. Air signal is installed, to meet future requirements for passenger service.

The trucks are the Baldwin-Westinghouse standard electric locomotive truck, with rigid bolster, equalized type, designed especially for locomotive service, and built with rolled steel side frames located outside of wheels. The cast steel transom and rolled steel end frames are fitted together with reamed taper bolts. This construction is especially adapted to heavy traction and buffing strains met in locomotive service. Wheels are rolled steel, 36 in. diameter with 4 in. tread, 1⅛ in. flange. Axles are forged steel, to meet requirements of A.E.R.A. standard in diameter and bearing area; 6½ in. diameter at bearing and 7 in. at gear. Journal boxes are of semi-steel of the Symington type journals, 5 x 9 in. The brake rigging is actuated through a radial brake beam, and through a brake beam located adjacent to truck transom. This permits the locomotive to negotiate short radius curves.

The electrical equipment comprises the Westinghouse type h.l. unit switch control, double end, arranged for field control of motors, including forced ventilation to motors and train line receptacles. The type of motor is 562-D-5 of 100 h.p., 600 volts, making a total of 400 h.p. per locomotive. The gears are Nuttall helical. A smooth drive, which is free from

vibration, exists on helical gear equipped locomotives.

Air brakes are the Westinghouse Traction Brake Co.'s make, 14-E.L., arranged for double end operation, including two compressors, type D-3-E.G., also governor synchronizing system, which ensures uniform compressor labor. Without this, the life of a compressor overloaded is considerably shortened, and the running and maintenance expense must be correspondingly high. Through the operation of this system, the two compressors must start and stop simultaneously. A clarion type of whistle is installed over end corner window, operated by air.

Marker lamp brackets are installed on each corner for holding signal flags. The locomotive is equipped with 2 marker lamps, and 2 classification lamps, including 4 green and 2 red flags.

The heater equipment consists of 2 sets of 4 heaters per set, Consolidated Heater Co. make, including 2-knife switch and fuse.

The painting is a dead black, varnished. with lettering in gold leaf, which is a very suitable color for this type of locomotive.

Reliability was the most important factor considered in designing this locomotive, also five essential features were considered: (1) The weight, type, capacity and mechanical design should be suitable for the service requirements; (2) the motive power apparatus; (3) the apparatus on the locomotive should be mounted in such a way that each part would be permitted to operate to the best advantage, with the chance of trouble reduced to a minimum; (4) all apparatus should be accessible for inspection, maintenance and overhauling; (5) there should be no danger of the operator being thrown in contact with the live parts. Centralization of control equipment is very important and one arrangement of this is shown. This has a number of advantages: (1) All control apparatus is assembled compactly in one part of the locomotive and the switch groups are located in such a manner that they are readily accessible from all sides; (2) location of grid resistors above switch groups, which are placed under the roof, reducing the length of connection between these two pieces of apparatus to a minimum. All the heat from resistors passes directly through the roof ventilators. The distributing valve is located inside the cab, as a protection against freezing. Fan motor and blower are located inside hoods, also one compressor installed in each hood, which eliminates considerable objectionable noises, which are caused when these two pieces are in motion.

Oshawa Railway Electric Locomotive Cab Interior, showing installation of equipment, with screens removed.

## Electric Railway Projects, Construction, Betterments, Etc.

Calgary Municipal Ry.—R. A. Brown, Superintendent, has reported that extensive reconstruction of double track lines will have to be done at the rate of from five to seven blocks a year, at a cost of about $11,000 a block, or $12,500 a block if heavier rail is used; and reconstruction of line on unpaved streets at the rate of six blocks a year at a cost of $6,000 a block. The estimated total cost of this reconstruction is about $91,000 a year for the next five years. He proposes that $60,000 a a year be taken from depreciation fund and that the balance be made up from revenue. June, pg. 316.)

Hydro Electric Ry. (Essex Division). We are officially advised that a second track is being built on London St., Windsor, Ont., from Ouelette St. to Wellington St.; and that the car shop on London St. is being rebuilt. The new work will provide a new repair pit, an armature room, a blacksmith shop and a machine shop. (See Sandwich, Windsor & Amherstburg Ry., June, pg. 316.)

New Brunswick Power Co.—We are officially advised that the project for the extension of the company's line from Fairville to Manchester, N.B., has been cancelled for this year.

We are further advised that the company is installing loops on all its lines in St. John, with a view to operating single end cars. Proposals in regard to this are before the city council for the following:—Branch off at corner of Charlotte St. and north King Square; a line up Union St. from Mill St. to Charlotte St., 1,500 ft. At West St. John it is proposed to connect through tracks at the head of Rodney wharf. An extension of 3,000 ft. of track is also being arranged for in East St. John to accommodate the Symons Parish, the new harbor dry dock, etc., and the county hospital. The materials for these extensions are on hand. T. H. McCauley is General Manager.

Porcupine Rand Belt Electric Ry. Co.—The Ontario Legislature has revived the charter of incorporation granted this company in 1912, together with an extension of time until 1922 to begin construction and until 1923 for the completion of the projected line. The railway authorized to be built is from Larder City townsite westerly through McVittie, Hearst, Gauthier, McElroy, Label and Boston Tps., to Dane townsite. (Nov., 1916, pg. 460.)

Quebec Ry., Light & Power Co.—The extension of the electric railway tracks in Belvedere Ward is under consideration by Quebec City Council. A delegation waited on the council requesting that the company be asked to extend its service on St. Cyrille St.,by St. Marguerite Bourgeois to Bells Road, so as to reach the St. Malo section of the line, and suggested the consideration of another extension along the cliff, by Boulevard de l'Entente and the city limits. Another extension asked for is a line to Belmont cemetery. (June, pg. 346.)

Winnipeg Electric Ry. is, according to report, planning an extension of its Academy Road line to Lindsay St., at an estimated cost of $20,000.

We are officially advised that the company is building a substation to house two motor generator sets.

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The Guelph Radial Ry., owned by the city, will be taken over for operation by the Hydro Electric Power Commission of Ontaio July 1.

# Increases in Electric Railway Passenger Fares.

**Brandon Municipal Ry.**—A Brandon, Man., press report of June 11 stated that the Manitoba Public Utilities Commission had approved an increased schedule of fares for Brandon Municipal Ry., effective June 21., as follows:—Cash, 7c.; ordinary tickets, 6 for 35c.; workmen's tickets, 5 for 25c.; children's tickets, 8 for 25c.

**Brantford Municipal Ry.**—A new schedule of fares is reported to have been put in operation June 10 in order to meet the increase of wages granted to the employes. The sale of tickets at 6 for 25c. has been abandoned and the fare is now a straight 5c. one.

**Calgary Municipal Ry.**—R. A. Brown, Superintendent, is reported to have recommended that an increased schedule of fares be put in operation. Following is a comparison of the present and suggested rates:—

| | Present. | Suggested. |
|---|---|---|
| Cash . . | 5c. | 10c. |
| Tickets for $1 | 22 | 18 |
| Tickets for 25c. | 5 | 4 |

The reason for suggesting the 10c. fare is to encourage the purchase of tickets. The city commissioners are reported to have approved of the suggested schedule on June 11, and to have recommended the city council to authorize it.

**Levis County Ry.**—The Quebec Public Service Commission met May 25 to consider an application to authorize charging increased fares on this railway. Representatives of St. Joseph and Romuald municipalities refused to agree to the application or to abide by any decision made, and asked that the company be ordered to operate a service according to its franchise terms. The service through the two municipalities named, to Lauzon, had been suspended from May 20, the company's employes having refused to operate the cars over the boundary line, on account of the action of the St. Joseph and Romuald municipalities in refusing to join in the application for increased fares. The Commission, after investigating the company's finances and operations, together with the cause of the strike, reserved judgment, so far as the City of Levis and Bienville municipality were concerned, but ordered the company to operate its cars in the Town of Lauzon. The company was unable to obey this order, as the employes refused to operate cars in Lauzon, and they further intimated that if attempts were made to operate the cars in that town by other men, there would be a general strike, thus tying up the remainder of the system. The Town of Lauzon applied to the Commission, June 1, asking it to force the company to find money to operate the cars in Lauzon, or that the Commission take over the line and operate it. Judgment was given June 9, the Commission refusing to entertain the motion, or to force the company to operate its cars by borrowing money, as the company had proved in the investigation that it was unable to do so, and decided that no further motions of the Town of Lauzon to force the company to operate its cars under the existing conditions would be entertained, and also that no further motions or applications in regard to the matter would be accepted until the four municipalities interested got together and agreed to revise the franchise, or to submit the whole question to the Commission for its decision. On June 10, all the company's employes, including the car barn men, etc., went on strike. The Mayor of Levis, on behalf of Levis and Bienville, guaranteed to readjust the fare schedule, so as to permit wages to be increased, and the service was resumed in those two municipalities June 11, the council subsequently agreeing to the granting of the following tari:—Cash fare, 10c.; tickets, 4 for 30c., 50 for $3.50; children's tickets, 10 for 25c.; scholars tickets, 50 for $2. The situation in St. Joseph and Romuald is reported as unchanged.

A press report of June 21 stated that the company's cars were again running in St. Romuald, the municipal council having on June 19 accepted the new fare schedule asked for by the company. St. Joseph municipality and the Town of Lauzon were still without a car service.

### Canadian Electric Railway Association.

Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.

Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.

President, A. Gaboury, Superintendent, Montreal Tramways Co.

Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

Executive Committee, The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

Official Organ—Canadian Railway and Marine World, Toronto.

**London & Port Stanley Ry.**—In order to meet increased wages, the week end rates between London and Port Stanley were cancelled June 17, and the regular tariff rates were put in force, viz., London to St. Thomas and return 80c, and London to Port Stanley and return $1.25. The previous week end rate from London to Port Stanley and return was 95c.

**Nova Scotia Tramways & Power Co.**—The Nova Scotia Legislature has passed an act amending chap. 180, of the act of 1914, subsections c and f of sec. 22, which fixed the fares to be charged by the company and sec. 1 of the new act declares that notwithstanding anything contained in those subsections and any amendments thereof increased fares may be charged. Following is a comparison of the old rate of fares and those now authorized:—

| Old. | New. |
|---|---|
| Cash..... 5c. | ..... 7c. |
| 6 tickets for.....25c. | 4 tickets for.....25c. |
| 25 tickets for..... $1 | 17 tickets for..... $1 |
| 10 workingmen's tickets for.....25c. | 20 workingmen's tickets for ..... $1 |
| 10 school children's tickets for.....25c. | 8 school children's tickets for .....25c. |

The workmen's tickets are good only up to 8 a.m., and the school children's tickets are for pupils under 16 years of age actually attending any public school, available for use between 8 and 9.30 a.m. and between 1 and 4.30 p.m. of every regular school day.

Section 3 of the act provides that the new fares shall only be in effect for two years from the coming into operation of the act, viz., from May 23, and that on or before Dec. 31, the government shall appoint a commission under the Public Inquiries Act consisting of three members—one appointed by the Chief Justice of the Supreme Court of Nova Scotia, one by Halifax City Council, and one by the company—who shall make investigations and report to the government and to the Halifax City Council by Feb. 1, 1922, as to whether the increased fares granted by the act shall be continued further.

We are advised that very little difficulty was experienced in the legislature over the granting of the right to charge increased fares, but that there was considerable discussion over the matter of regulating the rates for the future. Under the company's charter the matter of the regulation of fares, etc., in the tramway department does not come under the Nova Scotia Public Utilities Commission, but is subject to legislative enactment. The company desires that the Public Utilities Commission should have jurisdiction over its electric railway, but the Halifax City Council objected to this being done and the legislature finally approved of the appointment of a special commission.

**Sarnia St. Ry.**—The Point Edward, Ont., Town Council is reported to have refused to permit the Sarnia St. Ry. to charge increased fares within its limits, unless provision is made for selling tickets for working women as well as for working men. The rates of fare are before the Sarnia City Council, and it is reported that the putting in operation of a straight 5c. fare may be the only solution to the difficulty.

**Winnipeg Electric Ry.**—The hearing of evidence by the Manitoba Public Utilities Commission on the Winnipeg Electric Ry.'s application to permanently increase the fares charged on itis lines, is reported to have been concluded June 16, when the sittings were adjourned to June 24, to hear arguments. A press report states that the Commissioners' decision is expected to be given about the end of July.

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**One-Man Cars for St. John, N.B.**—The New Brunswick Power Co. is arranging to operate on its electric railway in St. John, N.B., one-man cars of the McCauley type, similar to those on the Calgary, Alta., Municipal Ry., and the Moose Jaw, Sask., Electric Ry., on the street railway in St. John, N.B. The proposal is being opposed by the employes on the ground that they do not consider the cars to be safe. The company is arranging to fit up some cars and to submit the question of their safety and that of their operation to the civic authorities and the citizens. The company claims that it is impossible to give a service with two men on a car at the present 6c. It is proposed to put on a third more cars of the one-man type, than are now in service, and to give a night service.

**Montreal Tramways Co.** has declared a dividend of $2.50 a share for the quarter ended Dec., 1918. A press report states that with this payment the company will have paid up half of the amount of dividends in arrear.

# Jurisdiction over British Columbia Electric Railway.

An article in Canadian Railway and Marine World for June, referring to a bill introduced by the Minister of Railways, to amend the Railway Act, 1919, was headed "British Columbia Electric Ry. Restored to Provincial Jurisdiction." This was somewhat premature. The bill, being a government measure, and having been read a first time, it was taken for granted that it would pass without amendment, but it was amended by the Commons Railway Committee. The bill, as introduced by the Minister of Railways, was as follows:—

"1. Section 6 of the Railway Act, 1919, chapter 68 of the statutes of 1919, is amended by adding thereto the following subsection:—

"'(2) The provisions of paragraph (c) of this section shall be deemed not to include or apply to any street railway, electric suburban railway or tramway constructed under the authority of a provincial legislature, and which has not been declared to be a work for the general advantage of Canada otherwise than by the provisions of the said paragraph.'"

During its consideration by the Railway Committee, W. A. Boys, M.P. for South Simcoe, Ont., moved, seconded by J. R. Wilson, M.P. for Saskatoon, Sask., that the following be added to subsection 2:—

"Provided that this subsection shall not affect, or come into force with respect to any street railway, electric suburban railway, or tramway in the Province of British Columbia, until the expiration of one year from the passing of this act."

This amendment was carried by 35 to 6, the Minister of Railways, Hon. J. D. Reid, being among those who voted for it. The House of Commons went into committee of the whole on the bill, June 16, when the chairman read the Railway Committee's amendment. Following is the official report of the discussion:—

Hon. J. D. Reid: The necessity for this bill arises from the fact that last year in amending the Railway Act a clause was inserted, at the request of the railway brotherhoods, bringing under the Board of Railway Commissioners' jurisdiction any provincial railway leased or operated by a railway company holding a Dominion charter. The question arose over the Quebec Central Ry., which, although operated by the C.P.R. Co., was subject to the jurisdiction of the Quebec Public Utilities Commission. But the clause as drafted goes further than we intended and covers any provincial electric railway or tramway leased to a railway company subject to the Board of Railway Commissioners. It was brought to our attention by the British Columbia Electric Ry. Co., which applied to the B.C. Public Utilities Commission for approval of a higher rate schedule, and was referred to the Dominion commission, the provincial commission pointing out that, under the amendment in question, the B. C. E. R. Co. was no longer under its jurisdiction.

D. D. McKenzie: What is the clause of the Railway Act which is amended by this bill?

Hon. J. D. Reid: Sec. 6, subsec. (c) as follows:

"Every railway or portion thereof, whether constructed under the authority of the Parliament of Canada or not, now or hereafter owned, controlled, leased, or operated by a company wholly or partly within the legislative authority of the Parliament of Canada, or by a company operating a railway wholly or partly within the legislative authority of the Parliament of Canada, whether such ownership, control, or first mentioned operation is acquired or exercised by purchase, lease, agreement or other means whatsoever, and whether acquired or exercised under authority of the Parliament of Canada, or of the legislature of any province, or otherwise howsoever; and every railway or portion thereof, now or hereafter so owned, controlled, leased or operated shall be deemed and is hereby declared to be a work for the general advantage of Canada."

What has happened in British Columbia has happened in several of the other provinces. When the Railway Act amendment of last session was put through there was no intention of bringing all our street railways under the control of the Board of Railway Commissioners. This bill is simply to provide that these electric railways and tramways shall remain under provincial jurisdiction as they were prior to the revision of the Railway Act last year. The bill was thoroughly threshed out before the railway committee. The only question was with regard to this amendment; the committee were unanimous so far as the principle of the bill was concerned.

D. D. McKenzie: When the Railway Act was amended last year it was not discovered that the law as then passed was so far reaching as it turned out to be?

Hon. J. D. Reid: That is it.

D. D. McKenzie: Is there any judicial decision to the effect that the bill does mean more than the house intended it to mean?

Hon. J. D. Reid: The British Columbia authorities, as I understand it, contended that the amending legislation of last year took away certain of their rights so far as their electric railway system was concerned. The B.C. Electric Ry. applied to the railway commission to have the rates fixed, and action was taken by the Dominion Board of Railway Commissioners. The decision was therefore arrived at that we should take this step to provide that these electric railways and tramways shall remain under the provincial jurisdiction.

The section was agreed to, and the bill reported, read the third time and passed.

The Minister of Railways' remarks would give the impression that the B. C. E. Ry. was to be restored to provincial jurisdiction forthwith, but, as shown above, the amendment to the bill provides that this shall not take place until a year from the passing of the act. The effect of this is that the company will continue to charge 6c. fares in Vancouver for at least another year.

## Hydro-Electric Power Commission of Ontario's Radial Railway Projects.

W. S. Murray, consulting engineer, New York, N.Y., who was employed recently by the Hydro Electric Power Commission of Ontario, to report on the proposed construction of the Toronto and Bowmanville, the Toronto, Hamilton and Niagara Falls, and the Hamilton and Elmira radial railways, has made a report which he has summarized as follows:—

I consider the construction and operating estimates made by your engineering staff conservative.

I find the lines admirably located with reference to the passenger and goods traffic they are designed to reach, the density of which is not in unfavorable comparison to existing roads which have thrived in the United States.

I do not consider the act of their construction as one against which a charge of duplication can be made.

I am in full accord with the Commission's conclusion that it is inadvisable to proceed at this time with the full construction of these radials on account of the greatly inflated costs applying both to line and equipment.

I consider it most important, however, that the Commission proceed with the development of its full plans, applying to financing as well as construction,, in order that it may be in a position to acquire such existing radials and property as may be economically purchased, and which will later form parts of the completed systems.

Mr. Murray is of the firm of McHenry & Murray, who practice in general railway electrification, the senior partner being E. H. McHenry, at one time Chief Engineer, C.P.R., Montreal. Mr. Murray was Chief Electrical Engineer, New York, New Haven & Hartford Rd., in full charge of electrical engineering and construction details of its electrification, which cost about $25,000,000.

## Sunday Operation of Electric Cars in Ontario.

The Ontario Railway Act, R.S.O., 1914, chap. 185, provides as follows:—

"235. (1) Subject to subsections 2 and 3 and notwithstanding anything in this act or any other act, street railways may be operated on Sunday within a city having a population of over 50,000 after a majority of those voting of the electors qualified to vote at municipal elections have voted in the affirmative in answer to the question: "Are you in favor of operating street railways on Sunday?' but no person shall be entitled to vote more than once on such question.

"(2) The question shall not be submitted until the Lieutenant Governor in council has declared that the population of the city is over 50,000, and the Lieutenant Governor in council may require a census to be taken and may prescribe the nature of the census and the time and manner of taking the same.

"(3) When the Lieutenant Governor in council has declared that the population of the city is over 50,000 the question may be submitted at the annual municipal election, if the municipal council shall have decided on or before the 1st of December preceding the date of such election to submit the question, and shall not later than the 15th of December have given notice of such decision by public advertisement, for at least one week in each issue of some daily newspaper published in the municipality.

"(4) The provisions of The Municipal Act as to the submission of questions to the electors and the voting thereon and the imposition of penalties and the prevention of corrupt practices in connection with elections shall apply to a vote taken under the provisions of this section, but no person shall be entitled to vote more than once on the question.

"(5) Nothing in this section shall entitle a street railway company, which has entered into an agreement with a municipal corporation not to run cars on Sunday, to run any of their cars on any Sunday unless and until the company has received permission from the council of such corporation by bylaw to run their cars on Sunday, and then only under and subject to such terms and conditions as may be contained in such bylaw, and unless and until the company has also entered into an agreement with the corporation to observe the terms and conditions of the bylaw."

The Ontario Legislature at its last session passed an act striking out the figures 50,000, wherever they occur in the the above section and substituting the figures 15,000.

# Bill to Amend the Ontario Railway Act.

C. McCrea, M.L.A., introduced a bill in the Ontario Legislature May 13 to change the Ontario Railway and Municipal Board's powers as follows:—

1. The Ontario Railway Act is amended by inserting as part of section 210 the following as sub-section 4 thereof:

(4) In the event of the board being of opinion that the fares taken by any company are insufficient to meet the ordinary and necessary expenditures of the company and to provide for the maintenance and upkeep of the tracks, equipment and rolling stock in a manner consistent with the safety and comfort of the public, the board may authorize and permit an increase in the fares to be taken by any such company to such an extent as will ensure the provisions of this subsection being carried into effect notwithstanding the provisions of subsection 3 or the provisions of any agreement between the company and a municipality in regard to the amount of the fares to be charged by such company, to the contrary.

2. Section 260 of the said act is amended by adding thereto the following as subsection 9:

(9) The provisions of this section shall not apply nor shall the board be authorized to exercise the powers given it under the terms of the preceding subsections if it appears that the alleged violation is the result of a difference or dispute arising between any company and its employees until after such time as a board of conciliation has been appointed under The Industrial Disputes Act and has considered and delivered their award upon the matters in dispute nor shall the board exercise such powers provided any company shall within four days after the receipt of the said award express its intention of accepting and complying with the same.

When the bill came before the Legislature's Legal Committee on May 25 it was decided to replace it by one said to have been prepared by the Ontario Railway & Municipal Board as follows:—

"Where the council of any municipality has by resolution expressed the opinion that the wages paid to the workmen upon an electric railway or street railway operating in the municipality, under a bylaw or agreement of the municipal corporation are insufficient or unfair, and that such wages should be increased, the council may apply to the Ontario Railway and Municipal Board to hold an inquiry and report as to the practicability of increasing the wages paid to such workmen, having regard to revenue derived by the company in the operation of the railway, and the board shall not, where a question of wages is involved, take possession of the railway or any part of the same as authorized by subsec. 2 of sec. 260 of The Ontario Railway Act until the council has passed such resolution.

"Where upon such inquiry by the Ontario Railway and Municipal Board it is found that the revenue derived by the company in the operation of the railway, after providing for other working expenditures, and without making any allowance for dividends payable on preferred or common stock, is not sufficient to admit of an increase in the wages paid to such workmen without operating the railway at a loss, the council may by by-law, and with or without submitting the same to the electors, authorize the company to charge such different or increased rates of fares as the council may deem necessary, and may enter into an agreement or contract with the company for that purpose."

"The powers conferred by sections 2 and 3 may be exercised notwithstanding the terms and limitations of any general or special act of this legislature or of any municipal bylaw, agreement, license, contract or other instrument heretofore passed or entered into."

When the house went into committee of the whole on the new bill, Lt. Col. Price, M.P. for Parkdale, Toronto, took exception to it, on the ground that it was, as reported from the legal committee, an entirely different bill to that referred by the house to the committee, and requested that the committee rise and that the Speaker give a ruling upon the point raised. The Speaker decided that, while it was apparently a new bill, recommended to the house by the legal committee, he did not feel that he could rule it out of order, but he advised adherence to the British practice and that the bill be withdrawn and be reintroduced as a new bill. Mr. McCrea accepted the Speaker's ruling, and introduced the bill as a new one. It was read a second time, but the motion for its second reading was defeated.

Lt. Col. Price then introduced a bill to amend the Municipal Franchises Act, which was in part as follows:—

2. (1) Subsection 3 of section 3 of The Municipal Franchises Act is repealed and the following substituted therefor:

(3) No renewal or extension of any franchise heretofore or hereafter granted, and no alteration or modification of the terms or conditions of any such franchise nor in any agreement between any individual, firm or company constructing or operating upon, or using any highway for the purpose of a railway, street railway or public utility, shall be lawful until the same has been sanctioned by a by-law of the council of the municipality which has been submitted to and has received the assent of the municipal electors in the manner provided by The Municipal Act with respect to bylaws requiring the assent of the electors.

(2) The amendment made by subsection 1 shall take effect as if the same had been enacted at the time of the passing of The Municipal Franchises Act, chap. 42, of the casts passed in the second year of His Majesty's reign.

This bill was ruled out of order and the whole matter then dropped.

## Proposed Sale of Moncton Tramways, Electricity & Gas Co.'s Property.

The New Brunswick Legislature has passed an act on the application of Moncton City Council authorizing it to rn ton City Council authorizitg it to bul all the Moncton Tramways & Gas Co.'s rights, title and interest in the electric lighting plant in the city, and all its rights and property belonging to or forming part of its tramway system upon such terms as may be agreed upon between the city council and the company. No agreement for the purchase of the lighting plant or tramways, or either of them, shall take effect until it has been approved by the ratepayers.

The Moncton Tramways, Electricity & Gas Co. acquired from the City of Moncton by lease dated May 11, 1910, the gas lighting and electric lighting plants belonging to the city and subsequently built the tramway lines. It has 2.5 miles of line, 4 motor passenger cars and 1 other car. The company is controlled by people in Pittsburg, Pa.

The ratepayers will vote on July 3, on a by-law to improve an agreement made between the city council and the company for the purchase of the latter's electric light plant and electric railway in the city, also certain lands, from May 31, 1920, for $165,000, to be paid before May 31, 1921, with interest, and subject to certain adjustments to be settled by the city auditor.

## Additional Cars for Toronto Railway.

The Ontario Railway and Municipal Board, on the application of the City of Toronto, has issued an order directing the Toronto Ry. to provide 200 additional double truck cars for operation by June 1, 1921, and in case of default, to pay the city a penalty not to exceed $1,000 for each day it continues in default from that date.

The history of this matter dates back for several years, the board having ordered the company to provide and have in operation 100 additional cars by Jan. 1, 1918, and a further additional 100 by Jan. 1, 1919. Prior to this order, the City of Toronto promoted a bill in the Ontario Legislature, which provided among other things, that the company place in operation 100 new cars during 1917 and a further 100 during 1918, and in default to pay to the city $100 a day for each car less than the numbers called for. While in committee this section of the bill was struck out, on the ground that it was a matter entirely within the Ontario Railway and Municipal Board's jurisdiction. At the same time as this matter was before the legislature, the city had an application before the Ontario Railway and Municipal Board to enforce the company's compliance with the board's previous order. Early in 1918 further legislation was sought by the city to compel the company to comply with the board's order and to penalize it for default, and an amendment to the Ontario Railway Act was passed Mar. 26, 1918, providing that the board, for the purpose of enforcing compliance with any order theretofore or thereafter made upon a railway company under its jurisdiction, to furnish additional cars for its service, might order such company to pay to the municipality in which it operates, a penalty not exceeding $1,000 a day for noncompliance. On Apr. 19, on the city's application, the company was fined $24,000 by the board, being at the rate of $1,000 a day from Mar. 26, for noncompliance with the board's order. This judgment was appealed by the company through various courts and eventually to the Imperial Privy Council, which decided that the board could not inflict a penalty for noncompliance with a previous order, unless it was mentioned and made a part of the order. Since this judgment was delivered early this year, the city again applied to the board for an order to enforce its original judgment, with the penalty attached, and the board, as stated above, ordered the company to provide an additional 200 double truck cars by June 1, 1921, with $1,000 penalty for each day in default.

# London Street Railway Fares and Wages.

As stated in Canadian Railway and Marine World for June, the Ontario Railway and Municipal Board, after having taken over the London St. Ry. on May 5 upon the city council's application, owing to iits having ceased to be operated in consequence of the employes strike for higher wages, presented a report upon the condition of the line on May 18. The board stated that a consideration of the report it had received from its special auditors clearly established the following conclusions:—"That the present fares will not produce sufficient revenue to operate the railway and pay an increase in wages to employes, even if no provision is made for dividends or depreciation. That of the $637,480.00 capital stock outstanding, $578,640.00 was paid for in cash and $58,840.00 was paid as stock dividends properly declared out of earnings. The average yearly dividents of the shareholders for the 25 year period was 4.82%, which was paid 4.54% in cash and 0.28% paid in stock dividends. Since Dec. 31, 1915, the total amount of cash dividends declared was $17,180.40. No dividends were declared in 1918 and 1919. As will be seen from the comparative statement of working capital, the company's financial position as of Dec. 31, 1918, shows a deficit of $48,268.30, and as of Dec. 31, 1919, a deficit of $33,179.38." The board has no power to increase fares, but the recent decision of the Appellate Division of the Supreme Court of Ontario indicates that the city council has such power, but under the Ontario Railway Act such increase is limited to an increase not exceeding 5c. a passenger. The board added:—"If railway operation is to be carried on, it is absolutely necessary to procure additional revenue. The board cannot operate at a loss, as there is no fund available to which it can resort to meet losses in operation. In the board's view there is only one possible source of additional revenue and that is by way of an increase in fares. It seems to the board that the question of a new wage scale and the question of increased fares are so interdependent that the duty of determining by negotiation with the company's employes the minimum demands of the latter, as well as of making such alterations in the agreement in respect of fares as may be necessary to provide additional revenue and ensure the continued operation of the railway, properly falls upon the London City Council as one of the original parties to that agreement."

Following the receipt of this report several propositions were made to the council in order to permit the charging of an increased fare so that an increase of wages might be given to the men. The first proposition was for the fixing of the fare at 5c. and abolishing all tickets, with the exception of the limited hour tickets, which it was proposed to sell at 6 for 25c.; this being defeated, an attempt was made to increase the number of limited tickets to be sold to 7 for 25c., but this also was defeated on June 9, and the men again went on strike. The Ontario Railway and Municipal Board presented another report to the Council on June 10, in which it expressed its willingness to operate the line on a basis of a 5c. cash fare, with unlimited tickets at 6 for 25c. and limited tickets at 8 for 25c. and to pay over to the city any surplus remaining after paying the men an advance of 8c. an hour. After several days negotiations the men returned to work June 16, having, it is reported, agreed to accept an increase of 4c. an hour, with a rearranged service which will have the effect of reducing the number of cars on certain routes. The fare schedule remains unchanged, the railway still being under the Ontario Railway and Municipal Board's charge.

The London Free Press of June 17 said:—"The Ontario Railway and Municipal Board has effected an agreement with the street railway employes that may be said to represent a victory for all concerned. The employes are to receive an increase of 4c. an hour, and more if the earnings will warrant it. The company is to have its bonds retired at the rate of $36,000 yearly, which is equivalent to about 6% upon the money invested in the railway. The patrons of the railway are to retain the dates of fare named in the agreement made between the city and the company 25 years ago."

The London Trades and Labor Council on June 16 asked that the council arrange for taking a vote as early as possible on the question whether the existing fares are to be continued, or whether the price of tickets is to be amended by selling 6 for 25c., unlimited, and 8 for 25c., limited.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry. and allied companies:—**

| | Apr. 1920 | Apr. 1919 | 10 mos to Apr. 30, 1920 | 10 mos. to Apr. 30, 1920 |
|---|---|---|---|---|
| Gross | $749,081 | $631,988 | $7,306,918 | $6,022,107 |
| Expenses | 544,276 | 458,674 | 5,146,419 | 4,449,003 |
| Net | 204,805 | 173,314 | 2,160,499 | 1,573,104 |

**Calgary Municipal Ry.**—R. A. Brown, Superintendent, is reported to have submitted a statement to the city commissioners showing that there will be a total deficit of $82,221.72 in street railway funds this year, of which $38,688 is required to be placed in depreciation account. The total deficit to May 31 was $10,629.29 without counting two carloads of wheels the city has bought, making the actual deficit $18,139.04. The gross earnings of the railway this year are estimated at $900,000.

**Cape Breton Electric Co. and allied campanies:—**

| | Apr. 1920 | Apr. 1920 | 4 mos. to Apr. 30, 1920 | 4 mos. to Apr. 30, 1920 |
|---|---|---|---|---|
| Gross | $47,111 | $46,456 | $186,058 | $184,554 |
| Expenses | 41,116 | 33,317 | 168,816 | 136,732 |
| Net | 5,995 | 13,137 | 17,242 | 47,802 |

**Sudbury-Copper Cliff Suburban Electric Ry.**—We are officially advised that the Sudbury-Copper Cliff Suburban Electric Ry. Co. has offered to sell its system to the town of Sudbury, Ont., for $222,921. This amount is said to represent $208,680, the actual cost of the system and $14,251 representing three years' dividend on preferred stock. The company offered to accept payment in 10, 15 and 20 year municipal debentures.

The company's railway was opened for traffic in the Town of Sudbury, and from Sudbury to Copper Cliff, a distance of 6.27 miles, Nov. 11, 1915, and subsequent extensions brought the total mileage up to 9 miles. It owned at June 30, 1918, 3 closed passenger cars, and has its own power plant, a description of which was given in Canadian Railway and Marine World, Sept., 1916, pg. 377. Its capital consists of $173,100 of stock, and $94,000 of bonds, a total of $267,100.

**Toronto Civic Railway.—**

| | May 1920 | May 1919 |
|---|---|---|
| Receipts | $45,303 | $36,004 |
| Passengers | 2,678,059 | 2,120,776 |

**Toronto Railway.—**

| | 1920 Receipts | 1920 City percentage | 1919 Receipts | 1919 City percentage |
|---|---|---|---|---|
| Jan. | $ 652,350 | $110,950 | $ 588,923 | $ 88,339 |
| Feb. | 595,861 | 119,172 | 545,771 | 96,563 |
| Mar. | 745,706 | 149,141 | 615,526 | 123,105 |
| Apr. | 653,340 | 130,668 | 600,231 | 120,046 |
| May | 644,458 | 132,892 | 620,068 | 124,014 |
| | $3,311,715 | $642,823 | $2,970,519 | $552,067 |

**Toronto Ry., Toronto & York Radial Ry. and allied companies:—**

| | Apr. 1920 | Apr. 1919 | 4 mos. to Apr. 30, 1920 | 4 mos. to Apr. 30, 1920 |
|---|---|---|---|---|
| Gross | $1,211,708 | $1,051,960 | $4,711,579 | $4,257,882 |
| Expenses | 799,048 | 573,597 | 3,098,732 | 2,476,143 |
| Net | 412,660 | 478,363 | 1,612,847 | 1,781,739 |

**Winnipeg Electric Ry. and allied companies:—**

| | Apr. 1920 | Apr. 1919 | 4 mos. to Apr. 30, 1920 | 4 mos. to Apr. 30, 1920 |
|---|---|---|---|---|
| Gross | $431,685 | $367,196 | $1,832,310 | $1,513,834 |
| Expenses | 338,964 | 272,626 | 1,385,434 | 1,112,590 |
| Net | 92,721, | 94,570 | 446,876 | 401,244 |

## Electric Railway Notes.

The Hydro Electric Power Commission of Ontario has ordered 6 motor cars and 6 trailer cars for the Hydro Electric Ry. (Essex Division), formerly Sandwich, Windsor & Amherstburg Ry.

R. A. Brown, Superintendent, Calgary, Alta., Municipal Ry., is reported to have advised the city council against adopting the pay-as-you-leave system on the city cars, and in favor of continuing the present system of pay-as-you-enter cars.

The Montreal Tramways Commission, the Montreal Administrative Commission and the Montreal Tramways Co. are reported to have agreed to have snow removed from the streets next winter by flat cars operated by the Montreal Tramways Co.

The St. Thomas, Ont., Municipal Ry. is reported to be operating two of its one-man cars, but pending the installation of the protective devices ordered by the Board of Railway Commissioners at the steam railway crossings the cars are in charge of a motorman and conductor.

**A Hamilton Accident Suit.**—Judgment was given by Mr. Justice Kelly recently, in an action brought by Mrs. Jeannie Ellis, against the Hamilton St. Ry. and H. K. Stiles, which was heard at the Hamilton, Ont., assize court in January. The plaintiff alighted from a Hamilton St. Ry. car on its stopping at a place other than a regular stopping place. Stiles was driving an automobile behind the car, and not expecting it to stop ran alongside it, knocking down and injuring Mrs. Ellis. In his judgment Justice Kelly said:—"While I do not lay it down that the stopping of a street car between the regular stopping places is in itself an act of negligence, there is a duty on those operating a street car to take reasonable means to safeguard one who, by their act, may be exposed to such danger. It is likewise incumbent on persons in the position in which plaintiff placed herself, or was placed, to take reasonable means to avoid such danger. But the jury have exonerated her from negligence in that respect." Judgment was given against the company for the damages assessed and costs and the action as against Stiles was dismissed with costs. A 15 days stay was granted.

# Nova Scotia Tramways and Power Co's Annual Report.

Following are extracts from the annual report for the year ended Dec. 31, 1919. Early in the year your newly elected directors deemed it advisable to secure the services of Stone & Webster, Boston, Mass., to manage and operate the company. This was accomplished in June. In accepting the management Stone & Webster stated that in view of the conditions which have arisen during the past two or three years it was impossible for the company to fulfil its obligations either to the community or to the stockholders, if it were compelled to continue to attempt to meet its increased charges with its present rate of income. The results of the past year show that this statement was accurate. Many adverse causes had tended to bring about certain undesirable operating conditions, but certainly the prime causes were the war conditions in Halifax, its sudden increase in population, but lack of available labor, the disastrous explosion and the impossibility of financing in competition with Victory Loans and other war activities. As a result of these conditions, the tramway service was not satisfactory to anyone and the need of large sums for construction and reconstruction was perfectly evident. Additional cars were needed, as the equipment was entirely unable to handle the traffic properly. A portion of the distribution lines of the light and power department were in very bad shape. Due to the quality of coal available, the quality of the gas was entirely unsatisfactory.

Financing.—While the outlook was not encouraging for the immediate future, it was, nevertheless, determined to use every effort to better the service, in the confident belief that the imperative need of additional revenue would be recognized by all and granted by the authorities. Negotiations were entered into with well-known bankers in order to finance the necessary reconstruction and essential improvements and finally $1,000,000 of 3 year 7% notes were sold About three-quarters of the proceeds was immediately appropriated to definite items of construction, and reconstruction as follows: Tramway department, $480,000; light and power department, $188,000; gas department, $58,000; and to miscellaneous items about $12,000. Owing to unavoidable delays much of the work remains to be completed in 1920. Present plans call for the expenditure of the remaining quarter in about the following proportions: Tramway department, $133,000; light and power department, $60,000; gas department, $30,000. While the business in sight will call for the expenditure of large sums in addition to the above, such expenditures cannot be made until the company is in a position to finance them.

Tramway Construction and Reconstruction: twenty-four steel safety cars were ordered, at a cost, including duty, of 42½%, of approximately $10,000 each, or $240,000 for the lot, and delivery was promised Nov. 1, 1919. In spite of the utmost efforts by your company, the manufacturers have from time to time postponed this date because of shortage of labor and materials. There now seems good reason to believe that actual delivery will begin in Feb., 1920, and that the cars, or at least a substantial number of them, will be in operation in March. For city work the safety car is rapidly displacing all others. The general public satisfaction with its performance is graphically demonstrated by the fact that during 1919 three of every four cars ordered for city lines in the United States were safety cars. As traffic conditions in Halifax are not as difficult as in many cities on the continent, the fact that the safety car meets adequately the requirements of the more exacting conditions in many other cities assures its success in Halifax. During the year 21 of the more modern old cars were rebuilt and painted in the company's shops. One new snow sweeper was purchased and a new snow plow constructed.

Much of the tramway overhead construction was rebuilt during the last half of the year, and reasonable progress made in carrying out the programme of double tracking all of the belt line.

The track reconstruction was very expensive, one of the heaviest portions of this expense being the paving of the street itself, which under the law falls upon the company. This is particularly heavy, as the best grade of paving obtainable is required, even though the balance of the street, paved by the city, is covered with a less permanent surface. The work in connection with the rehabilitation of the track system was accomplishsed under very adverse conditions. Labor was scarce, and wages high, and the weather was particularly bad, hampering the progress of all outside work in the city. In addition to the completion of the paving programme already started and financed out of the proceeds of the notes authorized, the city's street paving programme for 1920 will call for an expenditure by the company of about $400,000, along tracks which need not be reconstructed at present.

Tramway Earnings and Expenses.—The gross earnings of the tramway department have increased substantially over those of the previous year, but the increase has been more than offset by the growth in operating expenses and taxes. During the year, the labor cost of this department, already high, has increased over 15%; materials even to a greater degree. Shareholders familiar with the financial difficulties which have recently overtaken tramway lines in the U.S. will understand the greater difficulties which have confronted this company, when it is realized that materials in Halifax cost from 30% to 60% more than they do in the U.S. This is mostly because of high customs tariffs, which affect Canadian prices as well as goods purchased in the U.S. The average tramway fare in Halifax is 4.3c a passenger. In the United States such a fare has been found inadequate and ruinous and has been increased very generally. The street car fare in Boston is 10c, in St. Louis, 8c., in Cincinnati 7c., in Montreal and in Quebec 7c. There are 460 cities in the U.S. serving a population of over 31,000,000 in which fares have been increased.

Following the determination to better the service, the car mileage in 1919 was increased 432,227 miles, or 40% above that of 1918. The earnings per car mile in 1918 were 39.3c and fell to 33.2c. in 1919, because of the increased number of car miles operated. As there is still overcrowding in rush hours, further increases in car mileage will be made during 1920 and from 40 to 50 cars will be operated against the usual 31 during 1919.

Fares.—The Nova Scotia Legislature will be asked to authorize an increased tramway fare. The thinking public realize fully that no street car company can carry passengers at 4.3c. each, and, if they can be assured of good service, should not oppose the legislation necessary to compensate the company for the cost of that service. It certainly is absolutely essential that the requested legislation be prompt and adequate, if the company is to be put into a position to borrow the additional funds which it is imperative that it should have if it is to give the service that the city needs.

Other sections of the report deal with the company's gas, electric light and power departments. The gas department has been self sustaining for a number of years and should be on a paying basis before the end of this year. The light and power department's growth of gross earnings has been satisfactory, and it should show even better earnings than it did last year.

Tramway Difficulties.—The difficulties which the company is endeavoring to meet are in the tramway department, which is not receiving income sufficient to cover the cost of service. It is in the interest of both shareholders and public that this situation be corrected. The City of Halifax is forging ahead rapidly. Its public utilities must keep pace with it or both they and it will suffer. Your company will need to make arrangements for additional funds during the coming year if it is to fill its place in the community. Unfortunately, with the present and prospective price of wages and materials, the net earnings from all departments are not sufficient to warrant a further increase in the company's liabilities. It seems hopeless to expect that operating expenses as a whole will be reduced; in fact, the tendency will be rather upward. The only way to increase the net earnings is to increase the operating revenue. This will be accomplished to some extent by the better service which the company will be able to give, as better service always brings increased use of that service. The increase from this source, however, will be but a fraction of what is necessary. The balance must be obtained by increased charges to the public. Experience in other cities has shown that the public is willing to make use of good facilities at an increased price. They do wish, however, to feel assured that they are not paying too much and giving the owners of a public utility an undue profit. In this connection the cry of "watered stock" is often raised. By "watered stock" is meant capitalization in excess of the value of the property. Most people now realize that under the law such excess capitalization has no effect on rates. The company is not entitled to earn a fair return on the par value of its securities, but upon the value of its property.

In authorizing the issue of securities the Board of Commissioners of Public Utilities valued the plant at about $3,700,000, which was a much smaller amount than that determined by the company's appraisal. Since that time large additions have been made, so that the present book value is about $4,700,000. Owing to the increased cost of construction, the real value of this property today is materially in excess of this latter amount. To encourage new capital it is evident that a fair return must be earned on the present capital. The constant need of new capital is emphasized when it is realized that in a growing city it is necessary to nearly double the facilities every seven to ten years. There-

fore rates must be based on the cost of acquiring new capital and the cost of installing new facilities.

The trouble with the general public utility situation today is that it is trying to function by meeting a post-war outgo with a pre-war income. It cannot be done. The currency has been inflated. The dollar today, measured by its purchasing power of five years ago, is less than 50c. Many years must elapse before this condition can be fully corrected. It can only be met by permitting the industry to charge rates which will give it an income commensurate with its outgo. This report has gone into considerable detail because your directors feel that the shareholders are entitled to full information. They are, however, by no means discouraged, as they feel confident that the citizens and the governing bodies in Halifax have a clear realization of the situation, and realize the wisdom from their own standpoint of supporting the company in its endeavor to give them a public utility of which they can be legitimately proud.

**Results of operation for year ended Dec. 31, 1919.**

| | Gross Earnings | Operating Expenses | Balance |
|---|---|---|---|
| Railway dept. | $532,368.11 | $462,349.16 | $ 70,018.95 |
| Light and power dept. . . ..... | 538,780.12 | 324,330.05 | 214,450.07 |
| Gas dept. ..... | 121,539.72 | 133,524.87 | *11,985.15 |
| Steam heat dept. | 46,861.98 | 28,484.68 | 18,377.30 |
| Misc. earnings (rents) . . .... | 2,559.00 | | 2,559.00 |
| Revenue interest | 16,392.99 | | 16,392.99 |
| Total .....| $1,258,501.92 | $948,688.76 | $309,813.16 |
| Taxes . . ..... | | | 98,303.13 |
| Net earnings ..... | | | $211,510.03 |
| Int. and Amort. charges ..... | | | 144,618.89 |
| | | | $ 66,891.14 |
| Dividends paid on preferred stock.... | | | 62,364.00 |
| | | | $ 4,527.14 |
| Prior surplus (Jan. 1, 1919) ..... | | | 16,630.52 |
| | | | $ 21,157.66 |
| Deferred dividends restored to surplus acct. ..... | | | 62,280.00 |
| | | | $ 83,437.66 |
| Net direct charges to reserve and surplus (applying to prior year's operations) . . ..... | | | 34,311.49 |
| | | | $ 49,126.17 |
| Appropriation for replacements ..... | | | 47,557.75 |
| Current surplus ..... | | | $ 1,568.42 |

†3% June 1st. *Deficit.

The foregoing report was prepared before the N.S. Legislature had authorized the increase of fares.

At the annual meeting all the directors were re-elected, except F. B. Adams, who was succeeded by W. E. S. Griswold, New York, N.Y. The directors are as follows: A. Stuart Pratt, President; W. H. Covert, K.C., Vice President; W. L. Weston, Manager; F. P. Royce, A. J. McAllister, W. E. S. Griswold, M. L. Sperry, R. Ernst and H. H. Hunt. Stone & Webster are General Managers; H. A. Lemmon, Secretary, and J. R. Blackett, Treasurer.

The Canadian National Rys. Toronto Association held its annual picnic at Orillia, Ont., June 26, travelling by special train from Toronto and back. Several hundred people attended, including President D. B. Hanna, and a number of other prominent officials.

Montreal Incline Ry.—A press report states that the tracks, etc., have been taken up and the plant dismantled. The property was sold to be removed, the price received for the material being reported as $2,000.

Steel Rail Order.—The Canadian National Rys. have ordered 7,500 tons of steel rails, 85 lb. C.P.R. standard section, from Dominion Iron & Steel Co., Sydney, N.S., for immediate delivery.

# Nova Scotia Public Utility Commissioners Show Necessity for Higher Rates.

The Board of Commissioners of Public Utilities for Nova Scotia's last annual report states that of the 276 public utilities in the province required to report to the board, five are tramways. Referring to these, the commissioners say: "It is being generally recognized that the present are strenuous times for public utilities of every class. The difficulty of obtaining new capital and the higher interest rate demanded, the increased cost of labor, fuel and materials all contribute to make more severe the struggle, and a movement for an increase of rates is observable all over the continent. It was not to be expected that the utilities of this province should prove an exception to the rule, or escape the general stress. A number of them, including several incorporated towns, notwithstanding the advantage which a lower interest rate and exemption from taxation gives them, have found it difficult to continue service on the old schedules.

"The general movement towards higher rates is nowhere more noticeable than in the case of tramways. Notwithstanding that it is said that 53% of the urban population of the United States is paying higher fares on tramways than a year ago, it appears that 10% of the companies are under receivership. Similar figures are not available for Canadian centers, but it may be observed that increases have been granted in a large number of Canadian cities. What makes the problem more difficult is that indisputable fact that any increase over what has apparently come to be considered the standard 5c fare, does not bring a proportionate increase of revenue. It might be supposed that the trifling difference between 5c and 6c would deter few from using tram service. Experience, however, teaches that whether it be higher cost, inconvenience of making change, or resentment at a departure from long established standards, a falling off in traffic, not inconsiderable, follows any advance in rates. Some attempts at a solution of the problem thus presented have been suggested, amongst others, state or municipal aid to the utility, while the 5c fare is continued.

"Recently in New Brunswick a commission of experts called in to investigate the N.B. Power Co.'s affairs filed its recommendations. Among others, besides joint control, may be noted a proposal to relieve the company from any special taxes; from street repairs, excepting those made necessary by own way or structure; from removal of snow from any street or road; from cost of new pavement, and from rental of any street or bridge beyond the expense of maintenance of tracks. While on the one hand it may be said that it is illogical and unfair to impose any part of maintaining tram service upon others than those who use and directly benefit, it may with considerable force be argued that inasmuch as facility in transportation and the maintenance of a low-priced and efficient service benefits the whole community, giving in most instances an added value to real estate, no injustice is done in placing at least a portion of the burden upon those who may be non-users, but still derive a benefit, substantial if indirect.

"Under existing conditions the board deems its duty clear. Public utilities, in common with other companies and ordinary citizens, must be expected to bear their fair share of the burden which war conditions have imposed, but they are entitled to such a revenue as will meet operating cost and yield a fair, if somewhat modified return on the value of the property used. To withhold revenue sufficient to operate must result in decreased efficiency of service and ultimate bankruptcy or a receivership. To withhold return on investment will discourage capital and retard development of necessary enterprise. The board realizes the responsibility of exercising the wide powers which have been entrusted to it in dealing with matters of great importance to the public and often vital to the utility."

The companies operating electric railways under the board's jurisdiction are: Cape Breton Electric Co.; Nova Scotia Tramways and Power Co.; Pictou County Electric Co.; Sydney and Glace Bay Ry., and Yarmouth Light and Power Co. The Sydney and Glace Bay Ry. is operated by the Cape Breton Electric Co., thus making four companies, all of which operate electric light and power plants in their respective areas. The Cape Breton Electric Co. also operates a ferry service and the Nova Scotia Tramways and Power Co. also operates a gas plant. The Inverness Ry. and Coal Co., also comes under the board's control in respect of its electric light plant.

The commission's receipts for the year ended June 30, 1918, including a balance brought forward of $772.10, were $13,-191.47. This amount was made up of fees of $25 each, collected from 25 companies, including the Cape Breton Electric Co. and the Nova Scotia Tramways and Power Co., and of assessments amounting to $11,794.37, of which companies operating electric railways paid the following amounts. Nova Scotia Tramways and Power Co., $2,868.49; Cape Breton Electric Co., $1,913.20; Pictou County Electric Co., $996.87, and Yarmouth Light and Power Co., $208.14. The expenditures including: Salaries of the commissioners, $9,620; expenses of the commissioners, $728.59; salary and expenses of counsel, $916.67; salary and expenses of the secretary, $565.60; and sundry other items were $12,480.59, leaving a balance of $710.88.

Railway Lands Patented.—Letters patent were issued during April for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia as follows:—

| | Acres. |
|---|---|
| Calgary and Edmonton Ry. ..... | 316.50 |
| Canadian Northern Ry. ..... | 191.52 |
| Canadian Pacific Ry. grants ..... | 27.10 |
| Canadian Pacific Ry. roadbed and station grounds . . ..... | 114.76 |
| Central Canada Ry. ..... | 10.97 |
| Edmonton, Dunvegan & British Columbia Ry. . . ..... | 85.32 |
| Grand Trunk Pacific Branch Lines Co..... | 14.57 |
| Nicola, Kamloops & Similkameen Ry..... | 19.95 |
| Total . . ..... | 780.69 |

The G.T.R. motive power team from the Stratford, Ont., shops won the Chamberlin trophy in the fifth annual competition in first aid work at Montreal recently. Two teams each from Montreal and Stratford shops, and one each from Bonaventure station, Montreal, Turcot, Que., and Belleville, Ont., entered the competition.

# Electric Railway Employes' Wages, Working Conditions, Etc.

**Brantford Municipal Ry.**—A press report states that a new wage scale has been agreed upon between the commissioners and the employes, the increase granted being equal to about 15% and the new rates per hour being worked out as follows:—First year, 46c.; second year 48c.; third year, 50c.

**Hamilton St. Ry.**—The board of conciliation appointed to deal with questions of wages, etc., as between the company and its motormen and conductors being members of Division 107, Amalgamated Association of Street and Electric Railway Employes of America, was composed of Judge C. D. Snider, chairman; G. S. Kerr, K.C., representing the company, and F. Bancroft, representing the men. The board met April 29, when the parties not being ready, the sittings were adjourned to May 10, from which date they were continued to May 18, when a majority report was signed by Judge Snider and G. S. Kerr. During the sittings the various sections of the proposed agreement were discussed and finally adopted by both parties with the exception of those relating to wages and overtime. Following are the rates of wages per hour in force under the old agreement, in comparison with the rates recommended in the majority and minority reports respectively:—

| | Old rate. | Majority report. | Minority report. |
|---|---|---|---|
| First six months ..... | ..... | 38c. | ..... |
| Second six months .. | ..... | 40c. | ..... |
| First year . ..... | 34c. | ..... | 50c. |
| Second year . ..... | 38c. | 45c. | 55c. |
| Third year . . ..... | 41c. | 52c. | 65c. |

The majority report recommending time and a half for all overtime, also for legal holidays, and 7c. an hour extra for work on Sundays, which is not overtime. The minority report recommended that time and a half be paid for all overtime, legal holidays and Sunday work. The board was unanimous in fixing the date of the coming into operation of the new wage schedule as April 1.

After some negotiation between the parties, the men agreed to accept the wages recommended in the majority report, and an agreement was signed accordingly.

**Hull Electric Co.**—We were officially advised recently that the wages agreement between the company and its employes would expire July 1. The rate per hour under that agreement for motormen and conductors has been:—First six months, 34c.; second six months, 36c.; second year, 39c.; third year, 41c. The men asked for a new agreement with a uniform rate of 65c. Several conferences were held between G. Gordon Gale, Vice President and General Manager, and the men's representatives between June 3, when the demand was made, and June 9. but without result. At a meeting held June 12, the men decided to apply for a board of conciliation.

**Hydro Electric Ry., Essex Division,** formerly Sandwich, Windsor & Amherstburg Ry. W. R. Robertson, General Superintendent Hydro Electric Power Commission of Ontario's Electric Railways, is reported to have had a conference with the employes in Windsor June 19, and to have stated that wages will be increased on July 1.

**Levis County Ry.**—We were officially advised June 17 that the wages for employes operating safety cars are 32c. an hour for first year men, increasing 2c. an hour yearly until in the fifth year the rate is 40c.

**London & Port Stanley Ry.**—In our last issue it was stated that the employes had returned to work, at the rates of wages fixed by the conciliation board, but that if the management found it possible to pay higher wages in the future it would do so. The increased wages recommended by the conciliation board were made effective from Feb. 1, and some slight further advances have now been made to freight conductors and motormen, and to brakemen, also effective from Feb. 1. Following is a comparison of the rates per hour, prior to the conciliation proceedings, the conciliation board's award and the new rates.

| Passenger conductors and motormen— | Old | Conciliation | New |
|---|---|---|---|
| 1st year ..... | 44c. | 46c. | 46c. |
| 2nd " ..... | 46c. | 48c. | 48c. |
| 3rd " ..... | 47c. | 50c. | 50c. |
| 4th " ..... | 48c. | 52c. | 52c. |
| Freight conductors and motormen— | | | |
| 1st year ..... | 44c. | 46c. | 48c. |
| 2nd " ..... | 46c. | 48c. | 50c. |
| 3rd " ..... | 47c. | 50c. | 52c. |
| 4th " ..... | 48c. | 52c. | 54c. |
| Brakemen— | | | |
| 1st year ..... | 4c. | 41c. | 43c. |
| 2nd " ..... | 42c. | 43c. | 44c. |
| 3rd " ..... | ..... | ..... | 45c. |
| Baggageman . . ..... | 37½c. | 40c. | 43c. |
| Linemen . . ..... | 55c. | 60c. | 60c. |

Conductors, motormen and brakemen are paid time and a half after 10 hours. Line men are paid time and a half after 9 hours work, previous to 10.30 p.m., and after that double time. Some advances have also been given to other classes of employes.

**Montreal Tramways Co.**—Following the failure of efforts to secure a new agreement with the company at greatly advanced wages, as detailed in Canadian Railway and Marine World for June, pg. 318, the employes applied to the Minister of Labor for a board of conciliation, which was appointed June 10 as follows: Justice Archambault, Chairman; E. W. Villeneuve, representing the company, and J. A. Woodward, representing the men.

The Montreal Tramways Commission, which, under Quebec provincial legislation, has control of the company's expenditures, fares, etc., has been carrying large advertisements in Montreal papers to show that the wages asked are unreasonable and could not be paid without another increase in fares.

**Nova Scotia Tramways & Power Co.**—Under the provisions of an act passed by the Nova Scotia Legislature at its recent session granting the company power to increase fares, the company was directed forthwith to extend to the employes of its various departments the increased wages schedules agreed upon.

The maximum rate agreed upon for conductors and motormen is 52c. an hour, with 5c. an hour extra for operators of one-man cars. The rate of pay is to be graduated up to the maximum according to length of service. It is estimated that the increase of pay granted will add about $100,000 a year to the company's pay roll.

**Ottawa Electric Ry.**—Justice F. S. Maclennan, chairman; G. D. Kelley, representing the company, and A. E. Fripp, K.C., M.P., representing the employes, members of Division 279 Amalgamated Association of Street and Electric Railway Employes of America, met as a board of conciliation in Ottawa, May 25, and presented a unanimous report May 28. The report deals with three matters, viz., a closed shop, an 8-hour day, and wages. After hearing all that was urged by both parties the board concluded that it was not desirable that the request for a closed shop should be granted. The company has no objection to its men joining the union, but desires to leave them free to join or to remain out; it has not in the past and will not in the future discriminate against any employe who does not desire to join the union. The men have been working a nine hour day, and are being paid overtime rates for all work done in excess of that time. The service rendered to the public is between 6 a.m. and midnight, covering a period of 18 hours, and the board did not think it practicable to introduce the 8-hour day under these circumstances. Following are the rates of pay per hour for motormen and conductors, as agreed upon, compared with those in force formerly:—

| | Old. | New. |
|---|---|---|
| First year ..... | 39c. | 49c. |
| Second year . . ..... | 41c. | 51c. |
| Third year . . ..... | 43c. | 53c. |
| Fourth year and over ..... | 45c. | 55c. |

The men asked for a minimum rate of 65c. an hour. In regard to the other employes the board granted an increase of 20%. Time and a quarter is to be paid for work on Sundays and legal holidays and time and a half for all overtime.

The agreement is dated from May 1, and is to be operative until May 1, 1921, and from year to year thereafter, unless either party shall give 30 days notice to the other of a desire for a change.

**Quebec Ry., Light & Power Co.**—We are officially advised that an agreement has been made between the company and the Fraternite National des Employes de Tramways de Quebec (Union of conductors and motormen of the city street railways division, Q. R. L. & P. Co.). It is dated May 15, and is to be continued unless cancelled by either party giving the other two months notice. It provides for the recognition of the union; that the company is to engage only conductors and motormen who are members of the same; the appointment of a committee to deal with engagements, suspensions or dismissals and working conditions, consisting of two employes and two representatives of the company with a president elected by the four, who, however, has no vote; for respecting the present agreement, which does not expire until Mar. 1, 1921, and fixes a new scale of wages effective May 16. Following is the new scale of wages per hour as compared with that in operation formerly:—

| | Old. | New. |
|---|---|---|
| On appointment . . ..... | 31c. | 34c. |
| After one year service ..... | 36c. | 40c. |
| After two years service ..... | 36c. | 42c. |
| After five years service ..... | 38c. | 45c. |

The company has also entered into an agreement with the shopmen on its city division, effective June 1, and to continue in force from year to year thereafter unless 30 days written notice is given by one or other of the parties prior to each recurring May 31.

**Sarnia St. Ry.**—A press report states that there is little likelihood of a strike taking place in Sarnia, Ont., in connection with the employes' application for an increase of wages. It is stated that many of the older employes are shareholders in the company, and that they are likely to discourage a strike.

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The St. Thomas, Ont., City Council's street railway committee has recommended the submission to the ratepayers of a bylaw providing for the operation of cars on the municipal railway on Sundays.

# Another Toronto Railway Strike.

The agreement as to wages and working conditions between the Toronto Ry. Co. and its employes expired June 15, prior to which the employes union made a demand for amended working conditions in several details, and for the payment of a flat rate of 85c. an hour for motormen and conductors in place of the rates fixed in the award of the 1919 board of conciliation, viz.: First three months, 50c.; next nine months, 52½c; thereafter, 55c. and hour. The company applied for the appointment of a board of conciliation, which was granted, and the board was constituted as follows:—Justice Maclennan, Montreal, chairman; W. H. Moore, General Manager, Toronto & York Radial Ry., representing the company, and J. T. Vick, business agent Bricklayers Union, Toronto, representing the men.

The board held its first sitting June 9, and made its report June 11. The report was signed by the three members of the board. The working conditions in force were recommended by the board of conciliation of 1919, and the modifications thereof asked had reference to a number of matters, the most important being the demand for a closed shop, and the payment of overtime after 8 hours work instead of 8½. The board, after taking into consideration everything that was said by the parties, came unanimously to the conclusion that no change should be made in the working conditions.

After reviewing the conditions as to wages, particularly in cases where rates have been fixed by boards of conciliation, and conditions as to cost of living, the report said:—"Briefly stated, the result of the evidence on wages and the cost of living shows: The wages now paid are equal to or exceed those paid by any other street railway in eastern Canada. The wage increases during the past few years, going back to the commencement of the war, are fully equal to all increases in the cost of living. The amounts actually paid to motormen and conductors are wages during the last six months of 1919, and during May, 1920, show that, on an average, motormen and conductors were paid amounts equal to or averaging more than the skilled trades of the city, without taking into account uniforms and free tickets, or other advantages which the employes enjoy in the company's service. The company's franchise expires on Aug. 31, 1921, and the board was informed by the mayor that the city will take possession of the road on that date. The board, having considered all evidence and representations made to it, recommend unanimously as follows: That the working conditions and rates of pay in force since July 4, 1919, should be continued until Aug. 31, 1921, and trust that this recommendation will be accepted by all parties concerned."

On June 12, J. T. Vick, the men's representative, who had signed the award along with the other two members of the board, forwarded to the Minister of Labor a letter in which he said:—"I have been reading the award carefully and I find that I signed it under a misapprehension. I am agreeable to recommend most of the conditions as they prevailed and which have been recommended. I certainly had no idea that my signature placed me in the position of agreeing with the other two of the board on the rates of wages. I contended for an increase and am going to recommend the same. While the figures and evidence presented show that at the present time wages paid equal and exceed in some cases that paid on other roads in Eastern Canada per hour, but not per day, yet it was shown by the evidence that the wages in border cities of a like size exceed that paid in Toronto both in hourly and daily rates, Cleveland paying 75c. an hour, Detroit 75c, Chicago 65c, and the corporation of the city of Toronto paying their street railway employes from 60 to 65c. with holidays added. The amounts actually paid some motormen and conductors show that these men wrok a great deal of overtime in order to make the amounts submitted by the company, and without working overtime the men would not earn the rates paid skilled trades. That for the sake of harmony and everybody concerned I recommend that the present working conditions be continued until Aug. 31, 1921, which is the expiration of the franchise, and also recommend that in my opinion the men working for the Toronto Ry. should receive at least the same wages as paid by the City of Toronto, where there was an exhaustive investigation by the heads of the departments and the Board of Control before striking the rates named, namely: 60c. an hour for the first three months; 63c. for the next nine months; 66c. thereafter."

The employes at a meeting held after receipt of the conciliation board's report refused to accept it, and passed the following resolution, which set out:—"That we agree to accept a scale of wages 20% in advance of existing scale for all men included in the draft agreement presented to the company, which equals the rate paid by the City of Toronto, for like service; all other conditions to remain as provided in existing arrangements between the Toronto Ry. employes represented by the union and the Toronto Ry. Co." The men gave the company until June 18, at 3 a.m., to accept the terms, threatening an immediate strike if they were not conceded. As it was found impossible to hold a meeting of the company's directors within that time, the men extended the time for the acceptance of their terms to June 23 at 3 a.m. The directors met on June 22 and decided not to grant the demands and the men struck on June 23 at 3 a.m., the operation of the whole of the company's cars ceasing.

It is important to note that while the men demanded the same rate of wages as paid by the Toronto Civic Ry., they also demanded the Toronto Ry.'s working conditions, not those of the Toronto Civic Ry., and as the company pointed out in an advertisement the wages paid on the civic line, viz., 60c., 62½c. and 66c. an hour, combined with the Toronto Ry.'s extra allowance of time and a quarter for Sunday work, would be equivalent to 82½c. an hour, and combined with time and a half for overtime and holiday work would be equivalent to 99c. an hour, neither of which is paid by the city.

On June 24 the Mayor notified the Toronto Ry. that it had failed to operate its service and demanded that it resume operation. The company's General Manager replied that it was prepared to operate a service immediately, upon receiving the Mayor's assurance that efficient protection would be given, so that the lives of its employes, and its property, would not be endangered. On June 25 the Ontario Railway and Municipal Board issued the following statement:—"The Board met representatives of the company and of the men at noon, under an appointment issued at the instance of the Toronto Ry. Co. A lengthy discussion took place, and was continued until about 1.30, and a number of proposals and counter proposals were made, none of which, however, was accepted by both parties to the conference. The Board then intimated to the conference that it was prepared to make a proposal, and would do so after the adjournment for lunch. At 3 o'clock the conference resumed, and the Board submitted this proposal: 'That the wages payable to the motormen and conductors and other employes on strike should be raised to 55c., 57½c., and 60c. an hour, according to classification. This increase is approximately an increase of 10% upon the wages heretofore paid to them. These terms are to be incorporated in the form of an agreement binding on the men and on the company until the expiry of the company's franchise., The representatives of the men agreed to lay the proposal before a mass meeting of the striking employes tomorrow (June 26). If the proposal is accepted the representatives of the men are of the opinion that the cars could be started on Sunday morning (June 27). The Board assured the representatives of the men that if the proposal is accepted by the striking employes, the Board would enforce performance on the part of the company."

One June 26 the men decided, by a vote of 841 to 333, to return to work on the terms offered by the Board, and the cars resumed running on Sunday morning, June 27, after having been stopped for four days. It is said that the 5c. raise will add about $375,000 a year to the company's pay roll.

## Mainly About Electric Railway People.

Verschoyle Cronyn, who died in London, Ont., June 1, aged 88, was the promoter and principal owner of the original London St. Ry., prior to its electrification.

G. Gordon Gale, Vice President and General Manager, Hull Electric Co., has been appointed chairman of the Canadian Standards Association's sub-committee on wire strand.

Charles Johns, of Cleveland, Ohio, has been appointed Manager, St. Thomas Street Ry., by the city council of St. Thomas, Ont., at $175 a month.

A. Lacasse, heretofore private secretary to Hon. H. Seguin, of the Quebec Government, is reported to have been appointed Secretary, Montreal Tramways Commission, vice W. R. Beaudry, resigned to resume the Dorval Jockey Club's Secretaryship.

E. L. Milliken, formerly Manager, Cape Breton Electric Co., Sydney, N.S., and subsequently, successively, Manager, Houghton County Traction Co., Houghton, Mich., and Houston Electric Co., Houston, Texas, has been transferred to Stone & Webster's home office at Boston, Mass.

C. U. Peeling, who resigned his position as Manager Cornwall Street Ry., Light & Power Co., Cornwall, Ont., a few months ago, to enter the Illinois Traction Co.'s service at Peoria, Ill., has transferred to the Palmetto Power & Light Co. at Florence, South Carolina.

# Marine Department

## Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

**Steel Supplied for Shipbuilding.**—J. H. Sinclair, M.P. for Antigonish and Guysborough, N.S., asked the following questions in the House of Commons recently, the answers being given by the Minister of Marine.

"Referring to an item of expenditure described as steel for shipbuilding to be refunded by contractors, $3,283,965.05, found on page ZZ42 of the 4th volume of the Auditor General's report, has all this money been refunded?" Answer:—"Not all, because the department has not finally settled with the builders for the ships for which the steel was purchased. The balance outstanding is $289,252.10."

"If so, when?" Answer:—"By deductions from progress payments during 1918-19, $861,430.80; 1919-20, $2,133,-282.15."

**Keels Laid.**—Since Canadian Railway and Marine World for June was issued, we have been advised of the laying of the following keels for steel cargo steamships, for Canadian Government Merchant Marine Ltd:—

June 5, s.s. Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.

June 9, s.s. Canadian Racer; Marine Department contract 54; builder's yard no. 10; approximately 3,890 d.w. tons; Midland Shipbuilding Co., Midland, Ont.

**Names of Steamships.**—The Marine Department has decided on the name Canadian Harvester for the steel cargo steamship being built by the Port Arthur Shipbuilding Co., Marine Department contract 61; builder's yard no. 45; approximately 3,890 d.w. tons.

**Launchings of Steamships.**—Since Canadian Railway and Marine World for June was issued, we have been advised of the following launchings of steel cargo steamships, for Canadian Government Merchant Marine Ltd.:—

June 22, s.s. Canadian Victor; Marine Department contract 50; builder's yard no. 77; approximately 8,390 d.w. tons; Canadian Vickers Ltd., Montreal.

**Deliveries of Steamships.**—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following deliveries have been made:

June 15, s.s. Canadian Prospector; Marine Department contract 37; builder's yard no. 14; approximately 8,390 d.w. tons; J. Coughlan & Sons, Vancouver, B.C. This ship took a cargo, at Vancouver, for New Zealand and Australia.

June 15, s.s. Canadian Observer; Marine Department contract 47; builder's yard no. 66; approximately 3,990 d.w. tons; Collingwood Shipbuilding Co., Collingood, Ont. She went to Huron, Pa., for a cargo of coal for Montreal, and will take a general cargo from Montreal to Barbados, Trinidad and Demerara.

**Officers of Steamships.**—The following officers have been appointed by Canadian Government Merchant Marine Ltd. The first column contains the names of the ships, the second those of the captains, and the third those of the chief engineers.

| | | |
|---|---|---|
| Canadian Aviator | P. J.Murphy | ..... |
| Canadian Gunner | ..... | B. Rogers |
| Canadian Miner | M. Fraser | ..... |
| Canadian Navigator | W. H. Miller | J. Borland |
| Canadian Observer | D. M. Dickson | ..... |
| Canadian Prospector | H. S. Hilton | ..... |
| Canadian Raider | E. C. Sears | ..... |
| Canadian Rancher | ..... | John Still |
| Canadian Sealer | E. Randell | ..... |
| Canadian Signaller | R. D. Maxwell | ..... |
| Canadian Trapper | ..... | C. E. Thompson |
| Canadian Warrior | W. G. McConechy | R. Cook |

Regarding the appointments mentioned above, C. J. Murphy succeeds H. S. Hilton as master of the Canadian Aviator, the latter having been appointed master of the Canadian Prospector; W. H. Miller succeeds E. C. Sears as master of the Canadian Navigator, the latter having been appointed master of the Canadian Raider, succeeding Capt. Watkins; R. D. Maxwell has been appointed master of the Canadian Signaller, succeeding J. E. Faulkner, and W. G. McConechy has been appointed master of Canadian Warrior, relieving C. R. Bissett, who is on leave of absence.

### Dominion Marine Association.

**President**, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

**First Vice President**, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

**Second Vice President**, A. A. Larocque, President, Sincennes - McNaughton Line, Montreal.

**Executive Committee**, E. H. Beazley, Union Steamship Co. of British Columbia, Vancouver; W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

**General Counsel**, Francis King, M.A., Kingston, Ont.

**Official Organ**, Canadian Railway and Marine World, Toronto.

**Freight Steamships on Inland Waters.** J. E. Armstrong, M.P. for East Lambton, Ont., asked in the House of Commons recently:—"Does the government intend to place freight ships built and owned by them on our inland waters during the present season? If so, how many of said vessels will be so placed? If the Canadian Government Merchant Marine organization has the handling of the government owned ships, what reason, if any, do they give for not using some of the vessels under their control in the carrying trade on our Great Lakes?" The Minister of Railways replied:—"Ships owned by the Government through its Government Merchant Marine are being operated by that organization in connection with the Canadian National Rys., as will appear in the public interest. Cannot say at present time what ships may operate on the inland waters during present season."

**Extension of Service.**—A London, Eng., press dispatch of June 8 states that the Times financial editor indicates the institution this year by Canadian Government Merchant Marine Ltd. of further cargo service between Canadian Atlantic ports and India, Ceylon and the Far East, via the Mediterranean, and also to South Africa, and from Pacific ports to the Far East and Calcutta. This "information," which originated in Canada in April, and which was published in Canadian Railway and Marine World for May, eventually found its way into English papers, and has apparently been cabled to Canada in June as "news," with special credit to the Times financial editor for perspicacity. We have been further officially advised that the plan which is now being worked on by the C. G. M. M. management covers a service from Atlantic ports the year round to India, Ceylon, Straits Settlements and Java, the ports of call not having yet been settled, but they will be arranged in accordance with the desires of shippers whose traffic will be carried. It is also contemplated to establish a service to China, India and Singapore, but no details have been worked out. The first sailing in the first named service will be towards the end of August by the s.s. Canadian Conqueror, approximately 8,390 d.w. tons, now under construction by Canadian Vickers Ltd., Montreal.

**Australian Trade.**—C. Harlett, Assistant Canadian Trade Commissioner at Melbourne, Australia, wrote April 28:—"Already two steamships of the Canadian Government Merchant Marine, Ltd., the Canadian Raider and Canadian Importer, have arrived at Sydney and Melbourne. These ships are to be followed by the Canadian Exporter and two other ships of similar size at regular monthly intervals. The Canadian Raider departed from Newcastle for Auckland (with a cargo of coal) to load at the latter port for Eastern Canadian ports. In a few days the Canadian Importer, which has discharged her cargo of lumber, paper, etc., and is now loading cargo for New Zealand and Vancouver to her full capacity at Melbourne, will depart for Wellington and Auckland, where she will complete loading for Vancouver. Apart from filling a long felt want in the shipping facilities between Canada and Australia, these ships, in carrying cargo from the Commonwealth to New Zealand, are relieving considerable congestion existing for some time in Australian ports, and the available space is eagerly sought by shippers of Australian products to both New Zealand and Canada. Upon her arrival in Melbourne the Canadian Importer was visited by a number of prominent Australian shipping men, and most favorable comment was made upon her design, her exceptional clear holds, large hatches and powerful winches for the rapid loading and discharge of cargo."

**s.s. Canadian Inventor.**—Hon. W. L. Mackenzie King said in the House of Commons June 8: "I have a message sent on behalf of some British Columbia shippers complaining about the delay in sailing of one of the Government Merchant Marine vessels. I will ask the Minister of Marine if he can give any information in regard to the questions asked. The telegram reads: 'Information that steamship Canadian Inventor booked

freights March-April loading has not yet sailed or any indication of sailing. Shippers have had orders cancelled on them with tremendous loss. Understand that this ship held up owing to some dispute between government and contractors over painting boat which means at most few hundred dollars and in any case would not prevent ship going to sea. Owing to falling market, incompetency and delay on part of government has made tremendous loss to shippers here. Suggest you make enquiries in respect to this matter.'

The Minister of Marine replied: "At the moment I have only a slight knowledge of the matter, but I shall be very glad to give a more complete answer tomorrow. The delay is not due to anything that could be avoided by the builders. I understand it is due to the fact that a strike has existed in the shipyards at Vancouver for some time."

On June 10 the Minister said:—"As I stated the other day, one of the causes of the delay was a strike of the painters. Happily, that has been settled. I have also ascertained that J. Coughlan & Sons did not make the ship's shaft according to specifications, and therefore the inspection by Lloyd's and by one of our Marine Department inspectors has been withheld until the shafting has been adjusted. I understand this also has been attended to. The vessel is now in dry dock, owing to her having been in the water since January last. One of the clauses in the specifications provides for the docking of the vessel if the Marine Department finds that is necessary. I do not anticipate that there is anything wrong with the bottom of the ship, but inasmuch as she has to make a very long trip to Australia it was thought wise to have her docked. As far as I can judge at the moment, she ought to be ready to sail within two weeks, and probably less."

Steel Cargo Steamship Canadian Observer, approximately 3,990 d.w. tons, built for Canadian Government Merchant Marine Ltd., by Collingwood Shipbuilding Co., Collingwood, Ont.

**British American Shipbuilding Co.**, Welland, Ont., has advised us June 17, that the two sections of the s.s. Canadian Otter; Marine Department contract 44· builder's yard no. 4; approximately 4.575 d.w. tons, which were launched separately on Mar. 25, and April 13, would leave there, June 24, in tow for Montreal, to be joined together. The company also advised that the s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, will be launched early in July.

**Canadian Vickers Ltd.**, Montreal, launched the s.s. Canadian Victor; Marine Department contract 50; builder's yard no. 77; approximately 8,390 d.w. tons; June 22, the christening being performed by Mrs. J. W. Norcross, wife of the President and Managing Director, Canada Steamship Lines, and also a director of Canadian Vickers Ltd.

The Canadian Victor is the ninth steamship built by the company for Canadian Government Merchant Marine Ltd., making a total of 68,000 d.w. tons. She was built under the supervision of C. F. M. Duguid, Naval Architect, Marine Department, and W. J. Alderson, representing Lloyd's Registry of Shipping. Her dimensions are,—length over all 413 ft., beam moulded 52 ft., depth moulded 31 ft., draft loaded with 8,400 tons of cargo, 25¼ ft. She is equipped with triple expansion engines and 3 Scotch boilers with Howden's forced draft. The machinery for handling cargo is fully up-to-date, the cargo winches and windlasses being of Clarke-Chapman design, and the steering gear of the Hastie Wilson-Pirrie type, all manufactured by Canadian Vickers Ltd. The steering is arranged from the navigating bridge by a telemotor of the MacTaggart-Scott type, and there is also a hand steering gear on the poop deck, and the usual complement of mechanical engine room and steering telegraphs, wireless, etc. The accommodation for officers and crew is very complete, and there are two spare cabins and a smoking room for passengers. The engine room equipment includes the Contraflo system of condensing and G. & J. Weir's pumps and other auxiliaries. Refrigerating machinery is being fitted in no. 3, 'tween decks, which will be insulated in the usual manner for perishable cargo.

**Collingwood Shipbuilding Co.**, Collingwood, Ont., delivered the s.s. Canadian Observer, Marine Department contract 47; builder's yard no. 66; approximately 3,990 d.w. tons; for Canadian Government Merchant Marine Ltd., June 15, and laid the keel for the s.s. Canadian Rover, Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons, for Canadian Government Merchant Marine Ltd., June 5.

The s.s. Canadian Observer's trial runs gave the following results:—Duration of full speed trials, 6 hours; mean speed on 6 runs over measured miles, 11.783 knots; indicated horse power 1,450.

**J. Coughlan & Sons**, Vancouver, B.C., delivered the s.s. Canadian Prospector; Marine Department contract 37; builder's yard no. 14; approximately 8,390 d.w. tons, to the Marine Department and she was transferred to Canadian Government Merchant Marine Ltd. June 15.

The s.s. Canadian Prospector, which underwent her trial trips early in June, maintained an average of 12.6 knots.

**Halifax Shipyards Ltd.**, Halifax, N.S., which is building four steel cargo steamships for Canadian Government Merchant Marine, two of approximately 8,390 d.w. tons each, and two of approximately 10,500 d.w. tons each, expected to launch the first one, Canadian Mariner; Marine Department contract 21; builder's yard no. 1, on June 21, but advised us June 19 that no work had been done in its yard since June 1, the employes having struck.

**Harbour Marine Co.** advised us June 4 that the s.s. Canadian Winner, Marine Department contract 29; builder's yard no. 1; approximately 8,390 d.w. tons, would probably be launched on June 29; and that the s.s. Canadian Traveller; Marine Department contract 30; builder's yard no. 3; approximately 8,390 d.w. tons, would probably be launched about six weeks later. The company states that these are the first steel ships to be built in Victoria, and that nearly all the work on them is being done by returned soldiers, the company employing over 85% of ex-service men and the remaining 15% including boys.

A deputation of the Harbour Marine Co.'s workmen, who went to Ottawa recently, to urge the Minister of Marine to give the company further contracts for steel cargo steamships for Canadian Government Merchant Marine Ltd., was informed that no more orders would be placed.

**Midland Shipbuilding Co.**, Midland, Ont., laid the keel for the s.s. Canadian Racer; Marine Department contract 54; builder's yard no. 10; approximately 3,990 d.w. tons, for Canadian Government Merchant Marine Ltd., June 9.

**Port Arthur Shipbuilding Co.**, Port Arthur, Ont., expected to launch the s.s. Canadian Carrier; Marine Department contract 33; builder's yard no. 44; approximately 4,350 d.w. tons, about May 30, but, owing to a strike on May 15, which lasted until June 8, the launching was delayed, and we were advised on June 16 that it would probably take place on June 26.

**Tidewater Shipbuilders Ltd.**, which is building two out of the four steel cargo steamships, of approximately 5,100 d.w. tons each for which it has contracts from the Marine Department, expected to launch the s.s. Canadian Fisher; Marine Department contract 15; builder's yard no 7, in June, and the s.s. Canadian Forester; Marine Department contract 16; builder's yard no 8, in July, advised us June 16 that the launching of the Canadian Fisher had been delayed, owing to lack of steel for 'tween decks.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with the finally ascertained deadweight tons multiplied by the price per ton, the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4,575 | $207. | $ 948,660.75 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " " | 67 | *8,408 | 180. | 1,519,459.99 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbldg. Co., C'wood. | 61 | *3,595 | 205. | 819,385.58 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd. | 100 | *4,495¾ | 207. | 930,620.25 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | *4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9, 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbldg. Co., C'wood. | 62 | *3,964 | 205. | 813,252.07 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Jan. 3, 1919 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | *3,975¼ | 205. | 814,926.25 | Lake, s.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | *3,978¼ | 205. | 815,514.25 | Lake, s.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | Dec. 27, 1919 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | ..... | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 11, 1919 | Oct. 9, 1919 | ..... |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Mar. 28, 1919 | May 7, 1920 | ..... |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbullding Co. | 39 | *3,341 | 205. | 686,762.88 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 9, 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3,408 | 210. | 715,652.49 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | *3,357 | 205. | 690,409.84 | Lake, s.d., p., b. and f'c's'le | " | 9 | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3,405 | 210. | 715,649.13 | Lake, s.d., p., b. and f'c's'le | " | 9 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | *4,581 | 215. | 984,915 | S.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18, 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8,382 | 188. | 1,575,816.00 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1,587,643.15 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | *8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8,393 | 188. | 1,589,700.00 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8, 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | *8,393.3 | 188. | 1,579,068.40 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Winner | Harbour Marine Co. Ltd. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | ..... | ..... |
| 30 | Jan. 24, 1919 | Canadian Traveller | " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,750 | 205. | 768,750 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | May 11, 1920 |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,350 | 215. | 935,250 | S.d., p., b and f'c'c'le | " | 11 | Aug. 29, 1919 | May 8, 1920 | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,350 | 215. | 935,250 | S.d., p., b and f'c's'le | " | 11 | Aug. 29, 1919 | ..... | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | *8,381 | 198. | 1,659,438 | 2.d., p., b and f'c's'le | Lloyd's | 11 | Apr. 26, 1919 | Dec. 6, 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | *8,380 | 198. | 1,659,240 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | Mar. 6, 1920 |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan. 24, 1920 | ..... |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | Feb. 24, 1920 | June 15, 1920 |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 6. 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | *2,776½ | 210. | 583,065 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8, 1919 | Dec. 20, 1920 |
| 41 | Mar. 31, 1919 | Canadian Miner | " " | 6 | *2,778 | 210. | 583,380 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | Apr. 3, 1920 | May 7, 1920 |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | Bri. Corp. | 10 | Mar. 29, 1919 | Apr. 13, 1920 | ..... |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4,575 | 215. | 983,625 | S.d., p., b. and f'c's'le | " | 10 | July 14, 1919 | ..... | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbldg. Co., C'wood. | 65 | 3,990 | 180. | 718,200 | Lake, s.d., p. b., and f'c's'le | Lloyd's | 11 | Sept. 3, 1919 | Dec. 27, 1919 | Apr. 28, 1920 |
| 47 | Sept. 11, 1919 | Canadian Observer | " " | 66 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | May 8, 1920 | June 15, 1920 |
| 48 | Sept. 2, 1919 | Canadian Pathfinder | Dominion Shipbuilding Co. | 10 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | June 22, 1920 | ..... |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | Jan. 17, 1920 | ..... | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 54 | Feb. 26, 1920 | Canadian Racer | Midland Shipbuilding Co. | 10 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 11 | June 9, 1920 | ..... | ..... |
| 55 | Mar. 18, 1920 | Canadian Highlander | Wallace Shipyards Ltd. | 103 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 56 | Mar. 18, 1920 | Canadian Skirmisher | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 57 | Mar. 13, 1920 | Canadian Rover | Collingwood Shipbldg. Co., C'wood. | 67 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 58 | Mar. 13, 1920 | Canadian Coaster | Collingwood Shipbldg Co., Kingston | 16 | 3,890 | 185.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | " | 11 | May 6, 1920 | ..... | ..... |
| 59 | ..... | ..... | Nova Scotia Steel & Coal Co. | 8 | 2,800 | 190. | 532,000 | 2.d. p., b. and f'c's'le | " | 8½ | May 4, 1920 | ..... | ..... |
| 60 | Feb. 2, 1920 | Canadian Challenger | Davie Shipbuilding & Repairing Co. | 476 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 61 | Feb. 26, 1920 | Canadian Harvester | Port Arthur Shipbuilding Co. | 45 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b, and f'c's'le | " | 11 | Mar. 30, 1920 | ..... | ..... |
| 62 | Aprll 7, 1920 | Canadian Transporter | J. Coughlan & Sons | 20 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 63 | April 7, 1920 | Canadian Freighter | " | 21 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 383,519 | | $72,890,476.03 | | | | | | |

# Senate Committee Report on the Hudson Bay Route and Ports.

The special committee appointed by the Senate to take evidence and report upon the navigability and fishery resources of Hudson Bay and Strait, and of the character of the ports of the bay with regard to their fitness as railway terminals, reported on June 9, over the signature of the chairman, Senator G. W. Fowler. Following are the principal portions of the report:—The committee examined 21 witnesses, drawn from all parts of the country. It had in view acquiring information on the following points:—1. The length of the season during which the bay and strait are reasonably navigable having in view the presence of ice, the occurrence and persistence of snow storms, the advantages to be gained by aids to navigation such as wireless telegraphy, light houses, fog signals and hydroplanes. 2. The style and size of ships to be used for the carrying trade. 3. The relative merits of the two ports, Nelson and Churchill, and the relative cost of the development of each. 4. The fishing resources of the bay and strait and of the rivers emptying into the bay. 5. The mineral resources of the country tributary to the bay. 6. The utilization of the country for the production of meat and furs to be obtained from reindeer and musk ox, which would subsist upon the extremely nutritious grasses grown throughout that part of the country.

A large number of witnesses were called with respect to the length of the season during which the bay and strait can be safely navigated. There was some variation among them regarding the length of the season of navigation, but all agreed that the minimum would under ordinary circumstances be at least four months, while the maximum would not likely exceed five months. Voyages have been made through the strait as early as June 5, and as late as the first part of November, with the ordinary type of ship, without meeting any difficulty, but these were admittedly rather exceptional cases. All were agreed, however, that modern navigating appliances, such as lighthouses, wireless stations, hydroplanes and fog signals, would greatly facilitate navigation in these waters and in a large measure overcome the natural difficulties from ice and snow. In order that the route would be able to compete with the more southerly channels of communication between this country and Europe, it would be necessary to have a type of freighter capable of carrying from 5,000 to 10,000 tons of dead weight, and in the committee's opinion, from the evidence adduced, there would be no difficulty in handling so large a ship on the route, provided it was properly strengthened and protected in the forward part. Of course, heretofore only ships of smaller size have been used, because ships of larger capacity have not been required.

The concensus of opinion is that Hudson Bay remains open all the year through and that the ice does not extend beyond 30 or 40 miles from the shore. The strait is also open for the greater part of the year, and would probably be open all the time, except for the ice which comes down late in the autumn from Fox Channel, and obstructs navigation in the strait. It was generally conceded by the eight witnesses who gave evidence on this point that the aids to navigation which might be installed along the strait would greatly facilitate the passage and considerably extend the season of navigability.

The committee took a large amount of evidence regarding the relative merits of the two western ports, Churchill and Nelson, and there was a considerable divergence of opinion among the different witnesses as to which of the two should have been selected, having in view the shorter railway haul in the one case and the cheaper construction of the port itself in the other. Churchill was shown to be an absolutely land locked harbor, entirely protected from every wind, no matter from which quarter it should blow, where a few ships could at all times ride at anchor in perfect security. Nelson, on the other hand, has no natural protection from the sea, except such as it receives by reason of its remoteness from the body of the sea, there being a 20 mile stretch of shallows between it and deep water. A narrow channel bordered by wide shallows connects the proposed harbor of Nelson with the open bay. A very large amount has already been expended upon the harbor improvements of Nelson, but a much larger sum is still required before the present plans can be carried out. There seems to be considerable doubt, whether or not, even when the proposed plans are completed, the harbor at Nelson will be an entirely safe one against an easterly gale. To utilize Churchill it would be necessary to build about 80 miles of road across a country which has been described by one witness as very difficult, it having a stretch of 30 miles of morass almost impossible to cross, owing to the difficulty of getting a firm foundation for a roadbed. This was, however, denied by two witnesses, by each of whom the committee was greatly impressed. Both J. B. and J. W. Tyrell testified that there is a perfectly good and comparatively short route from the present route, deflecting at a point some 56 miles from Nelson and going north and east to Churchill. The present harbor of Churchill is rather small, but, accordingly to the evidence of the Messrs. Tyrell, uncontradicted, could easily be enlarged enough to accommodate all the trade likely to offer for many years to come. Beyond the present deep water harbor there is a large basin of shallow water, the bottom of which is composed of hard clay mixed with boulders, which could be easily dredged and the resultant harbor would be of its size one of the finest in the continent. The Tyrell brothers are very familiar with the country around Hudson Bay, having spent several years each in research and in examination of these regions. J. W. Tyrell spent one winter at a station in Hudson Strait taking observations for the Canadian Government, and also looked over the country from Pas to Churchill, on behalf of a company who had some intention of building a railway in that part of the country, a scheme which was afterwards abandoned. He had no hesitation in saying that no difficulty whatever would be found in extending the railway to Churchill. It is the committee's opinion that the government would be well advised if, before expending any more money on the harbor works at Nelson, they were to appoint a committee of expert engineers and railway builders to examine the route to Churchill and ascertain whether or not it is really possible, as the Messrs. Tyrell say, and what would be the cost and advantage of making Churchill the port and terminus of the Hudson Bay Ry. rather than Nelson. In the meantime, the laying of the rails could be completed to Nelson, and that port could be used for the present in its present state.

While no one was able to speak with certainty as to whether cod fish are plentiful in the bay or not, there is no doubt as to the strait. All the rivers flowing into the bay teem with fish, and walrus and seal are also found in large numbers in the strait. No doubt as soon as the Hudson Bay route is established, a very large and lucrative fishing industry will be established there. Recent discoveries have shown that the country surrounding Hudson Bay is strongly and richly mineralized, particularly so in regard to gold and copper.

Mr. Stefansson, the distinguished Polar explorer, gave evidence before the committee. He is a devout believer in the possibility of utilizing what have always been known as the Barren Lands of the north, and the islands within the Arctic Circle, in the cultivation of reindeer, cariboo and musk ox for the production of meat. He gave evidence as to the splendid quality of the flesh of these animals as food for the people, and as to the cheapness with which it might be produced. He said that the wild lands of the north, which have always been looked upon as worthless, could carry at least 50,000,000 reindeer and 10,000,000 musk ox, and that the cost of handling these huge numbers would be trifling in comparison with the profit to be made. The effect of this upon the world's food supply would be tremendous, and the committee strongly recommend that the matter be energetically taken up by the government.

The committee makes the following findings upon the evidence adduced before it:—

That the Hudson Bay route is feasible and will, probably, in time, be profitable.

That the season of navigation under present conditions is at least four months in length, and may, by improvements in aids to navigation, be considerably increased.

That sufficient care was not taken in the selection of Nelson as the terminus of the railway, and that the government should not make further important expenditures upon this port without first making a new and thorough examination into the relative merits of Churchill and Nelson as a terminus for the railway.

That the waters of the strait and rivers tributary to the bay teem with fish and valuable marine animals, and we believe that the bay is equally well stocked, but there has not yet been sufficient data collected as to the extent of the fisheries of the bay to enable an authoritative statement to be made as to their prospective value.

That the mines already discovered in the Hudson Bay district are of sufficient number and richness to indicate the existence of great potential mineral wealth.

The committee feel that they cannot too strongly endorse the valuable suggestion of Mr. Stefansson as to the cultivation of reindeer and musk ox, and urge upon the government that the Interior Department be empowered to take hold of this matter, earnestly taking advantage of what has been done in this regard by the United States Government.

After considerable debate the report was adopted by the Senate June 18, on a division.

# General Shipbuilding Matters Throughout Canada.

**B.C. Marine Ltd.**, Vancouver, B.C.—As mentioned in our last issue, this company is building an auxiliary powered schooner for the Hudson's Bay Co. She will be rigged as a three masted bald headed schooner, with jib headed mizzen and top sail for running purposes, and will carry a large square sail forward, and will also be fitted with a triangular shaped top sail. The total area of fore and aft sails will be about 10,960 sq. ft., and the approximate total of all sails will be 15,610 sq. ft. She will also be equipped with a 350 b.h.p. semi-Diesel engine, for a speed of about 7 knots an hour. Her dimensions will be,—length over all 200 ft., length l.w.l. 188½ ft., beam 36 ft., moulded depth 15 ft., draft loaded 12 ft., deadweight for freight 700 long tons.

**B.C. Yacht & Boatbuilders Co.**, Victoria, B.C.—The Dominion Marine Department has accepted this company's tender for building 2 motor patrol boats for British Columbia coast patrol service, at a total price of $62,750. The approximate dimensions are,—length over all 75 ft., breadth 17 ft. 8 in. Each boat will be equipped with heavy oil engine of the semi-Diesel type of 100 h.p.

**British Empire Shipbuilding Corporation Ltd.** has been incorporated under the Dominion Companies Act, with $100,000 authorized capital, and office at Montreal, to build, own and operate steam and other ships, steamship and railway terminals, dry docks, shipyards, etc., and to conduct business in Canada and elsewhere.

**Canadian Concrete Shipbuilding Co.**, North Sydney, N.S.—The concrete motor ship Permanencia was launched by this company in May. She was built under Lloyd's special survey for the highest rating. The hull was practically complete and ready for launching in Dec., 1919, but a fire on board caused damage which necessitated a prolonged delay. She will have a deadweight capacity of from 450 to 500 tons, and sleeping accommodation for 10 passengers in addition to the crew. She is being equipped with a Bolinder crude oil engine of 240 b.h.p., for a speed of from 9 to 10 knots an hour, supplied by the Swedish Steel & Importing Co., Montreal. When completed, she will be operated between Cape Breton, Prince Edward Island and Newfoundland ports.

**Canadian Vickers Ltd.**, Montreal, launched the s.s. Loch Tay, at the end of May, for Norwegian owners. She is a sister ship of the Tatjana, the launching of which was announced in our last issue. Her dimensions are,—length over all 413 ft., breadth 52 ft., depth 31 ft. 0⅞ in., draft when loaded with 8,300 tons of cargo, 25 1/3 ft. She is classed in Norwegian Veritas, and is equipped with triple expansion engines and 3 Scotch boilers fitted with forced draft. The cargo handling equipment, etc., which is of the latest type, is all made by the company.

**K. Cochrane**, Port Greville, N.S., launched the schooner Frederic H., 425 tons, June 5, for the lumber trade.

**Collingwood Shipbuilding Co.**, Collingwood, Ont., advised us June 9 that the 650 d.w. tons ship, which it is building for Standard Oil Co., was then completely plated, and would be launched in July.

**Collingwood Shipbuilding Corporation**, Ltd., has been incorporated under the Dominion Companies Act, with $100,000 authorized capital, and office at Montreal, to build, operate and charter steamships of all kinds, dry docks, shipbuilding yards, etc., to take over any existing business, which it is authorized to do and to carry on its business in Canada and elsewhere.

**J. Coughlan & Sons, Ltd.**, Vancouver, B.C., launched the s.s. Margaret Coughlan May 18 for Western Canada Steamships, Ltd., a subsidiary of the building company. She is of the standard 8,800 ton type, steel cargo steamship, of the following dimensions,—length over all 427 ft., breadth moulded 54 ft., depth moulded 29¾ ft., and she is equipped with triple expansion engines, with cylinders 27, 44 and 73 in. diam. by 48 in. stroke, supplied with steam by boilers equipped for burning oil fuel. She has been chartered to carry railway ties from British Columbia to Great Britain. This is stated to be the first steel cargo steamship built in Vancouver, for Vancouver interests, and to sail from that port.

Hull 16, which was under construction for Vancouver Steamships Ltd., one of the company's subsidiaries, has been sold to J. A. Sturrock, for Swedish interests. She is of a similar type to the s.s. Margaret Coughlan, and it is expected that she will be delivered about the end of July.

**Davie Shipbuilding & Repairing Co.**, Lauzon, Que.—A wooden steamship, one of 12, of 1,500 tons d.w. each, ordered last year by the Anderson Co., New York, for the French Government, was launched at this yard June 3, and christened Aubernale. Her dimensions are,—length over all 204½ ft., length between perpendiculars 195 ft. 8 in., beam moulded 39 ft. 8 in., beam extreme 40½ ft., depth moulded 17 ft., depth of hold 15 ft., draft loaded 16 ft. The hull is of Douglas fir, and the propelling machinery consists of 2 vertical inverted direct acting compound surface condensing engines, with cylinders 12 and 24 in. diar. by about 16 in. stroke, turning outboard when going ahead, developing about 275 i.h.p. at 175 r.p.m.

**Dominion Shipbuilding Co.**, Toronto, launched the s.s. Gonzaba, June 19, for the Gulf Navigation Co., New Orleans, La. The christening was performed by Miss Abaunza, daughter of the owning company's President and General Manager. The ship was designed for ocean service to carry approximately 2,550 d. w. tons, and has the following dimensions,—length over all 261 ft., length between perpendiculars 251 ft., breadth moulded 39½ ft., depth moulded 19 ft. 4 in. She is classed to Lloyd's 100 A1, and equipped with triple expansion engines 950 h.p., and 2 Scotch boilers supplying steam at 180 lbs. A sister ship is under construction for the same company, to be named Floraba, and it is expected she will be launched early in July.

**Steamship Capilano, built recently for Union Steamship Co. of British Columbia, to run between Vancouver, and way ports, to Powell River, B.C.**

**Foundation Co.**, Victoria, B.C. — This company's shipbuilding interests in B.C. are being closed up, and the shipbuilding plant and machinery at the Point Hope and Point Ellice yards are reported to have been sold to private interests. The leases on the yards expired at the end of June. During the war, the company built several wooden steamships for the British Government, under orders from the Imperial Munitions Board, and also built a number of wooden steamships for the French Government, which latter order was completed recently. The Point Ellice yard was operated formerly by Cameron-Genoa Mills Shipbuilders, Ltd., and the land, in both cases, forms part of the old Songhees Indian Reserve, and was leased from the B.C. Government.

**Harbour Marine Co.**, Victoria, B.C.—The steel car ferry tow barge, which this

company is to build for the C.P.R., will cost approximately $200,000. Her dimensions will be, length 270 ft., beam 42 ft., depth moulded 12 ft. She will have a single deck, equipped with three tracks for 18 standard railway cars. When completed she will be placed in service between the mainland and Vancouver Island.

B. M. Melanson, Gilberts Cove, N.S., is building a steamship of the following approximate dimensions,—length over all 150 ft., length on keel 127 ft., breadth 28 ft., depth 11 ft., and approximately 600 d.w. tons. She will be fitted with triple expansion engines with cylinders 12, 19 and 30 in. diar. by 20 in. stroke, 450 i.h.p., suppled with steam by a Scotch boiler at 150 lb., to be supplied by the New Burrell Johnson Iron Co. The ship is being built for general freighting work, but can easily be adapted for sealing. The deck machinery will include powerful steam winches, windlasses, etc., and she will be equipped with all the necessary derricks, etc., for handling cargo.

Nova Scotia Shipbuilding & Transportation Co., Liverpool, N.S., launched the tern schooner Olive Moore, June 5. Her dimensions are,—length 136 ft.; breadth 25 ft.; depth of hold 11 ft. She is owned by J. & S. Moore, St. John's, Nfld.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—After a strike lasting about three weeks, the employes returned to work at the old scale and conditions, June 10. It is stated that the number of employes is at present somewhat less than before the strike, one report stating that only 50% of the men returned at the old rate. When the strike occurred, the management stated definitely that it was absolutely impossible, under existing conditions, to make any increases in pay, or changes in the working conditions, and that if the men ceased work, the plant would have to be closed down.

Port Arthur Shipbuilding Corporation Ltd. has been incorporated under the Dominion Companies Act, with $100,000 authorized capital, and office at Montreal, to own and operate steamships, dry docks, shipbuilding plants, etc., and to carry on its business in Canada and elsewhere.

St. John Dry Dock & Shipbuilding Co.'s annual meeting was held at St. John, N.B., June 8. The directors are: James Playfair, Midland, Ont., President; D. S. Pratt, Midland, Ont., Vice President and Managing Director; Thomas A. Duff, Toronto, Secretary-Treasurer; D. L. White, Jr., Midland, Ont.; W. E. Phin, Hamilton, Ont.; W. J. Sheppard, Waubashene, Ont.; J. B. Craven, New York. It was announced at the meeting that the company had bought the 24 in. hydraulic dredge Tornado of Canadian register, for work in the St. John harbor.

Victoria (B.C.) Shipowners Ltd., Victoria, B.C.—Considerable progress is reported on the construction of the first of the four wooden barkentines of 2,400 tons each, which are being built at the Cholberg shipyard, under Dominion Government aid. The keel of the first was laid May 1. Thos. McConkey, of the Dominion Marine Department, Ottawa, has been appointed to act as the naval architect in connection with these ships, on the government's behalf.

About the middle of June it was reported that there was some delay in construction work, owing to delayed delivery of certain special lumber, but it was expected that this would be overcome within a few days. Keels for three of the ships have been laid and the first frames are in on hull 4 with the stern posts set.

## Act to Amend the Canada Shipping Act (Steamboat Inspection).

A bill introduced in the House of Commons by the Minister of Marine was passed by the House April 28, its provisions being as follows:—

The Canada Shipping Act, Revised Statutes of Canada, 1906, chap. 113, sec. 578, is repealed, and the following is substituted therefor:—

"578. The Governor in Council may make rules and regulations,—

"(a) for the testing of boilers and all matters connected with the construction and working thereof;

"(b) for the inspection of safety valves and boiler cocks and all matters connected with the construction and working thereof;

"(c) for the inspection of hulls and equipment of steamboats;

"(d) respecting boats and life-preservers, fire-buckets, axes and lanterns and other life-saving appliances to be carried by steamboats or by other vessels mentioned in this part;

"(e) respecting the qualifications necessary to entitle a person to an engineer's certificate;

"(f) requiring steamboats to carry chemical or other fire extinguishers, and prescribing the number of such fire extinguishers to be carried by steamboats of different sizes and classes, respectively;

"(g) for the inspection of the machinery and equipment of steamboats propelled by gas, fluid, naphtha, electricity, or any other chemical, or any mechanical power, and, in the case of such vessels, for making such changes in forms S and T as he deems advisable;

"(h) for the establishment of a scale of fees and the collection thereof, for examining plans of the hulls, boilers and machinery and equipment of steamboats; for the inspection of steamboats, their machinery and equipment, during construction, and for such like examinations or inspection in connection with the Steamboat Inspection Service."

The Canada Shipping Act, sections 643 and 644, are repealed, and the following are substituted therefor:—

"643. (1) The Governor in council may from time to time fix a duty to be paid yearly and every year by the owner or master of every steamboat registered in Canada.

"(2) The amount of such duty shall in each case be paid at such times and in such manner and to such officers as the Governor in council may direct, and such duty shall be paid into the Consolidated Revenue Fund of Canada.

"644. (1) No inspector shall make or deliver a certificate respecting any steamboat under this part, unless,—

"(a) it is established to his satisfaction that the fees and duty payable in respect to such steamboat for the current year have been paid; and,

"(b) he is satisfied by careful examination that all the conditions and requirements of this part and of any regulation made thereunder have been fulfilled and complied with in respect to such steamboat.

"(2) Every inspector shall report to a chief officer of Customs any case of omission to pay such fees or duty, or of any omission to apply for such inspection as aforesaid, for more than one year from the date of the last inspection, or of any refusal to submit to inspection at any time which in any way or at any time comes to his knowledge."

**Proposed Government Aid to Shipbuilding.**—A deputation consisting of about 40 representatives of shipbuilding companies in the Maritime Provinces, Quebec, Ontario and British Columbia, waited on the Dominion Government at Ottawa, June 10, to urge government aid to shipbuilding in Canada. Two proposals are reported to have been made, one that the government grant a subsidy of $10 a displacement ton, and $10 per i.h.p., and another that the government assist the trade by financing foreign shipbuilding contracts. It was stated that a very large shipbuilding contract from a foreign country had actually been offered, provided that the government assist in the financing during the present adverse conditions of exchange. The foreign country concerned, it was said, was willing to put up a large proportion of the amount involved. The Premier promised that the proposals would be given the government's best consideration.

**Transportation of Stock and Feed.**—The further supplementary estimates, passed by the House of Commons recently, contained two items for transportation of stock and feed under Governor General's warrants as follows:—Aug. 23, 1919, $375,000; Nov. 24, $25,000.

Alberta Motor Boat Co., Edmonton, Alta., is building a 40 ft. schooner, equipped with 12 h.p. auxiliary engine, for use on northern waters. It is also building 2 gasoline boats for northern oil exploitation by Imperial Oil Ltd.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during May, 1920:

| Articles | | Canadian Canal | U.S. Canal | Total |
|---|---|---|---|---|
| Lumber | Eastbound | M. ft. B.M. 4,082 | 8 888 | 12,970 |
| Flour | " | Barrels 322,830 | 336,080 | 658,910 |
| Wheat | " | Bushels 2,435,728 | 11,062,267 | 13,497,995 |
| Grain, other than wheat | " | Bushels 4,347,845 | 7,557,097 | 11,904,942 |
| Copper | " | Short tons 1,903 | 2,755 | 4,658 |
| Iron Ore | " | Short tons 243,667 | 6,440,153 | 6,683,820 |
| Pig Iron | " | Short tons ..... | ..... | ..... |
| Stone | " | Short tons 14,325 | 2,700 | 12,025 |
| General Merchandise | " | Short tons 4,039 | 7,602 | 11,641 |
| Passengers | " | Number 352 | 171 | 523 |
| Coal, soft | Westbound | Short tons 31,900 | 499,476 | 531,375 |
| Coal, hard | " | Short tons ..... | 202,000 | 202,000 |
| Iron Ore | " | Short tons ..... | 22,064 | 22,064 |
| Manufactured Iron and Steel | " | Short tons 1,077 | 13,697 | 14,774 |
| Salt | " | Short tons 1,570 | 9,620 | 11,190 |
| Oil | " | Short tons 1 | 53,045 | 53,046 |
| Stone | " | Short tons ..... | 48,573 | 48,573 |
| General Merchandise | " | Short tons 26,974 | 27,378 | 54,352 |
| Passengers | " | Number 565 | 49 | 614 |
| Summary | | Number 665 | 1,646 | 2,311 |
| Vessel Passages | | Net 969,295 | 6,305,167 | 7,274,462 |
| Registered Tonnage | | | | |
| Freight—Eastbound | | Short tons 465,246 | 7,018,590 | 7,483,836 |
| Westbound | | Short tons 61.522 | 875,852 | 937,374 |
| Total Freight | | Short tons 526.768 | 7,894,442 | 8,421,210 |

# Dominion Government Aid for Shipbuilding.

On motion of the Finance Minister, Sir Henry Drayton, the House of Commons went into committee of the whole on June 21, to consider the following proposed resolution:—

"1. That it is expedient to bring in a measure to provide that in any case where a person (hereinafter called the 'purchaser') has entered into a contract with a shipbuilder for the building in Canada of a vessel of not less than 3,000 tons, and such contract is approved by the Minister of Finance and Marine, and a sum not less than 10% of the price of such vessel is paid by the purchaser to the shipbuilder in cash at the time the contract is entered into, and, if such cash payment is less than 20% of such price, the payment to the shipbuilder of a further sum which with the said cash payment will amount to not less than 20% of such price, not later than six months after such time, and the payment of a further sum not later than nine months after such time, if the previous payments are less than 25% of such price, which will be sufficient with the other said payments to amount to at least 25% of the total of such price are contracted for and secured to the satisfaction of the Minister of Finance, and the payment of an additional 25% of the price is arranged between the purchaser and the shipbuilder, the Governor in council may authorize the Minister of Finance to endorse on behalf of His Majesty promissory notes drawn by the purchaser in favor of the shipbuilder for the remaining 50% of the price of the said vessel. The Governor in council shall prescribe the place where such notes shall be paid, the method of discounting them, and the time when such notes are to be paid. Provided that the first of such notes shall be made payable at a date not less than 21 months after the time the contract was entered into, and the last of such notes shall be made payable at a date not later than 57 months after such time.

"2. That a mortgage on the vessel for the full amount of the notes so endorsed by the Minister of Finance, in such form as the Minister of Justice may approve, shall be given to His Majesty, and the said vessel shall be registered in Canada, and the register shall not be transferred, until the amount secured by the mortgage has been fully satisfied and paid.

"3. That until the amount secured by the mortgage is fully satisfied and paid, the vessel shall be insured and kept insured in favor of His Majesty for such amount and against such risks and in such insurance companies as the Minister of Finance may determine.

"Provided that if the vessel is being built for an alien, and the provisions above mentioned with respect to mortgaging the vessel cannot conveniently be complied with, such security for the amount of the said promissory notes endorsed by the Minister of Finance shall be furnished by the purchaser as may be approved by the Governor in council."

The resolution was discussed at length, a number of Liberal members, and Hon. T. A. Crerar, leader of the farmer's group, opposing it. A notable exception was Jacques Bureau, M.P. for Three Rivers, Que., who strongly supported it. Finally it was carried on a division, reported and concurred in, and Sir Henry Drayton then introduced bill 199, based on it, which was read a first time. The bill was read a second time on June 24, and referred to committee of the whole, when a number of Liberal members again opposed it, but two Liberals, P. R. Du Tremblay, of Laurier-Outremont, Que., and T. Vien, of Lotbiniere, Que., joined Jacques Bureau in supporting it. W. Duff of Lunenburg, N.S., moved two amendment, one to give aid to the building of wooden as well as steel ships, and to strike out the tonnage minimum; the other to keep the ship on which the loan is made, on the Canadian register until the debt is discharged. The first amendment was defeated by 42 to 18, and the second amendment was defeated on a division. Sir Henry Drayton moved an amendment, which was carried, as follows: "The whole amount that notes may be endorsed on behalf of His Majesty, as herein provided, shall not exceed $20,000,000." The bill was then passed by the committee without further amendment, and on June 25 was read a third time and passed.

It is said that the Government's action will result in sufficient foreign business coming to Canada to keep the shipyards busy for from two or three years. France has been in the market for a large number of steel cargo steamships for some time, but it has been impossible to arrange for credits, and in addition to this the conditions of exchange have prevented orders being placed. It is now said that a credit association, in connection with which Sir Henry Pellatt's name is mentioned, has been formed, and has arranged to secure money in the United States to help to finance the business.

## Steamship Northumberland Transferred from Atlantic Coast to Lake Ontario.

The s.s. Northumberland, owned formerly by the Charlottetown Steam Navigation Co., Charlottetown, P.E.I., and for several years operated between Prince Edward Island and the New Brunswick mainland, and which was sold to the Dominion Government when the company ceased business in 1916, since which she has been operated at intervals in the same service by the Railways and Canals Department, has been transferred to service on Lake Ontario, between Toronto and Port Dalhousie, and is being operated by Canadian National Rys. in conjunction with the Niagara, St. Catharines & Toronto Ry. The Northumberland was built at Newcastle-upon-Tyne, Eng., in 1891, has a steel hull, and is screw driven by engine of 350 h.p. Her dimensions are,—length 220 ft., breadth 33.1 ft., depth 20.4 ft., tonnage 1,255 gross, 542 net. After being brought from Cape Tormentine, N.B., where she had been berthed, to Toronto, she went to the Dominion Shipbuilding Co.'s yard, where a passenger stairway was put in and some other minor alterations made. It is said that further alterations will be made after this year's navigation closes.

The service by the steamships Northumberland and Dalhousie City was put into effect June 18, and is run on daylight saving time, leaving Toronto on weekdays at 8 a.m., 2 p.m. and 5 p.m., and Port Dalhousie at 8.30 a.m., 11 a.m. and 7 p.m., and on Sundays, leaving Toronto at 8 a.m., 2 p.m. and 7 p.m., and Port Dalhousie at 9.30 a.m., 11 a.m. and 7 p.m.

## Vessels Registered in Canada During March, 1920.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing vesses of less than 100 tons register.

STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|
| 141256 | Bernard M | Yarmouth, N.S. | Wedgeport, N. S. 1919 | 143.1 | 26.3 | 12.4 | 370 | 194 | 66 Sc. | Wedgeport Steam Trawling Co., Wedgeport, N.S. |
| 141703 | Canadian Exporter | Vancouver, B.C. | Vancouver, B.C. 1919 | 400.1 | 52.4 | 28.8 | 5498 | 3385 | 133 Sc. | Minister of Marine and Fisheries, Ottawa. |

SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Tons Reg. | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141632 | Clara B. Creaser | La Have, N.S. | Schr. | Shelburne, N.S. 1920 | 127.1 | 26.6 | 10.4 | 172 | 114 | H. Creaser, M.O., Riverport, N.S. |
| 141631 | Grace D. Boehner | La Have, N.S. | " | West La Have, N.S. 1919 | 112.4 | 26.4 | 10.6 | 157 | 100 | T. A. Mossman, M.O., Rose Bay, N.S. |
| 138251 | Hillcreft | Lunenburg, N.S. | " | Lunenburge, N.S. 1916 | 132.6 | 32.5 | 11.8 | 365 | 299 | Hillcrest Shipping Co., Lunenburg, N.S. |
| 141418 | Independence | Lunenburg, N.S. | " | " 1920 | 130.5 | 27.4 | 10.6 | 201 | 141 | A. Himmelman, M.O., Lunenburg, N.S. |
| 141682 | Kathleen Spindler | Lunenburg, N.C. | " | " 1920 | 125.4 | 27.2 | 10.6 | 174 | 112 | R. Spinkler, M.O., Lunenburg, N.S. |
| 141634 | Manuata | La Have, N.S. | " | Liverpool, N.S. 1920 | 121.6 | 26.8 | 11.5 | 173 | 114 | F. Risser, M.O., Kingsburg, N.S. |
| 141509 | Mary J. Wood | Quebec, Que. | Cn. Bt. | Northumberland, N.Y., U.S. 1902 | 94.3 | 18.3 | 8.8 | 130 | 130 | Auger & Son, Quebec, Que. |
| 141420 | Ocean Maid | Lunenburg, N.S. | Schr. | Liverpool, N.S. 1919 | 122.0 | 26.7 | 11.3 | 173 | 112 | A. Himmelman, M.O., Feltzen South, N.S. |
| 141633 | Versailles | La Have, N.S. | " | Bridgewater, N.S. 1919 | 124.0 | 26.7 | 10.1 | 155 | 100 | F. Gerhardt, M.O., East La Have, N.S. |

## Atlantic and Pacific Ocean.

The International Shipping Conference at Genoa, Italy, is reported to have decided in favor of the principle of a 48 hour week for seamen.

Manchester Liners' s.s. Manchester Division grounded on the mud banks at the mouth of the St. Charles River June 7, being caught by the strong winds when heading for Louise Basin, Quebec. She was released without serious damage.

Furness, Withy & Co. state that they anticipate making sailings from Halifax, N.S., to London, Eng., about every three weeks, during the summer, and to Liverpool, via Newfoundland, also about every three weeks, with occasional sailings to Glasgow and Manchester.

The British Government has appointed an imperial shipping committee to enquire into complaints regarding ocean freights and similar matters and also to survey facilities for inter-empire trade. Sir George Perley, Canadian High Commissioner, will represent Canada.

Early in June, the following four steamships cleared from Montreal simultaneously, carrying well over 4,000 passengers among them: Minnedosa and Tunisian, Canadian Pacific Ocean Services; Cassandra, Anchor-Donaldson Line, and Megantic, White Star-Dominion Line. This is an unusual thing for Canada.

A Halifax press dispatch of June 15 stated that it was reported there that a fast transportation service between Halifax and an English port is contemplated, with especially built modern steamships, equipped with oil fuel burners and having a speed about a knot faster than the s.s. Lusitania, which will necessitate only three nights being spent on board on the trans-Atlantic trip.

The Canadian Robert Dollar Co., which acquired the s.s. War Melody recently, has changed her name to Grace Dollar, and has placed her in its trans-Pacific service. She was delivered to her owners at New York a few weeks ago, and went to the Pacific coast via the Panama Canal, arriving at Bellingham, Wash., June 5, after which she proceeded to Vancouver, B.C., to take on cargo for Japan and China. She was built at Belfast, Ireland, in 1918, and has 4,040 d.w. tons capacity.

The Isthmian Line, controlled by the United States Steel Products Co., is reported to have completed arrangements for the operation of a steamship line between New York and Puget Sound, and British Columbia points, and the steamships Steel Maker and Bantu have already been placed in the service. The ships which are being utilized were operated formerly as the Maple Leaf Line, and calls were made at Victoria, but, on the reorganization, Vancouver is said to have been substituted for Victoria.

It was announced recently that a steamship service was about to be inaugurated between Vancouver and Havre and Calais, France, and that the s.s. Pacific would be ready to load at Vancouver early in July. We have been officially advised that the Johnson Line, of Stockholm, Sweden, will operate the service, which will be opened during the early half of July with the motor ship Pacific, which will load at Seattle, Wash., and Vancouver, and that she will be followed during the latter half of August by the motor ship Kronprinsessan Margareta, and that thereafter there will be regular sailings at intervals of about six weeks. It has not been decided whether the ships will call at both Havre and Calais, as it is considered that the call at Calais will be sufficient, this port being only 186 miles from Paris, and having the best railway connections with northern French ports, and also being connected by canals with points in France, Belgium and Alsace-Lorraine. C. Gardner Johnson Co., represent the line in Canada, and W. R. Grace & Co., at Seattle and Tacoma, Wash.

## Maritime Provinces and Newfoundland.

The harbor revenue at St. John, N.B., for May was $14,600, an increase of over $4,000 compared with May, 1919, due, it is stated, to the larger number of steamships handled.

Canada Steamship Lines Ltd. announced the inauguration of a steamship service between Montreal and Prince Edward Island, Sydney, N.S., and St. John's, about June 30, with the s.s. Mapledene.

The St. John Dry Dock & Shipbuilding Co., contractors for the harbor improvement work in Courtenay Bay, St. John, N.B., is reported to have submitted plans to the Dominion Government for a change in the original plans covering the projected improvements, and calling for the erection of four piers at the head of the bay with accommodation for six steamships, and the reclamation of ground for railway yards to some of the piers.

The Newfoundland Government subsidy for the carriage of mails and passengers between Newfoundland and North Sydney, N.S., is stated to have been reduced from $75,000 to $35,000 a year, until such time as the Reid Newfoundland Co., which operated the service, shall restore it to its full capacity. The company lost two of its steamships recently and of necessity of the service has been interfered with. It is reported that negotiations are proceeding in England for the purchase of additional ships and it is expected that they will be in operation during this year.

An order in council has been passed authorizing the following pilotage rates for the pilotage district of Miramichi, N.B.:—For steamships a flat rate of $25 inward and outward and an additional 5c. a registered ton. For sailing ships, up to 300 tons register, a flat rate of $25 inward and outward, with an additional 6c. a registered ton outward. For sailing ships over 300 tons register and not exceeding 700 tons register, a flat rate of $25 inward and outward, with an additional 5c. a registered ton inward and outward. For sailing ships over 700 tons register a flat rate of $25 inward and outward, with an additional 4½c. a registered ton outward.

## Province of Quebec.

The Gulf of St. Lawrence Shipping & Trading Co.'s s.s. Lady Evelyn was considerably damaged by fire at Carcy Point June 9.

Canada Steamship Lines' s.s. Quebec, which went aground at Three Rivers, June 3, during foggy weather, was released June 8, apparently undamaged.

The s.s. Columbia has been bought from U.S. owners by A. A. Larocque, President, Sincennes-McNaughton Lines Ltd., Montreal, and has been transferred to the Canadian register under the name of Dougalmac.

Canada Steamship Lines Ltd. has had a pontoon landing for the use of passengers and freight at its Quebec docks, built by the Davie Shipbuilding & Repairing Co., Lauzon, Que. It is built of Douglas fir, and is 235 ft. long, by 43 ft. wide, by 7 ft. deep.

The Canada Steamship Lines' s.s. Rapids King has, according to a press report, been stationed near Victoria pier, Montreal, to provide for night accommodation for travellers unable to find rooms in hotels or boarding houses in the city.

The barge Cuba, from Quebec to Ogdensburg, N.Y., with pulpwood, foundered in deep water, in the St. Lawrence River, June 8, and became a total loss. She was originally built as a steamship at Kingston, Ont., in 1875, and was owned by the George Hall Coal Co. of Canada. Her dimensions were,—length 168.7 ft., breadth 25.6 ft., depth 11 ft., tonnage, 386 register.

## Ontario and the Great Lakes.

A Kingston press dispatch says that, in view of the low water in the harbor there, the Dominion Public Works Department has decided to remove 41,000 yards of material, and that tenders will be called for the work at once.

The Ogdensburg Coal & Towing Co.'s s.s. Nicaragua, westbound June 8, collided with the gates at lock 18 of the Cornwall canal, and dislodged one of the gates. Traffic was delayed for about seven hours. The cause of the accident is given as an engineer's mistake in the signal.

The s.s. H. P. Bigelow, operated as a ferry between Brockville, Ont., and Morristown, N.Y., was destroyed by fire at her slip at Morristown, June 5. She was

## Vessels Added to and Deducted From the Canadian Register During March, 1920.

| | Steam. | | | Sailings. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| Added. | No. | Gross. | Registered. | No. | Gross. | Reg'red |
| Built in Canada | 9 | 6,326 | 3,907 | 9 | 1,403 | 942 |
| Purchased from foreigners | .... | ..... | ..... | .... | ..... | ..... |
| Transferred from United Kingdom | .... | ..... | ..... | .... | ..... | ..... |
| Transferred from British Possessions | .... | ..... | ..... | 1 | 365 | 299 |
| New registers | 3 | 133 | 96 | .... | ..... | ..... |
| Re-registered after wreck | .... | ..... | ..... | 1 | 130 | 130 |
| Totals | 12 | 6,459 | 4,003 | 11 | 1,898 | 1,371 |
| Deducted. | | | | | | |
| Wrecked or otherwise lost | 6 | 2,060 | 1,291 | 6 | 558 | 487 |
| Broken up or unfit for use | 12 | 471 | 273 | 17 | 618 | 560 |
| Sold to foreigners | 4 | 4,402 | 2,760 | 2 | 519 | 439 |
| Transferred to United Kingdom | 2 | 512 | 115 | .... | ..... | ..... |
| Transferred to British possessions | .... | ..... | ..... | .... | ..... | ..... |
| New registers | .... | ..... | ..... | 2 | 69 | 66 |
| Totals | 24 | 7,445 | 4,439 | 27 | 1,764 | 1,552 |

of oak, built at Baldwinsville, N.Y., in 1893, and had the following dimensions,—length 60 ft., breadth 14 ft., depth 8½ ft.; tonnage, 46 gross, 36 net.

The George Hall Coal Co. of Canada's claim against the owners of the s.s. Samuel Marshall, for damage caused by the Samuel Marshall colliding with the s.s. Liberty, at Kingston, recently, has been settled out of court, by the payment of approximately $10,000. The s.s. Liberty is at Kingston drydock undergoing repairs.

The United States Lake Survey reports the stages of the Great Lakes in feet above mean sea level for May, as follows: Superior, 602.40; Michigan and Huron, 580.75; St. Clair, 575.24; Erie, 572.31; Ontario, 245.60. Compared with the average May stages for the past ten years, Superior was 0.44 ft. above; Michigan and Huron 0.17 ft. above; Erie 0.42 ft. below, and Ontario 1.10 ft. below.

The contract for the building of a sea wall at Toronto, which has been awarded by the Dominion Public Works Department to Randolph Macdonald Co., Toronto, as mentioned in our last issue, calls for the construction of a breakwater along the southern shore of the center portion of Toronto Island 1,700 ft. long, on brushwood fascine mattress 60 ft. wide, the base of the breakwater being 47½ ft. wide, and the top 10 ft. wide, there being a slope of 1½:1 on one side, and 1:1 on the other. The height of the breakwater above low water level will be 7 ft.

## British Columbia and Pacific Coast.

The Union Steamship Co. of British Columbia has appointed G. Whalen, captain, and P. J. V. Farina, chief engineer of the s.s. Capilano; and J. Findlay, captain, and J. Hogan, chief engineer of the s.s. Chilkoot, for this season.

The contract for dredging and filling on the site of the Ballantyne pier, in Burrard Inlet, is reported to have been awarded by the Vancouver Harbor Commissioners, to Grant & MacDonald, Vancouver, for $513,121.50.

The C.P.R. s.s. Princess Alice has been withdrawn from the Gulf service and was placed on the Alaska route June 11, in conjunction with the s.s. Princess Mary. The s.s. Princess Royal, which has had additional deck accommodation installed, takes the place of the s.s. Princess Alice on the Gulf route.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John was returned to service on the Queen Charlotte Islands run, June 4, after having been repaired and overhauled, subsequent to a collision with the same company's s.s. Prince Albert, at Dead Tree Point about the end of March. The repairs were made by Wallace Shipyards Ltd., North Vancouver.

The auxiliary powered schooner Janet Carruthers, which was built by Wallace Shipyards, Ltd., North Vancouver, B.C., in 1917, for Canada West Coast Navigation Co., and which was wrecked on the Copalios Beach over a year ago, was dynamited about the middle of June, after her fittings were salvaged. Her dimensions were,—length 240 ft., breadth 44.1 ft., depth 19.3 ft.; tonnage 1,466 gross, 1,253 net. She was equipped with Diesel engine of 36 h.p., driving a screw.

The British Yukon Navigation Co., White Horse, Yukon, has appointed the following officers for its steamships for this year:—Canadian, C. M. Coghlan, captain, J. Scotland, chief engineer; Casca, J. O. Williams, captain, J. P. Borne, chief engineer; Selkirk, M. Campbell, captain, W. C. Vey, chief engineer; Tarahne, D. McKay, captain, F. Vey, chief engineer; Tutshi, J. McDonald, captain, J. Lauderdale, chief engineer; White Horse, F. D. Turner, captain, P. Larssen, chief engineer.

## Canadian Notices to Mariners.

The Department of Marine has issued the following:—

**British Columbia, Strait of Georgia, Fraser River.**—Range lights established on Woodward's Islands, Deas Island, Tilbury Island and Annacis Island.

**New Brunswick-Bathurst Harbor.** — During the past season the Dominion Public Works Department cleaned the dredged channel through the outer bar leur Bay, to a least depth of 15½ ft.; at the entrance to Bathurst Harbor, Chainside the harbor, on the Ripple, Ballast bar and Seal bar, the channel was cleared to a least dept hof 13½ ft., and in the Tetagouche channel, leading to West Bathurst, a section 900 ft. long and 40 ft. wide, was dredged to a least depth of 13 ft., but inside this section the controlling depth is still 10 ft.

**New Brunswick-Miscow Island.**—Without further notice the steam fog whistle on Birch Point, Miscow Island, Chaleur Bay, will be replaced by a diaphone, operated by air compressed by an oil engine, giving one plast of 3 seconds duration a minute.

**Nova Scotia and Newfoundland Radiotelegraph Direction Finding Stations.**—The British Admiralty published a circular letter recently relating to these stations at Chebucto Head and Canso, N.S., and at Cape Race, Nfld., calling attention to the immense value of these stations, but indicating that while mariners are beginning to use them more extensively, the advantage does not seem to have become general. The attention of mariners is called to a previous notice early in 1919, which gave the regulations to be used when communicating with the Canadian stations, and it is extremely necessary that both masters and radiotelegraph operators should make themselves fully acquainted with the procedure.

**Nova Scotia, Barrington Bay.**—Gas and bell buoy to be established without further notice, in position formerly occupied by lightship, in 6 fathoms, ⅜ mile eastward of Wesses ledge; steel cylindrical buoy, surmounted by a steel frame supporting the bell and lantern, painted black with white vertical stripes, showing a white acetylene light, automatically occulted at short intervals.

**Ontario, Lake Superior, Port Arthur harbor.**—Work will be started in the near future on the extension of the Bare Point breakwater. This extension will leave the south end of the present breakwater, and proceed southwesterly for 1,600 ft. Mariners are warned that they must use caution when in the vicinity.

**Ontario, Ottawa River, Chats Lake, Arnprior Island.**—On an islet, opposite the town of Arnprior, the 6th order dioptric light will be replaced, without further notice, by an unwatched occulting white acetylene light, automatically occulted at short intervals.

**Quebec, Gulf of St. Lawrence.**—About June 15, the front range light in Thunder River will be changed in position to 228 ft. southward of its previous position in the line of range, and 112 ft. back from the water's edge. The light is at an elevation of 30 ft. on a structure, consisting of a mast 25 ft. high, with wide diamond shaped day mark attached.

**Quebec, River St. Lawrence,** channel north of Island of Orleans.—Four steel can buoys, painted black and white, have been placed. two on the north side and two on the south side of the channel, between red gas buoy 110B and black can buoy 121B, at the eastern end of the channel, north of the Island of Orleans. These buoys are not to be used as aids to navigation.

## Wreck Commissioner's Enquiries and Judgments.

An enquiry has been held and judgment delivered in connection with the following casualty:—

**Prince Albert-Prince John Collision.**

Enquiry held during May by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. G. E. Budge and J. R. Stewart as nautical assessors, and judgment delivered towards the end of that month, into the collision between the Grand Trunk Pacific Coast Steamship Co.'s steamships Prince Albert and Prince John, off Skidegate, at the end of April. The court found that the collision took place in such a manner and in such unusual circumstances that it could not have been prevented by ordinary skill on the part of those in charge of their vessels, and no blame is therefore imputed to any of the officers concerned. The court expressed the opinion that both masters exercised considerable care and nerve, when they found themselves placed in an unpleasant and difficult situation, and that after the collision had occurred, the conduct of all concerned was worthy of highest commendation, it being the court's opinion that the s.s. Prince John would undoubtedly have foundered, in comparatively deep water, with probable loss of life, had it not been for the presence of mind, resource, energy and coolness displayed by the masters, officers and crews of both steamships.

**Steamships Lady Evelyn and Champlain.**—Rt. Hon. A. L. Sifton stated, in the House of Commons, recently, that the s.s. Lady Evelyn was sold April 24, 1919, and the s.s. Champlain in March, 1920, to the Gulf of St. Lawrence Shipping & Trading Co. The Lady Evelyn was included with other ships advertised for sale by the Naval Service Department in Feb., 1919. The only tender received was for $20,000. The s.s. Champlain was also advertised for sale. The Lady Evelyn was sold for $40,000, and the Champlain for $61,050. For the Lady Evelyn $34,000 had been paid to June 16, the balance of $6,000 being held pending settlement of a claim that the complete equipment was not handed over with the ship. For the Champlain, $13,-102.50 was paid in cash, the balance being secured by endorsed notes, maturing in 3, 6, 9 and 12 months, with interest at 6%.

**Marine Public Works Contracts.**—The Dominion Public Works Department has let the following contracts: Rubble mound stone breakwater off southern shore of Toronto Island, May 26, Randolph MacDonald Co., Toronto, at schedule of prices; dredging northwest Miramichi River, Que., June 2, Miramichi Dredging Co., Newcastle, N.B., at 54¾c a cu. yd. scow measure.

## Steamship Service Between Canada and West Africa.

Elder Dempster & Co. have issued the following:—Our new service from Canada to West Africa will consist of steamships sailing at about monthly intervals, although at first while the business is in course of development, the regularity and frequency of sailings may be governed by circumstances and the demands.

The first sailing will be the s.s. Melville from Montreal on or about June 10. This will be followed by the s.s. Bassam on or about July 15. Future sailings will be announced later. The Melville will call at the folowing ports: Dakar, Bathurst, Sierra Leone, Seccondi, Cape Coast Castle, Saltpond, Winnebah, Accra, Lome, Contonou, Lagos, Burutu, and Port Harcourt.

There are a great number of ports on the West Coast of Africa, extending over 2,000 miles, and following the practice adopted by our lines from Liverpool and from New York, the ports of call may vary with each sailing. One month's ship will call at certain ports, and the following ship may omit some of these served by the previous one, and include others instead, but in practically every case each ship will include the principal ports, like Sierra Leone, Seccondi, Accra and Lagos. The other ports will depend upon the cargo that may be offering from time to time. We have advertised the s.s. Bassam for the above ports and are now ascertaining from shippers what other ports they have shipped for, and would like the ship to call at.

This service is intended to be a regular one to and from Canada and the West Coast, and we are just as much interested in bringing back to Canada imports from West Africa, which we are in hope will develop into substantial proportions as the service and opportunities become better known, and we desire to bring to the notice of Canadian importers and manufacturers the opportunities afforded by bringing out by direct steamship, cocoa, palm oil, ground nuts, hides and skins, ginger, piassava, mahogany, ivory, manganese ore, etc.

Our service from West Africa to New York, consisting of steamships about every 10 days, is bringing out full cargoes every voyage, a very large proportion of which consists of cocoa from the Gold Coast, which is producing this article in enormous and ever-increasing quantities, and it seems to us that Canada should be able to import and use quite a large quantity of this West African cocoa, now that it be brought out by direct vessel.

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**Halifax Dry Dock Expropriation.**—The question of the price to be paid by the Dominion Government for the Halifax Graving Dock Co.'s property at Halifax, N.S., came before the Exchequer Court of Canada June 14. The company claims $5,000,000 for its property, which has been expropriated by the Dominion Government and the government has named $1,100,000 as the outside price it will pay. The property is now operated under lease by Halifax Shipyards Ltd.

**Victoria Drydock.**—The Minister of Railways stated in the House of Commons recently that the government had reached a conclusion on the proposal to build a drydock at or near Victoria, B.C., as a government work, that it would be commenced as soon as conditions will justify, and that the cost would be between $5,000,000 and $6,000,000.

## Trent Canal Construction.

J. A. Campbell, M.P. for Nelson, Man., asked the following questions in the House of Commons recently, the answers being given by the Minister of Railways and Canals:—

"What is the total amount which has been spent by the Government on the Trent canal during the last 25 years?" Answer:—$20,049,130.28."

"What amount was spent on this canal last year?" Answer:—$1,434,713.49."

"How many persons were permanently employed thereon?" Answer:—"Ninety-three employes permanently employed throughout the year, and 91 employed during the season of navigation only."

"What was the total maintenance cost last year? Answer:—"$428,851.22."

"What was the total revenue derived therefrom during the last fiscal year?" Answer:—"$2,954.37, from rentals under hydraulic leases. There are no tolls charged on any canals."

"What amount of freight was transported on said canal during the last fiscal year?" Answer:—"Season of 1919—69,118 tons of freight."

"What is the draft of the canal?" Answer:—"Trenton to Peterborough, 8 ft. 4 in.; Peterborough to Lake Couchiching, 6 ft."

## Icebreaking Steamship for the St. Lawrence River.

The Marine Department will, we are officially advised, call for tenders early in July, to be in by Aug. 9, for the construction of an icebreaking steamship for service in the St. Lawrence River and Gulf. The estimates for 1920-1921, details of which have been given in previous issues, contain an appropriation of $2,000,000 for this purpose. The plans and specifications are being prepared in the Marine Department. The general dimensions will be,—length between perpendiculars 275 ft., breadth moulded 57½ ft., depth moulded 32 ft.; tonnage, 3,520 gross; indicated horse power, 8,000; speed 16 knots. The dimensions are practically the same as those of the icebreaking steamship J. D. Hazen, which was built for St. Lawrence River service, by Canadian Vickers Ltd., in 1914, but which was not finished when the war broke out. At the request of the British Government, the ship was then completed and sold to the Russian Government, for use in the White Sea.

## Canadian Pacific Ocean Services to the Far East.

The direct steamship service from Vancouver, B.C., to Singapore, Straits Settlements, which was inaugurated by the Canadian Pacific Ocean Services in Oct., 1919, with the s.s. Methven, is to be augmented by the addition of the s.s. Mattawa, formerly in the Atlantic trade. The Mattawa sailed from Liverpool on April 23 via the Suez canal with a general cargo for Karachi, India, and will load for Vancouver at Karachi, Bombay, Colombo, Singapore, Hong Kong, Shanghai, Kobe, and Yokohama, arriving Vancouver early in July.

The direct Singapore service will be in addition to the regular service to China and Japan ports and Manila, maintained by the C.P.R. for many years with the Empress fleet. Shipments of rubber, tea, tin, etc., originating in the Straits Settlements and Indian ports, can now be carried on either of the ships direct from Singapore to Vancouver, saving transhipment at Hong Kong.

From Vancouver it is expected a fairly heavy volume of traffic will move in connection with these ships to Singapore, as shipments for such ports as Calcutta, Colombo, Bombay, Rangoon, Madras, Batavia, Samarang, etc., can be transhipped at Singapore at considerably less than via Hong Kong. To these ports a regular weekly service is maintained by local steamship lines.

With the addition of these two ships the Canadian Pacific Ocean Services now has 6 steamships in its Oriental service aggregating 60,000 tons gross, with approximately three sailings a month.

Another feature of this service is the issuance of through bills of lading from shipping points to ultimate destination, thereby eliminating the usual trouble of arranging clearance at the seaboard.

## Superintendent of Pilots for Montreal and Quebec District.

The Civil Service Commission has invited applications for the position of Superintendent of Pilots for the Montreal-Quebec pilotage district at an initial salary of $3,060 a year, which will be increased on recommendation for efficient service, at the rate of $180 a year, until a maximum of $3,600 is reached. His duties will be, under direction, to supervise the pilotage service in the Montreal-Quebec district, to call and assign pilots to ships, receive pilotage dues, and make the required reports and returns to the Marine Department, to conduct investigations, when required, into wrecks, collisions and strandings, to make recommendations and handle correspondence in connection with such work and to perform other related work as required. He must hold a master's certificate of competency, must have been actually master of a sea going ship, or a passenger ship in coasting trade, for at least a year, must be thoroughly familiar with all shipping matters, especially those of the Gulf and River St. Lawrence, and have a knowledge of both English and French. While no definite age limit is fixed, age may be a determining factor when the selection is made.

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**Government Steamships to be Sold.**—The Naval Service Department is offering for sale by tender, to Aug. 2, the ships, Niobe, Rainbow, Grilse and Canada, as they lie, the Rainbow at Esquimalt, B.C., and the others at Halifax, N.S. The Niobe is a steel armored cruiser of the Spartiate type, built in 1892, and having a displacement of 11,000 tons. Her dimensions are,—length over all 462½ ft., beam 43¾ ft., draft 27½ ft. The Rainbow is a steel cruiser of the Apollo type, built in 1891, and having a displacement of 3,400 tons. Her dimensions are,—length over all 300 ft., beam 43¾ ft., draft 18 ft., and it is stated that with slight alterations she could be utilized as a cargo ship. The Grilse was built at Glasgow, Scotland, in 1912, of steel, as a pleasure yacht, and is screw driven by turbine engines of 6,000 h.p., using oil fuel, and has a speed of 32 knots an hour. Her dimensions are—length 202.3 ft., breadth 18.3 ft., depth 9.2 ft., tonnage, 287 gross, 157 net. The Canada was built at Barrow-in-Furness, Eng., in 1904, of steel, and is screw driven by engine of 209 h.p. Her dimensions are,—length 206 ft., breadth 25.1 ft., depth 13.3 ft.. tonnage, 411 gross, 185 net.

## Welland Ship Canal Construction.

J. A. Campbell, M.P. for Nelson, Man., asked the following questions in the House of Commons recently, the answers being given by the Minister of Railways and Canals.

"When was the work in connection with the new Welland canal scheme started?" Answer:—"Preliminary surveys date back to 1908 and were continued until 1913. Actual construction commenced Sept., 1913."

"When was the work discontinued?" Answer:—"The work of construction actually ceased in April, 1917, but the work of closing up the contractors' estimates, maintaining government property and plant was carried on until Dec. 31, 1918."

"What was the total cost of the work done during the above period of construction?" "Answer:—

| | |
|---|---|
| "Preliminary surveys (approx.) | $ 187,232.15 |
| "Construction work and plant taken over from contractors, as per final estimates for sections 1, 2, 3, 4A, and 5 and materials purchased by department, etc. | 16,550,883.17 |
| "Total to Mar. 31, 1919 | $16,738,115.32 |
| "Expenditure incurred between Jan. 1 and Mar. 31, 1919 | 683,315.84 |
| "Total expenditure incurred up to Dec. 31, 1918 | $16,054,799.48" |

"When was the work recommenced in 1919, and when did it stop?" Answer:—"Contracts were dated Jan. 17, 1919; work actually commenced in February. Contracts expired Dec. 31, 1919."

"What was the nature of the work done during 1919, and what was the total cost thereof?" Answer:—"Purchase of plant, equipment, plant materials and repairs, and general construction work. The cost for 1919 was as follows:

| | |
|---|---|
| "Jan. 1 to Mar. 31, 1919 | $ 683,315.84 |
| "Apl. 1, 1919, to Mar. 31, 1920 | 3,768,760.22 |
| | $4,453,076.06 |
| "Jan. 1, to Mar. 31, 1920 | 61,449.23 |
| "Actual expenditure incurred during calendar year 1919 | $4,390,626.83" |

"How many men were employed thereon during 1919?" Answer:—The largest number employed at one time was during the last week of July, when the force, including engineering staff, was 2,786. Average monthly force was 1,458.

## Merger of Canadian Steel, Coal, Shipping and Shipbuilding Companies.

At the Dominion Steel Corporation's annual meeting, at Montreal, June 18, the President, R. M. Wolvin, who is also officially connected with Canada Steamship Lines Ltd., Montreal Transportation Co., Halifax Shipyards Ltd., etc., stated that a short time ago a proposal had been submitted to the directors to join with various other enterprises in the recently organized British Empire Steel Corporation Ltd., the object of which is to put under single control the largest known deposits of ore and coal, to operate ore and coal mines, steel works, steamships, shipbuilding and repair yards, and other complementary enterprises. This would be the greatest industrial enterprise in Canada and would promise greater economy and efficiency in the production of coal and steel, with much needed shipbuilding and organization for the transportation of raw material and finished products, together with an outlet for ship plates.

Among the enterprises which it is said will be absorbed by the newly organized company are: Dominion Iron & Steel Co., Dominion Coal Co., Nova Scotia Steel & Coal Co., Canada Steamship Lines Ltd., Black Diamond Steamship Co., Halifax Shipyards Ltd., Tidewater Shipbuilders Ltd., Three Rivers, Que., Collingwood Shipbuilding Co., Davie Shipbuilding & Repairing Co., Lauzon, Que., Maritime Nail Co., and possibly Canada Foundries & Forgings Ltd., Welland, Ont., and Dominion Shipbuilding Co., Toronto. In addition to the Canadian companies concerned, various British interests will probably join, including those controlled by Viscount Furness and Sir William Beardmore, who are associated with large steel, iron, coal, shipbuilding and shipping companies in Great Britain.

Considerable discussion relative to the projected merger centered round the Dominion Steel Corporation's annual meeting, and at this meeting the election of a new board of directors was taken to be an indication as to the company's policy regarding its future movements in this connection. The directors elected are:—Senator C. P. Beaubien, E. Bristol, K.C., M.P., director of Canada Steamship Lines Ltd.; S. Elkin, M.P., President, Maritime Nail Co., St. John, N.B.; Viscount Furness, head of Furness Withy & Co., and associated with Canada Steamship Lines as member of the London, Eng., Advisory Board; Sir William Mackenzie, ex-President, Canadian Northern Ry.; Sir Newton Moore, London, Eng.; Senator F. Nicholls, President, Canadian General Electric Co.; J. W. Norcross, President and Managing Director, Canada Steamship Lines Ltd., and President, Halifax Shipyards Ltd., etc.; Sir Henry M. Pellatt, Toronto; Sir Wm. D. Reid, ex-President Reid Newfoundland Co.; Sir Clifford Sifton, Toronto; J. F. M. Stewart, director, Canada Steamship Lines Ltd., and Point Anne Quarries Ltd., Toronto; H. B. Smith, President, Collingwood Shipbuilding Co., and Northern Navigation Co., Toronto; B. Talbot, London, Eng., and R. M. Wolvin, Vice President and Managing Director, Halifax Shipyards, Ltd., and President Montreal Transportation Co.

**Lighthouse Keepers' and Caretakers' Pay.**—In answer to a question in the House of Commons recently, the Minister of Marine gave the following information as to the names and salaries of lightkeepers and lighthouse caretakers on St. Lawrence river from Lake St. Louis to Lancaster, and on the Ottawa river from Lake St. Louis to Point Fortune: Lachine Range, J. B. Malo, $390; Melochville, E. Julien, $420; Windmill Point, M. O. Phaneuf, $100; Caron Point, F. Robert, $100; Ile Perrot, D. Leduc, $180; Ste. Anne de Bellevue, E. Pilon, $220; Ste. Anne de Bellevue locks, S. Brisbois, $170; Pte. à Cadieux, S. Poirier, $260; Oka, A. Lacroix, $140; Oka Wharf, T. Hamelin, $100; Pte. aux Anglais, A. Labrosse, $420; Graham Wharf (b), E. Lavigne, $100; Graham Wharf (f.), A. Bertrand, $100; Ste. Placide, H. Dubreuil, $260; Jones Island, J. Charlebois, $140; Rigaud, O. Mallette, $220; Argenteuil Bay, J. Giroux, $140; Knight's Point, W. Sharmon, $820; McKie's Point, D. Daoust, $260; St. Anicet Bar, D. McKellop, $505; Lancaster, J. J. Munroe, $765.

**Canada River Steamship Co. Ltd.** has been incorporated as a private company under the Dominion Companies Act with $1,700,000 authorized capital and office at Kingston, Ont., to build, own and operate steam and other ships, marine railways, drydocks, wharves, elevators, etc., and to carry on a general transportation and forwarding business.

## Probable Effect of U.S. Merchant Marine Act.

London, Eng., June 23, copyright cable to Montreal Gazette:—An official of the Ministry of Shipping stated today that Canada will benefit from the forthcoming rate war between British and United States ship owners. A number of U.S. shipping firms carrying on business at San Francisco and Seattle, have applied to be allowed to transfer their headquarters to Vancouver, B.C., and so come under the British regulations, he said. The reason is that the U.S. Merchant Marine Act aims to keep foreign ships out of U.S. ports and thus give a monopoly to the new and vast U.S. mercantile marine, which, by the end of the year, will amount to 7,000,000 tons, against the British 17,000,000 tons. The act imposes a tax on all foreign vessels proportionate to tonnage, and gives preferential railway rates for goods going abroad in U.S. ships.

In connection with the latter, the British Government has instructed Sir Auckland Geddes to make enquiry of the U.S. State Department. The probable outcome will be a big rate war, according to the Ministry of Shipping official. He added: "If the U.S. people, by adopting means laid down in the new law, undercut rates, without doubt the British companies will follow suit immediately, and it must be remembered the U.S. people are novices at ship management compared to the men at the head of our shipping industries. One curious effect is that already U.S. shipping firms in San Francisco have applied to transfer their headquarters to Vancouver. It does not look as though the U.S. people have lost faith in British supremacy."

## Fisheries Protection Tugs on Lake Erie.

The Naval Service Department has selected the steam tugs Becancour, Lavaltrie and Laviolette for the Fisheries Protection Service on Lake Erie. They were all built of steel by the Marine Department, at Sorel, Que., and have the following chief details respectively:—

**Becancour**, built in 1914, length 93 ft., breadth 22.5 ft., depth 9.9 ft., tonnage 213.74 gross, 84 net, equipped with two fore and aft compound engines 48 n.h.p., 450 i.h.p., driving twin screws, speed 11.5 knots an hour. Station, Port Dover.

**Lavaltrie**, built in 1912, length 84.5 ft., breadth 21.7 ft., depth 10.8 ft.; tonnage 194.99 gross, 84.12 net; equipped with two fore and aft compound engines 40 n.h.p. and 200 i.h.p., driving twin screws, speed 10 knots an hour. Station, Port Stanley.

**Laviolette**, built in 1912, length 84.2 ft., breadth 21.7 ft., depth 10.8 ft.; tonnage, 213.49 gross, 82.34 net; equipped with two fore and aft compound engines 40 n.h.p., 200 i.h.p., driving twin screws, speed 10 knots an hour. Station, Kingsville.

**Miramichi River Services Ltd.** has been incorporated under the New Brunswick Companies Act, with $24,900 authorized capital and office at Chatham, N.B., to own and operate steam and other ships and to carry on a general navigation business between places on the Miramichi River, and ports within the province, on the Gulf of St. Lawrence. The provisional directors are:—Hon. J. P. Burchill, Nelson, N.B., W. B. Snowball, J. K. Logie, G. J. Sproul, and C. Reinsborrow, Chatham, N.B.

# Mainly About Marine People.

John Barnsley, heretofore Assistant Manager, Union Steamship Co. of British Columbia, has been appointed acting Manager, consequent on the death of E. H. Beazley, Managing Director, who was killed May 24 in an aeroplane accident. The chief owners of this company, who are in Liverpool, Eng., are being consulted in regard to permanent appointments and changes in the directorate. Mr. Barnsley has been connected with shipping in British Columbia for several years, and was Managing Director of the Boscowitz Steamship Co., Vancouver, when it was absorbed by the Union Steamship Co. of B.C., since when he has been Assistant Manager of the latter company.

E. H. Beazley, Managing Director, Union Steamship Co. of British Columbia, Vancouver, whose death in an aeroplane accident, was mentioned in our last issue, was born at Birkenhead, Eng., in 1876, and entered the shipowning business of Gracie, Beazley & Co., conducted by his father in Liverpool, after completing his education in England and Germany. He later became connected with J. H. Welsford & Co., shipowners, also of Liverpool, and was their outside manager for 10 years, and when that firm obtained control of the Union Steamship Co., he came to Canada as Managing Director in Aug., 1911, which position he retained to the time of his death. He was intimately associated with the business and social life of Vancouver, and was a prominent member of the local board of trade, and President of the Employers Association of British Columbia.

Jos. R. Bennett, wharfinger, and Dock Superintendent, Pickford & Black, Ltd., Halifax, N.S., died there June 8, aged 74. In his younger days he served in the Royal Navy. He was in Pickford & Black service for over 30 years.

George E. Bunting, who has been appointed Representative for Australia and New Zealand, Canadian Government Merchant Marine Ltd., Auckland, New Zealand, entered transportation service with the G.T.R. when 19 years old, and later transferred to the Lehigh Valley Rd. at Buffalo, N.Y., and again to Canada Atlantic Ry. service at Ottawa. He was, subsequent to the absorption of the C. A.R. by G.T.R., Travelling Freight Agent, Allan Line Steamship Co., and in 1913 was appointed General Agent, Chicago, Ill., remaining there until the control of that company passed to the C.P.R. On the organization of C.G.M.M. Ltd. he was appointed Ontario Freight Agent, with office at Toronto, and in Dec., 1919, was sent to Australia and New Zealand to look over the shipping situation generally on behalf of C.G.M.M.

E. L. Cousins, General Manager and Chief Engineer, Toronto Harbor Commissioners, who returned from England recently, after an extended business trip, was entertained to dinner at the Engineers Club, Toronto, May 31, by the commissioners and staff.

Lt. Commander C. P. Edwards, R.N.C. V.R., Director of Radiotelegraph Service, Naval Service Department, Ottawa, has been appointed an officer of the Order of the British Empire, Military Division, for services rendered during the war.

Sir Thomas Fisher, K.B.E., R.N., General Manager, Atlantic Lines, Canadian Pacific Ocean Services, London, Eng., visited Canada during June, for a conference with the executive relative to extensions to the steamship service. This is his first visit to Canada since his appointment to his present position. He was recently made a Knight of the Order of the British Empire for general services during the war.

Commander Hugh E. Holme, R.C.N., heretofore in command of H.M.C.S. Rainbow, has been appointed Commander in Charge, H.M.C. Dockyard, Esquimalt, B.C., vice Capt. Edward H. Martin, C.M. G., R.N., retired.

A. B. Mackay, who carried on business as steamship manager and agent, at Hamilton, Ont., has leased Kent House, East Cowes, Isle of Wight, which at one time was the Duchess of Kent's home, and was occupied latterly by Prince Louis of Battenburg, who is now known as the Marquis of Milford Haven.

J. T. Mathews, of the Mathews Steamship Co., Toronto, who died May 19, 1919, left an estate valued at $454,165, the bulk of it being in the company's shares.

J. W. Norcross, President, Canada Steamship Lines, and H. B. Smith, President, Northern Navigation Co., accompanied by Sir James McKechnie, Managing Director, Vickers Limited, James Whalen, President, Port Arthur Shipbuilding Co.; T. P. Phelan, President Canada Railway News Co.; H. W. Brown, President Union Transportation Co., New York; and a number of other prominent men in the Atlantic shipping trade, and several Canada Steamship Lines officials, visited Sarnia, Sault Ste. Marie, Port Arthur, Fort William and Duluth at the end of May, on the Northern Navigation Co.'s s.s. Hamonic. Mr. Norcross entertained at lunch at Sarnia and Port Arthur, about 200 of the prominent business men of each city being present.

George William Roome, C.B.E., whose appointment as Chief Superintendent Engineer, Canadian Pacific Ocean Services Ltd., Liverpool, Eng., was announced in a recent issue, was born in Kent, Eng., Sept. 13, 1865. He entered the Royal Navy as an engineer student in July, 1881, at Keyham College, Devonport, Eng., and subsequently served on the following ships,—1887, Mohawk; 1888, Mersey; 1890, Barham; 1891-92, Euphrates; 1893-95, Hood; 1905-06, Prince George; 1911-12, Indomitable; 1918-19, Tiger. He has also served as assistant in the Royal Dockyards at Devonport and Malta, and as Chief Engineer in the Royal Dockyards at Hong Kong and Pembroke. From 1915 to 1918 he was Engineer Manager at the Rosyth naval base, when the whole of the plant and machine shops were erected and the yard put to the work of repair and refit of the greater part of the Grand Fleet. During 1892 and 1893, he served at the Admiralty, and from 1895 to 1898 and 1906 to 1911, was Instructor at the Royal Naval College, Greenwich, Eng. While on service on the staff of the Admiral commanding a battle cruiser squadron, during the latter part of the war, he was promoted to the rank of Engineer Rear Admiral, and made a Commander of the Order of the British Empire.

J. W. Troup, Manager, British Columbia Coast Service, C.P.R., Victoria, B.C., has applied for naturalization as a Canadian. He was born at Portland, Ore., Feb. 5, 1855, and came to Canada in 1892.

W. F. Wasley, Manager Muskoka Lakes Navigation & Hotel Co., Gravenhurst, Ont., has been re-elected President of the Highland Motor League.

## Sorel Government Shipyard Superintendency.

In Dec., 1919, the Civil Service Commission advertised for applications for appointment as Superintendent of the Dominion Government shipyard at Sorel, Que. On May 11, the Commission advised us that the Marine Department had requested that no appointment be made, and that the matter would be held in abeyance for some time. On May 20 the Marine Department advised us of Louis Lacoutre being acting officer in charge. On June 15 the Commission again invited applications for the position, as follows: —

A shipyard superintendent for the Government shipyard at Sorel, Que., at an initial salary of $3,000 a year, which will be increased upon recommendation for efficient service at the rate of $180 a year until a maximum of $3,540 has been reached. This initial salary will be supplemented for the present fiscal year by the bonus provided by law. Duties.—Under executive direction, to have charge of the Sorel shipyard; to be responsible for the design, estimates for costs construction, and repair of ships; to supervise safekeeping of stores and stock and the work of all employes, and to perform other related work as required. Qualifications.—Education equivalent to graduation in engineering from a school of applied science of recognized standing; at least five years of experience in ship design and construction, two years of which shall have been in responsible charge of such work; thorough knowledge of various types of ships and ship machinery and the construction and repair thereof; firmness, tact, good judgment, and ability to manage men. Examination.—Subjects and weights as follows: Education, training and experience, 7; oral interview, if necessary in the opinion of the Commission, 3.

## St. John, N.B., Harbor Development.

A St. John, N.B., press dispatch says that important changes are suggested in connection with the harbor development at Courtenay Bay, which is under contract from the Dominion Government to the St. John Dry Dock & Shipbuilding Co., and a very full illustrated description of which appeared in Canadian Railway and Marine World for May. The contract calls for the building of three deep water wharves on the northwest side of the bay, which would narrow the channel considerably, and make it difficult for ships to berth, as the assistance of tugs would be required.

The change proposed is to build four wharves, instead of three, each to be 1,000 ft. long, and to project from Egbert St., straight towards the entrance of the bay. It is claimed that this change would afford a wider channel, and enable ships to dock and leave port without the difficulties which would be encountered under the present plan, as they would go straight to their docks, back out again and turn in the turning basin, thereby avoid the effect of the high tides.

It is also claimed that the change would provide, for the Canadian National Rys., a large acreage of land immediately adjoining their present yards, on which a large number of tracks could be built, which would obviate the present congestion, and avoid the grades, which, under the present plan, would be serious.

## Shipbuilding Profits in Great Britain.

According to a statement published in England recently shipbuilding in the United Kingdom has made a very good financial record. Ships built there, it is stated, were turned out at a lower cost than those of other countries, and sold at higher prices. Of the 821 ships ordered by the Ministry, 129 were cancelled after the armistice was signed, 155 were transferred to private owners under the agreement with Lord Inchcape, 120 were transferred on similar terms to their builders, 104 were sold to foreign owners, 156 were sold to British owners direct; while of ships built abroad, 101 were sold to foreign owners and 18 to British owners, while of the total 20 were sunk and 18 are yet unsold. The 260 ships built in the United Kingdom were sold for £47,900,000—a profit of £11,600,000, as compared with their cost of £36,300,000; but the 119 vessels built abroad cost £26,400,000 and realized only £17,200,000—a loss of £9,200,000—leaving a net profit on the whole programme of £2,400,000. Put another way, it may be said that the United Kingdom ships cost an average of £139,615 each and sold for an average of £184,231—a profit of £44,616 a ship; while the ships built abroad cost £221,848 each and sold for £144,538—a loss of £87,310 a ship. This seems to prove pretty conclusively that the shipyards of the United Kingdom are as capable as ever they were of competing economically with those of Canada and the United States.

## Shipbuilding in Australia.

The Assistant Canadian Trade Commissioner at Melbourne, Australia, writes:—Some interesting particulars of the cost of shipbuilding in Australia were made public recently by the minister in charge of shipbuilding, who stated that an attempt had been made by the Commonwealth Government to have six steel ships built in Australia of the same type as the five being built in the United Kingdom, but that the Government of New South Wales, after submitting an offer to build three at Walsh Island at £33 ($160.60) a ton, declined to sign the contract.

These ships are 12,800 tons each, with 350,000 cu. ft. of refrigerator space, and are part of the government's proposals for a fleet of eleven 12,800 ton ships of the latest type which would maintain a two-weekly service between Australia and the United Kingdom. The New South Wales Government afterwards offered to build the six ships at the actual cost of labor and material, plus a percentage for overhead charges and profits, but this was not agreed to by the Commonwealth, which estimated the actual cost at £28 10s. ($138.70) a ton, at which price the first ship constructed at the Government yards at Williamstown, Victoria, was recently turned out.

It was further stated by the minister, that under an agreement with two private firms in Australia, which are building two 6,000-ton vessels for the Commonwealth, the profit was to be on a graduated basis. If the ships cost £33 ($160.60) a ton, the firms received no profit, but that the rate of profit increased with each £1 ($4.87) a ton below £33 that the ships were built for.

It is said that the Commonwealth is prepared to negotiate further with the New South Wales Government in regard to the ships which it desires to have built in Australia, as the government yards at Wash Island, at Newcastle, and Cockatoo Island, at Sydney, are the only yards in Australia with slips wide enough for the construction of ships of the size required, but any agreement arrived at would have to be on the basis of £33 a ton previously offered.

## United States Shipping and Shipbuilding Notes.

Major General G. W. Goethals has resigned the presidency of the American Ship and Commerce Corporation.

The U.S. Shipping Board will, it is stated, obtain, from the charter of 15 ex-German steamships, to the U.S. Mail Steamship Co. for five years, a minimum hire of $22,054,917.

The U.S. Shipping Board has issued the following statement of ships which it owned and controlled on June 5. Contract steel ships, 956; requisition steel ships, 205; wooden composite ships, 271; concrete ships, 4; bought ships, 24; seized German and Austrian ships, 31; ships chartered from Peru, 2.

The Atlantic Coast Shipbuilders' Association states that U.S. shipyards had orders on hand May 1 for 296 ships of 1,404,698 gross tons, on private account, an increase of 67,253 gross tons, compared with average gain of 198,000 for preceding six months. This is the smallest net increase in steel steam tonnage orders since U.S. shipyards began to take contracts for private account in any quantity.

## Lighthouse and Buoy Service Estimates for 1920-1921.

The estimates for the year ending Mar. 31, 1921, submitted to the House of Commons recently contain the following items:—

| | |
|---|---|
| Agencies, rents and contingencies | $198,000 |
| Salaries and allowances to lightkeepers | 650,000 |
| Maintenance and repairs to lighthouses | 750,000 |
| Construction of lights and aids to navigation, including regulation of traffic in Detroit river and such other places as may be found necessary | 400,000 |
| Signal Service | 65,000 |
| Administration of pilotage | 400,000 |
| Maintenance and repairs to wharves.. | 10,000 |
| Breaking ice in Thunder Bay, Lake Superior and other points deemed advisable for good of navigation | 40,000 |
| Pensions to retired pilots | 9,900 |
| Telephones at different points in connection with aids to navigation | 500 |
| Allowance to Harbor Master, Amherstburg, for supervision of lights and buoys on St. Clair river and Lake Erie; and other services in connection with lighthouse service for season of 1920 | 600 |
| Job Bros. for use of wharf at Greenly Island | 375 |
| | $2,524,375 |

## Sale of Montreal Transportation Co.

A special meeting of shareholders of Canada Steamship Lines Ltd. was held at Montreal, June 26, to ratify the purchase of the Montreal Transportation Co.'s property. The price to be paid is stated to be $3,000,000, $1,000,000 being paid in cash and the balance by July 1, 1921, at short intervals.

The Montreal Transportation Co. Ltd. is an old established business and until 1903 had an authorized capital of $300,000. In that year the company reorganized, with an authorized capital of $1,000,000, the paid up capital early in 1916 being $913,300, with no bonds outstanding. In addition to other property the company owns the entire capital stock of the Prescott Terminal Co., $500,000. At the end of 1916 the company's property and assets were acquired by L. L. Henderson, Vice President and Managing Director, and his associates, Mr. Henderson becoming President and Managing Director. In 1918 a number of changes took place, R. M. Wolvin being elected President, L. L. Henderson, Vice President, and T. R. Enderby, Managing Director, and subsequently the authorized capital stock was increased to $4,000,000, of which $3,000,000 was issued and paid up. Holders of Montreal Transportation Co.'s stock are asked to deposit it with the Prudential Trust Co. as trustee, and they will receive in return negotiable certificates to the extent of their holdings until the property is fully paid for on July 1, 1921.

The company owns the following steamships: Advance, Alert, Arabian, Atikokan, Cataract, D. G. Thomson, Escort, Glenmount, H. F. Bronson, India, Joyland, Manola, Mary P. Hall, McNaughton, Nicaragua, Oatland, R. G. A. Weaver, Simla, Stormount, Valcartier, Vinmount, Westmount, and Windsor, in addition to a number of tugs, barges, etc.

## Change in Wavelength at Canadian Direction Finding Stations.

The Director of the Radiotelegraph Branch, Naval Service Department, Ottawa, Lt. Commander C. P. Edwards, has issued the following notice:—The attention of masters of merchant ships fitted with radiotelegraph apparatus is called to the following notice of change in wavelength, at Canadian direction finding stations:—

On and after Aug. 1, 1920, the Canadian radiotelegraph direction finding stations at Chebucto Head, N.S.; Canso, N. S.; and Cape Race, Nfld., will use the wavelength of 800 meters exclusively for transmission and reception.

It will be necessary for all ships to have their transmitters adjusted to transmit on 800 meters if they desire to obtain bearings from the stations named.

All use of the wavelength of 600 meters by Canadian direction finding stations will be discontinued after Aug. 1, 1920.

**Vancouver Dry Dock.**—J. H. Sinclair, M.P. for Antigonish and Guysborough, N.S., asked in the House of Commons on June 16: "Has an agreement been made by the Government and J. Coughlan & Sons to build a dry dock in Vancouver, under the provisions of the statute relating to the construction of dry docks; what is the date of the agreement; has it been accepted by both parties thereto and if not what is the cause of delay?" The Minister of Railways replied that the form of agreement was submitted to J. Coughlan & Sons legal representatives on May 10, but has not as yet been signed, and returned to the department for completion. There is no information in the department as to the cause of the delay."

**The Transportation & Shipping Co.** Ltd. has been incorporated under the Quebec Companies Act, with $48,000 authorized capital and office at Quebec, Que., to own and operate steam and sailing ships, wharves, docks, etc., and to carry on a general freighting business. The provisional directors are:—J. L., J. E., and B. C. Lachance, H. T. Beriau, Quebec, Que., and J. A. Cardinal, Limoilou, Que.

## Navigation on Northern Alberta Waters.

The Lamson Hubbard Canadian Co., which acquired the assets of the Peace River Development Co. recently, is operating under the latter name the steamboats D. A. Thomas, Hudson's Hope, Slave River and Distributor, as well as a number of gasoline boats on the northern waters of Alberta. J. H. Boyan is Vice President and General Manager, Edmonton, Alta., and A. Sutcliffe is Transportation Manager, Peace River, Alta.

The D. A. Thomas is a stern steel steamboat of 3,000 tons with accommodation for 250 passengers, and operates a weekly service from Peace River to Vermilion Chutes, a round trip of 700 miles; master, J. A. Hurling, chief engineer, H. J. Hutchinson.

The Hudson's Hope, formerly Northland Call, is of the stern wheel type of 80 tons, with accommodation for 50 passengers, and operates a weekly service from Peace River to Hudson's Hope, a round trip of 500 miles; master, C. Smith, chief engineer, A. Aitkins.

The s.s. Slave River, stern wheel type of 100 tons, with accommodation for 75 passengers, operates a weekly service on Slave River from Vermilion Chutes to Fort Fitzgerald, a round trip of 600 miles; master, —. Alexander, chief engineer, —. Denison.

The Distributor, stern wheel type of 200 tons, with accommodation for 250 passengers, operates from Fort Smith to all points on the Mackenzie River, making two round trips during the season, between June 1 and September. The first sailing will take place from Fort Smith July 1; master, —. McLelan, chief engineer, —. Conevear.

The company also operates two large type gasoline boats on the Athabasca River from McMurray to Fort Fitzgerald, and on Athabasca Lake from Fort Chipewyan to Fond du Lac.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

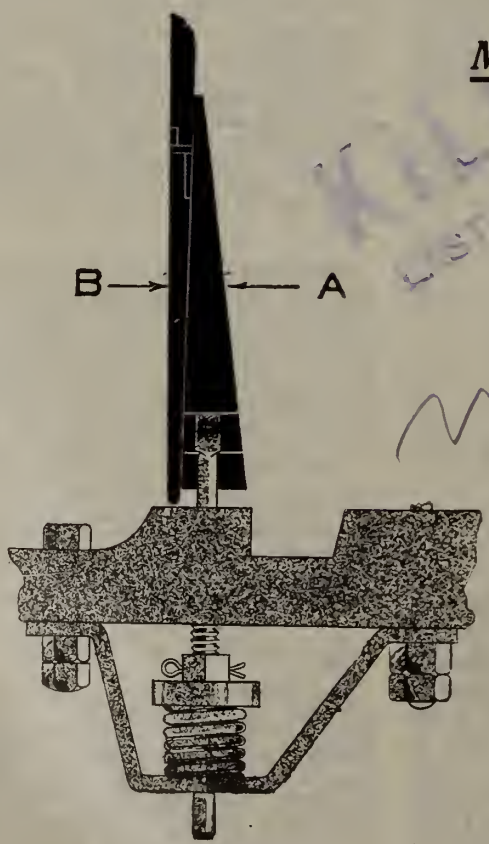
Canadian Fairbanks-Morse Co.—C. J. Brittain, heretofore Managing Director, Toronto, Winnipeg, Saskatoon and Calgary branches, has been appointed Vice President and General Sales Manager, with office at Montreal, succeeding C. Graham Drinkwater, who has been Vice President in charge of sales, for many years, and has joined the banking firm of Aldred & Co., Ltd. Mr. Brittain was one of the first salesmen employed by Canadian Fairbanks-Morse Co. in its early days. Kenneth Forbes, heretofore Manager, St. John, N.B. branch, has been appointed Manager of Winnipeg branch, also of Regina branch, which is under construction; W. J. Hill has been appointed Manager, St. John, N.B. branch; Malcolm Cordell has been appointed Manager Montreal branch; Geo. L. Nies has been appointed Manager Calgary branch; and Archibald Turnbull has been appointed Manager Saskatoon branch.

Davis-Bournonville Co., Jersey City, N.J., has issued a catalogue of oxy-acetylene apparatus, acetylene generators, welding and cutting torches, pressure regulators, and portable outfits.

Electric Service Supplies Co., Philadelphia, Pa., has issued to superintendents of motive power, and electrical engineers in the steam railway field, its engineering report 303, "Discussion of golden glow glass reflectors, and their relation to the locomotive headlight question."

Northern Electric Co., Montreal.—A. Dwight Smith has been transferred from the position of Sales Manager, to the General Head Office Sales Department, where he has jurisdiction over sales to railways, marine concerns and fire alarm departments throughout Canada. He was one of the first to study and introduce telephone train dispatching in Canada, as it is today, and was a pioneer in telegraph construction on the later built railways in the west. He is a son of A. B. Smith, who was Manager of Telegraphs, G.T.R. and G.T.P.R., until his retirement, a few years ago, on account of ill health.

Trawler and Drifter Sales.—The Anderson Co. of Canada has sold T.R. 59 to T. M. Kirkwood, Montreal, who has arranged options on a further nine through the Naval Service Department. This ship left Halifax for Montreal early in June. The British Admiralty has arranged for the sale to the Rose Street Foundry & Engineering Co., London, Eng., of 40 drifters and 8 trawlers, and 20 men, under Capt. Munro, have been sent from England to Halifax to take the ships over. Drifters 3, 4 and 81, lying recently at New York, and drifter 5, lying recently at Norfolk, Va., have also been sold by the Anderson Co., New York.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Franklin Automatic Wedges avoid this uncertainty.

They adjust themselves mile by mile, at running temperature as the engine works.

They protect every bearing on the locomotive.

Their use means more locomotive miles between shopping.

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of Canada, Limited
Transportation Bldg., Montreal

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### BUCKETS
We offer a large variety of styles and sizes of Steel Buckets, either Tipping or Bottom Dumping. Our prices are right, and we guarantee satisfaction as to both material and workmanship.

Standard Derrick Engine, made in 7 sizes, from 10 to 50 Horse Power.

### SMALL CARS
We catalogue a great many types of small cars, in a large range of sizes. We are prepared also to build to order any kind of small car you want, and in any quantity from one up.

### CAR IRONS
For repairing your small cars. Best chilled wheels, made of special charcoal iron. Steel Axles. Any kind of bearing or grease box you prefer. We supply complete sets, any size wheels or axles, and for any gauge track. Roller Bearings also fitted in car wheels if desired.

**Let us send you our Catalogue. It will interest you.**

**MARSH ENGINEERING WORKS, LIMITED** Established 1846 **Belleville, Ontario**

General Sales Agents: MUSSENS, LIMITED, Montreal, Toronto, Winnipeg and Vancouver.

# In stock for immediate shipment
## New
## Triple Expansion Marine Steam Engine
## 520 H.P. 150 R.P.M. 185 lbs. Steam Pressure

| | | |
|---|---|---|
| HP. | Cylinder | 12¾ inches |
| Intermediate | " | 21½ " |
| L.P. | " | 35 " |
| Stroke | | 24 " |

Condenser, Air, Bilge and Feed Pumps, up to and including thrust bearing included with engine.

Approximate weight 34,000 lbs. Manufactured by the Marine Engine Works, Chicago, Ill.

## The General Supply Co. of Canada, Limited

Ottawa, Ont. Montreal, Que. Toronto, Ont. North Bay, Ont.
Winnipeg, Man. Vancouver, B. C.

## ELECTRIC TRAVELING CRANES

ELECTRIC AND HAND CRANES

**NORTHERN CRANE WORKS** LIMITED
WALKERVILLE, ONTARIO

ELECTRIC AND AIR HOISTS

# Car Closets
Flush or Dry

**DUNER CO.** 101 S. CLINTON ST. CHICAGO

# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

**ADVERTISING RATES.**

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.
Allow five words where replies are to be sent to a box number. Minimum order—$1.
Rates under other headings and for display advertisements on application.

Rails, Cars, Locomotives
and Contractors' Equipment

IMMEDIATE SHIPMENT

**John J. Gartshore**
58 Front Street West
TORONTO

## Transportation Conventions in 1920

Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.
Oct. 11 to 15.—American Electric Railway Accountants Association, Atlantic City, N.J.
Oct. 11 to 15.—American Electric Railway Engineering Association, Atlantic City, N.J.
Oct. 11 to 15.—American Electric Railway Transportation and Traffic Association, Atlantic City, N.J.
Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Arthurities. M. P. Fennell, Jr., 57 Common St., Montreal.
Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.
Canada Freight Association (Eastern lines)—G. C. Ransom, 909 Shaughnessy Bldg., Montreal.
Canadian Freight Association (Western Lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.
Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Engineering Institute of Canada—F. S. Keith, 176 Monsfield St., Montreal.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.
Niagara Frontier Summer Rate Committtee—James Morrison, Montreal.
Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.
Railway Association of Canada—W. M. Neal, Montreal.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.
Transportation Club of Vancouver — H. W. Schofield, 556 Church St., Vancouver, B.C.

**CARGO CRANES**
Equipped with
Balanced Hoist
and
Telescopic Boom
*(Travel patents)*
**THE HERBERT MORRIS CRANE & HOIST CO., LTD.**
Niagara Falls CANADA

Third Rail Terminal, Showing Method of Attaching to Rail.

**STANDARD**
**Cable Accessories**
include a complete line of Outdoor (Type D.O.A.) and Indoor (Type D.S.) Cable Terminals, Cable Junction Boxes, "Ozite" Insulating Compounds, etc.
These have been developed during 37 years' experience in the manufacture and installation of Electric Wires and Cables.
*Our experience is at your service.*
**Standard Underground Cable Co. of Canada, Limited**
Hamilton, Ont.
Montreal Toronto Seattle

**For Sale**

"We are now prepared and glad to furnish Stucki Side Bearings per Canadian Patents Nos. 187019 and 170780 upon request. Please call—The Holden Co., Ltd., Montreal, Canada."

**DEPARTMENT OF THE NAVAL SERVICE, DOMINION OF CANADA.**

**NOTICE OF SALE.**

SEALED tenders addressed to the undersigned and endorsed on the envelope "Tender for Naval Vessels" will be received up to noon of Monday, the 2nd day of August, 1920, for the purchase of the following ships:—

"Niobe"—steel armoured cruiser, Spartiate type, length O.A. 462′ 6″; beam, 69′; max. draught, 27′ 6″; displacement, 11,000 tons; built 1892.

"Rainbow"—steel cruiser, Appolo type, length, 300′; beam, 43′ 9″; max. draught, 18′; displacement, 3,400 tons; built 1891.

This vessel could be utilized to advantage as a cargo ship with slight alterations.

"Grilse"—steel pleasure yacht, oil burning; length, 202′; beam, 18′; draught, 6′; gross tonnage, 287; speed, 32 knots; built 1912.

"Canada"—steel, length, 206′; beam, 25′; depth, 13′; gross tonnage, 410; built 1904.

These ships will be sold as they lie.

The "Rainbow" is lying at Esquimalt, B.C., and the "Niobe", "Grilse" and "Canada" at Halifax, N.S., where permission to inspect them may be obtained on application to the Superintendents of the dockyards.

Each tender should be accompanied by a certified cheque on a chartered Canadian bank for 10% thereof, as a guarantee of good faith.

The Department reserves the right to reject any or all tenders received.

Full information and particulars may be obtained on application to the Undersigned or to the Superintendents of the dockyards.

G. J. DESBARATS,
Deputy Minister
of the Naval Service.

Ottawa, Ont., June 4th, 1920.
Unauthorized publication of this advertisement will not be paid for.

**IMPERIAL BANK OF CANADA**

Capital Authorized.....$10,000,000
Capital Paid up..... 7,000,000
Reserve Fund..... 7,500,000

**Head Office: Toronto.**

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the World.
Sterling and New York Exchange bought and sold.
Savings Department: Interest allowed on deposits at best current rates.
Branches throughout the Dominion of Canada.

# DEPENDABLE POWER EQUIPMENT

## LAND AND MARINE

3 G. & McC. Sectional Water Tube Boilers at the plant of the Robson Leather Co., Oshawa, Ont.

G. & McC. Sectional Water Tube Boilers are fitted with large steam and water drums, have connecting nipples of increased size, and straight 4″ tubes, all of which tend to insure positive and rapid circulation and increased steaming capacity. All parts subjected to steam pressure are made of forged steel. G. & McC. Boilers are providing highly satisfactory service in hundreds of Canada's leading power plants. Ask the owner or the engineer what he thinks of them.

**We build Horizontal and Vertical Steam Engines, Steam Turbines, Return Tubular and Water Tube Boilers, Centrifugal and Reciprocating Pumps and Condensers, Heaters, Tanks, Stacks, Safes, and Vaults.**

***Ask for Catalogues, Plans, Specifications, and Prices.***

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QUEBEC AGENTS: Ross & Greig, 400 St. James St., Montreal, Que.

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ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
REPORTS, DESIGN AND CONSTRUCTION
Complete Railway Shop and Terminal Properties
Electrification of Steam Railroads.
OUR EXPERIENCE COVERS THIRTY-FIVE PLANTS
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**ANGUS SINCLAIR, C.E.**
*Railway Contractor*
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Adelaide and Toronto Sts., Toronto

ROBERT W. HUNT, President CHARLES WARNOCK, Vice-Pres. and Genl. Mgr.

**Robert W. Hunt & Co., Limited**

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**Chemists and Metallurgists**

Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement; Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.

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REPORTS ON PROPERTIES AND PROCESSES.

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**Branches: TORONTO VANCOUVER LONDON, ENGLAND**

**DOMINION TOWING & WRECKING CO., LIMITED**

Tug Strathmore
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**Harbour Tug Service**

Lighter Strathbuoy—Capacity, 700 tons.

Equipped for all kinds of Towing, Wrecking, Etc.
Sand and Gravel supplied for Concrete Work, Rock and Soil Filling for Cribwork.

Dock Telephone, South 184; Head Office, South 2383. JOHN BELL, General Manager, 509 Grain Exchange, Fort William, Ont.

**Canadian Gold Car Heating & Lighting Company, Limited**

ECONOMICAL—SYSTEMS OF MERIT—WILL NOT FREEZE

Vapor Systems, Pressure Systems, Vapor and Pressure Systems, Hot Water Systems, Electric Systems
Automatic Heat Control for all Systems—Ventilators

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**CHICAGO RAILWAY SIGNAL & SUPPLY COMPANY**

*Manufacturers of All the Name Implies*

Interlocking and Electric Signals and Materials, Highway Crossing Alarms, Forgings, Castings, Etc.

CANADIAN DISTRICT OFFICES.
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**Malleable Castings** High Grade Material First Class Service

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**REID TOWING & WRECKING CO. LTD.**
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Tugs, Divers, Steam Pumps, Hydraulic Jacks, Lighters, Wrecking Hawsers, Etc.

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**Consulting Railway Operating Engineers**

Reports, Freight and Passenger Yards and Terminals, Single Track Capacity, Side Track Location, Interlocking and Block Signal Design and Construction.

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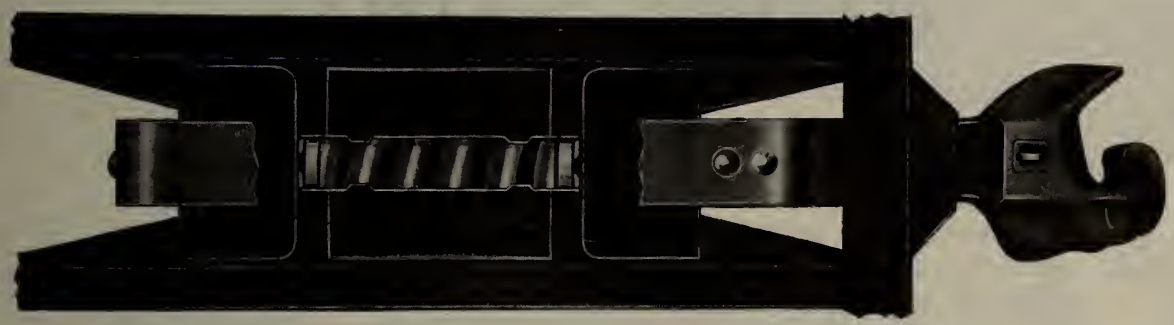
**MADE IN CANADA**



If the superiority of this device has never been apparent to you, it will be upon thorough investigation. For it will reveal that our claims for excellence are based on actual facts.

May be used with any draft attachment.

In use on thousands of cars, including U.S. R.A. standard cars.

KEYOKE RAILWAY EQUIPMENT CO.

**Chicago, Ill.**

*Canadian Agents,*

**INTERNATIONAL EQUIPMENT COMPANY, LIMITED**

**Transportation Building, Montreal, Quebec**

FOR

# All Locomotive Boilers

Our latest development—

## The "F. B. C." WELDED FLEXIBLE STAYBOLT

is vastly superior in service and strength to any other type of flexible staybolt now in use, and much lower in cost.

Retaining all the essential parts of the TATE bolt that insure flexibility, it overcomes the fundamental weakness in all threaded connections, i.e., leakage, crystallization of steel in sleeve, which will eventually cause breakage, many varied sizes of stock sleeves required, and cost of application. Welded sleeves, when properly applied, can never leak: threaded sleeves, because of strains and stresses of the wrapper sheet, will eventually leak.

Welded sleeves are forged, whereas threaded sleeves are made of cold rolled steel (to obtain good threads) and therefore subject to crystallization.

### Three sizes of "F. B. C." welded sleeves replace seventeen sizes of threaded sleeves

The "TATE" Flexible Staybolt revolutionized the art of staying Locomotive Boilers, as is proven by the fact that it is used by over ninety-seven per cent. of the Railroads, and we will gladly furnish this type of staybolt to those roads who do not desire the Welded Bolt, but we recommend the latter as an improvement over the threaded connection.

*Specify*

**"F.B.C." Welded or "TATE" Flexible Staybolts**
**In New Equipment and Repairs**

# Flannery Bolt Company

**Vanadium Building** **Pittsburg, Penna.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.

# FAIRBANKS-MORSE

FAIRBANKS-MORSE QUALITY F M 100%

## Building a Bigger Canada

THESE are days of progress—days when industry is leaping ahead and Canada is assuming her place in the world of commerce. Giant structures are being reared to house the machinery, men and equipment necessary to a bigger business.

Great highways are being constructed to provide for the easier transportation of Canada's products; elevators, wharves, factories, mills, mines—everywhere the hand of the contractor is set to some big task.

And wherever this construction work is going on, Fairbanks-Morse contractors' equipment is playing an important part—rendering its services as a factor in this work of progress. From the shovel to the steam and electric hoists, from the concrete mixer to the heavy road machinery, drill and jack, to truck and railway car, Fairbanks-Morse equipment is the choice of the contractor, because he knows that behind the smallest tool is the same quality guarantee and service that supports the largest unit of Fairbanks-Morse equipment.

He knows that the Fairbanks-Morse 100% quality seal is the ideal of the Fairbanks-Morse institution—a standard and a guide in building a bigger Canada.

**The Canadian Fairbanks-Morse Co. Limited**

*Canada's Departmental House for Mechanical Goods*

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11

VALVES AND STEAM GOODS

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KILL
LAST AD

THE Dominion Oxygen Company, Ltd., announces the satisfactory progress of its building program.

Work on the Toronto Plant is making excellent headway and a suitable site has been purchased in Montreal where construction work will promptly begin.

Land for the additional plants provided for in the initial plans of the Company is being negotiated for in leading cities.

Meanwhile a practical Service System is undergoing organization and a net-work of suitably located warehouses and service stations will be established.

Pending further announcement the oxygen users of the Dominion are invited to write for detailed information as to the broad scope and liberal policy of the Dominion Oxygen Company, Ltd.

DOMINION OXYGEN COMPANY, Ltd.
Hillcrest Park
Toronto, Canada

D-3

# DUPLEX STOKERS

## Run from Shopping to Shopping of the Locomotive

**Simplicity of design and ruggedness of build are marked characteristics of the Duplex Stoker.**

**One road with 25 Duplex Stoker-fired engines reports an average of 90,500 engine miles per stoker failure.**

**Another road with 4 Duplex Stoker-fired engines obtained an average engine mileage of 191,600 miles per stoker failure.**

**Skilled design, high grade materials and careful workmanship enable the Duplex Stoker to easily run from shopping to shopping of the locomotive.**

**The Duplex Stoker is going strong with—**

*Over 4,400 of our Stokers in Service and on Order.*

# Locomotive Stoker Company

**Railway Exchange**
**Chicago, Ill.**

**Main Office and Works**
**Pittsburgh, Pa.**

**50 Church St.**
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SAFETY FIRST
Use

# "DOMINION" Wire Rope

Tough—Strong—Durable

**The DOMINION WIRE ROPE Co., Limited**

MONTREAL WINNIPEG TORONTO

# The Best Ballast Car Ever Built

**Canadian National Railways Standard Ballast Car**

For Ballasting Center Dump

For Ballasting Side Dump

For Coal or General Service

Built of Materials Obtained in Canada

Built to any size or Capacity

*Write for Booklet No. 19 for further information.*

—DESIGNED, PATENTED AND BUILT IN CANADA—

## The HART-OTIS CAR CO., Limited, MONTREAL

# "Industrial Works" Cranes

Increase Profits by Reducing Handling Costs

# "Ransome" Mixers

Concrete Carts—Buckets
Wheelbarrows

**Railway and Contractors' Supplies**

Branch:
**108 Mail Building**
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Limited

Head Office:
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# New Whiting TURNTABLE TRACTOR

Sheet steel housing removed to show machinery.

A simple, rugged design, built to stand up under most severe service. Made for turntables of any capacity and pit rail radius.

All machinery is located underneath cab floor and enclosed on all sides in sheet steel housing. Sliding doors give ready access for inspection and repair.

*Send for Detailed Specifications*

**WHITING FOUNDRY EQUIPMENT CO.**
**Harvey (Chicago Suburb) Illinois**

Locomotive and Coach Hoists—Transfer Tables

**WHITING**

**CRANES OF ALL TYPES / FOUNDRIES EQUIPPED COMPLETE**

# $95 an Hour!

"Every hour I spent on my I. C. S. Course has been worth $95 to me! My position, my $5,000 a year income, my home, my family's happiness—I owe it all to my spare time training with the International Correspondence Schools!"

Every mail brings letters from some of the two million I. C. S. students telling of promotions or increases in salary as the rewards of spare time study.

What are you doing with the hours after supper? Can you afford to let them slip by unimproved when you can easily make them mean so much? One hour a day spent with the I. C. S. will prepare you for the position you want in the work you like best.

Yes, it will! Two million have proved it. For 29 years men in offices, stores, shops, factories, mines, railroads—in every line of technical and commercial work—have been winning promotion and increased salaries through the I. C. S. More than 100,000 men and women are getting ready *right now* with I. C. S. help for the bigger jobs ahead.

**Your Chance Is Here!**

No matter where you live, the I. C. S. will come to you. No matter what your handicaps, or how small your means, we have a plan to meet your circumstances. No matter how limited your previous education, the simply written, wonderfully illustrated I. C. S. texthooks make it easy to learn. No matter what career you may choose, some one of the 280 I. C. S. Courses will surely suit your needs.

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Explain, without obligating me, how I can qualify for the position, or in the subject, before which I mark X.

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| ☐ Locomotive Fireman | ☐ Private Secretary |
| ☐ Traveling Engineer | ☐ TRAFFIC MANAGER |
| ☐ Traveling Fireman | ☐ BOOKKEEPER |
| ☐ Air Brake Inspector | ☐ R. R. Agency Accounting |
| ☐ Air Brake Repairmon | ☐ R. R. Gen'l Office Acc'ting |
| ☐ Round House Foreman | ☐ Higher Accounting |
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| ☐ Mechanical Draftsman | ☐ ADVERTISING |
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| ☐ Stationary Engineer | ☐ Electric Lighting |
| ☐ Marine Engineer | ☐ Electric Railways |
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| ☐ Surveying and Mapping | ☐ MINE FOREMAN OR ENG'R |
| ☐ R. R. Constructing | ☐ CHEMIST |
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| ☐ Architectural Draftsman | ☐ Auto Repairing |
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Name_____
Occupation & Employer_____ 7-25-19
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## Supreme for Railway Motor Cars

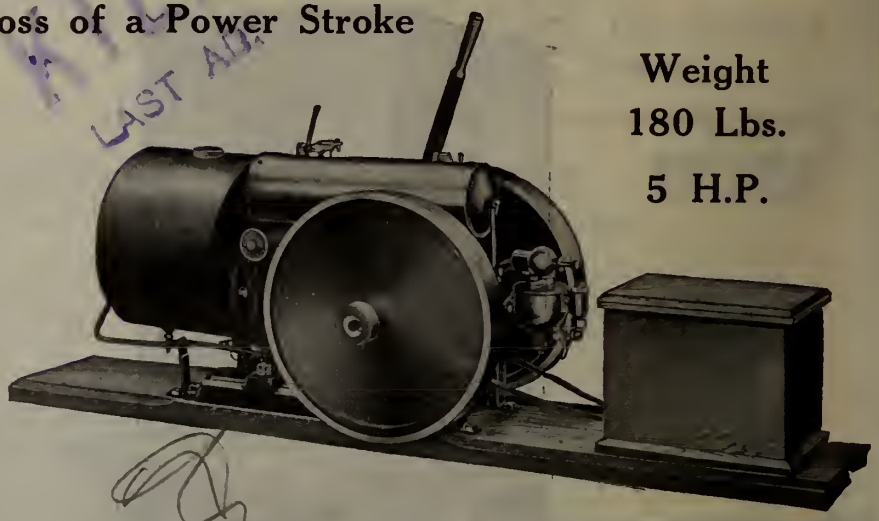
**Reversible Without the Addition of Extra Parts or Without The Loss of a Power Stroke**

The Unit Speed Control "is a dandy — the best patent yet," say delighted foremen.

Our patented self-adjusting sliding base compensates for wear.

The shifting lever can't pinch your hand—it's "under your thumb" from either side of the engine.

***A Light Weight Engine of Proven Durability***



**Weight 180 Lbs.**

**5 H.P.**

GUARANTEED FOUR YEARS

**WOOLERY MACHINE CO., Minneapolis, Minn., U.S.A.**

C.M.C.

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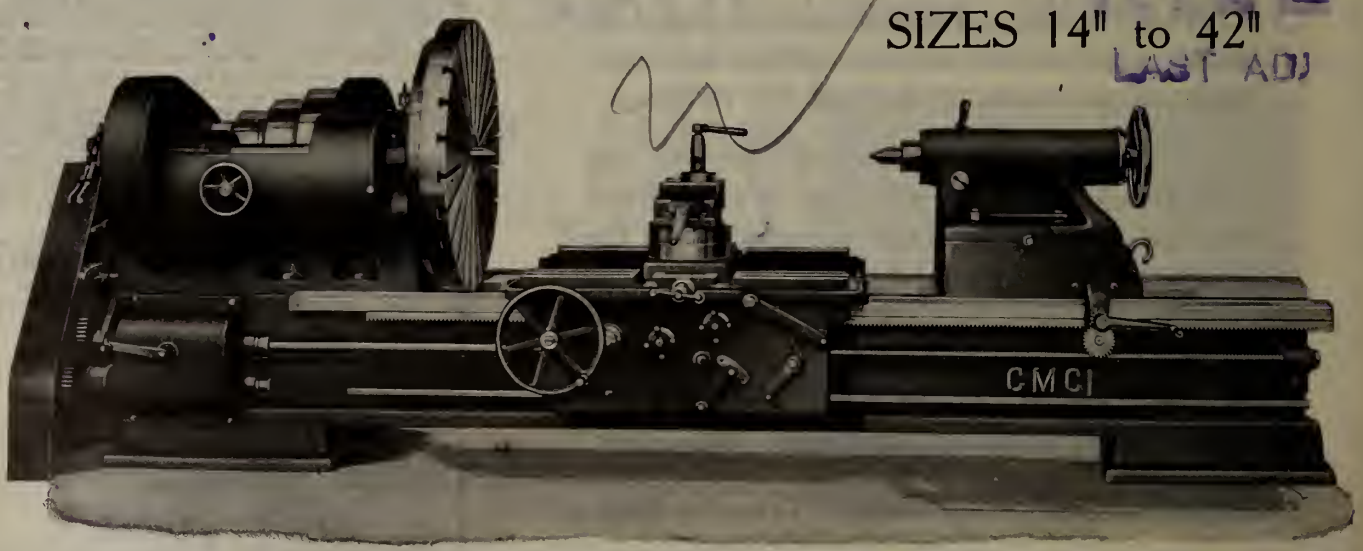
SIZES 14" to 42"




The illustration is of our 42" lathe with triple geared to face plate drive

**CANADA MACHINERY CORPORATION, GALT, ONTARIO**

LIMITED

**Toronto Office and Warerooms, Brock Avenue Subway.**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# COMMERCIAL ACETYLENE

On Small Work

Repairing a small cast iron bracket at a large shipbuilding plant. Our tanks are convenient, safe and guaranteed to hold quantity and quality gas.

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18 TORONTO STREET TORONTO

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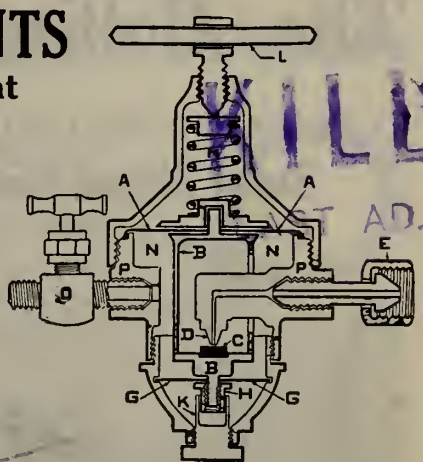
The G.W.& E. Co.'s REGULATORS ARE OF THE DOUBLE DIAPHRAGM SYSTEM, THAT IS TO SAY, THE MOVABLE CENTERPIECE B CARRYING SEAT C IS NOT ONLY TIGHTLY FASTENED TO MAIN DIAPHRAGM A BUT ALSO WITH FITTING H TO REAR DIAPHRAGM G. THUS SEAT C IS FORCIBLY GUIDED AND RESTRICTED TO AN ABSOLUTELY STRAIGHT UP AND DOWN MOVEMENT, KEEPING ALWAYS THE SAME RELATIVE POSITION TO NOZZLE D. THE REAR DIAPHRAGM ACTS AS A FORCIBLE AND FRICTIONLESS GUIDE AND ALSO AS A QUICK ACTING DOUBLE WAY SPRING ENFORCING AN ACCURATE AND SENSITIVE REGULATION.



*NO OTHER REGULATOR HAS THESE ESSENTIAL FEATURES*

*Sole Agents for Canada*

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**Head Office, MONTREAL**

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# The Star Brass Works

*Largest Exclusive Trolley Wheel Makers in the World.*

**Kalamazoo** **Michigan**

**Canadian Representatives:**

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Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

**Dawson & Co., Limited, 148 McGill St., Montreal**
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# The Collingwood Shipbuilding Co.

**Limited**

COLLINGWOOD—ONTARIO and KINGSTON—ONTARIO—CANADA

**Steel Ships, Engines, Boilers, Castings, and Forgings**

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK

S.S. CANADIAN WARRIOR

Two Dry Docks
and
Shops
EQUIPPED TO
OPERATE
Day or Night
on
Repairs

A LINE OF P♔H WROUGHT TUBULAR STEEL POLES ON THE BLOOR STREET VIADUCT—TORONTO, CAN.

MADE IN CANADA.

P♔H

# Tubular Poles

NEAT, UNIFORM AND ORNAMENTAL
in appearance, combined with
GREAT DURABILITY, STIFFNESS AND STRENGTH
make them ideal for
ELECTRIC LIGHT AND POWER
TELEPHONE, TELEGRAPH
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LINES
and also for
FLAG POLES,
all sizes and weights.

## PAGE-HERSEY
**Iron, Tube & Lead Co., Limited**
HEAD OFFICE:
**100 Church Street - Toronto, Can.**

# Morganite Motor and Generator Brushes

Brushes with a reputation for successfully overcoming commutating troubles. Many different grades of Graphite, Carbon Graphite, Metal and Traction brushes. Brushes for every class of service.

**Made in England at Battersea Park, London.**

Send us particulars of your machine and we will supply you on trial, brushes that will save you money and worry. *Now* is the time to give them a trial.

***For information write***

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**133 Eastern Ave., Toronto, Ontario**

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**FRICTION DRAFT GEAR**

CLASS
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THE
PERFECT
DRAFT GEAR

**MINER**
**BALANCED**
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SAVES RAILS
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# CANUCK SUPPLY CO., LTD.

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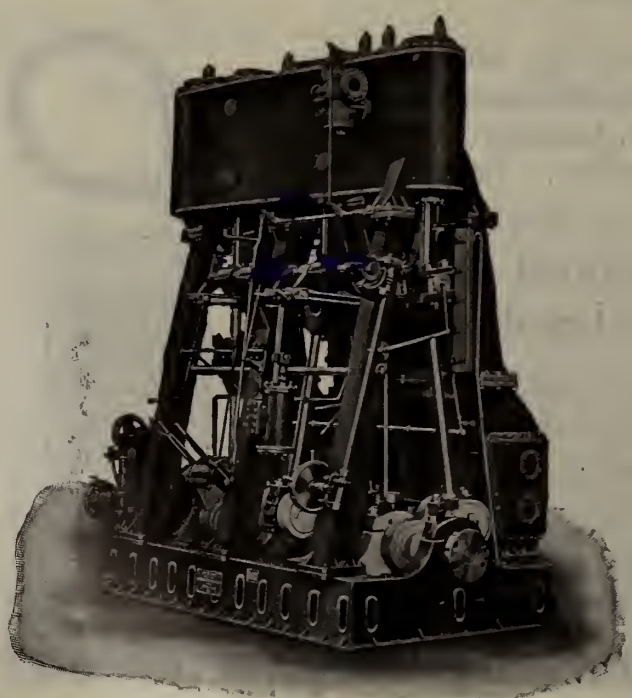

40" Stroke Engine Built for Imperial Munitions Board.

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Marine Engines
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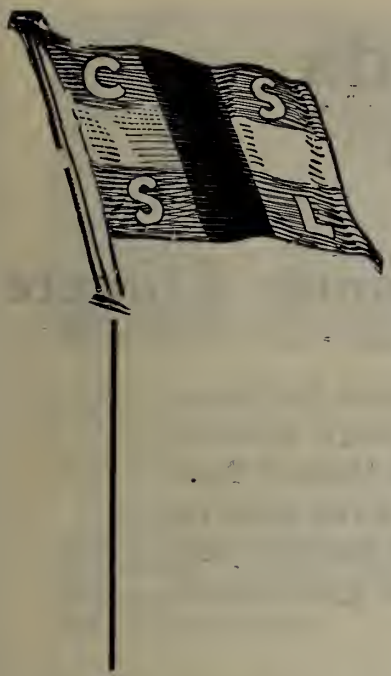
Works - Amherst, N. S.

Head Office - Box 780, Montreal




Plan your vacation to take advantage of these boat trips. Information at any Ticket office.

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After June 14th, service daily, including Sundays, from Toronto to 1,000 Islands, Montreal, Quebec and the Saguenay River.

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Daily service to Niagara-on-the-Lake, Queenston and Lewiston — connecting at Lewiston and Queenston with Trolley Lines for Niagara Falls, Buffalo and U.S. points.

Full Summer schedule now in effect.

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Passenger and Freight Service. Frequent Sailings from Montreal. Further Particulars upon request.

**SHIP YOUR FREIGHT BY WATER**

Save both Time and Money.

We have excellent facilities for Handling Freight of all Kinds. Through Bills of Lading issued via all Ocean Lines, via Montreal.

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**Head Office: Victoria Square, Montreal**

*Made in Canada*

# OLD ENGINES AS GOOD AS NEW

New engines do more work than old engines not because the parts are new but because they are of a better type.

Old engines of same weight are as good if they have the better parts.

The old engines with the new devices are modern engines.

Universal Valve Chests convert antiquated saturated steam engines into useful and economical power.

**Franklin Railway Supply Co. of Canada, Limited**

**Transportation Bldg., Montreal**

GRAND TRUNK RAILWAY SYSTEM

# The Highlands of Ontario

## *Vacation Land of Perfect Summer Climate*

Hay fever unknown. One thousand to two thousand feet above the sea. Air scented with pine and balsam. Modern hotels in Algonquin Park, Muskoka Lakes, Georgian Bay, Lake of Bays, Kawartha Lakes and Timagami. A short, pleasant ride from Toronto, and you are in the midst of a charming summer playground. Fishing, boating, bathing, golf and the great out-of-doors. Write for free illustrated literature.

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Union Station,
Toronto, Ont.

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# Most Reliable Under All Conditions

# PEDLAR'S "PERFECT" TONCAN METAL CULVERTS

ONCE you install a Pedlar Culvert you can go away and forget it. It will never give trouble from any cause, being equal to any strain to which it may be subjected and absolutely immune from damage by frost or ice.

The material from which it is made, the celebrated anti-corrosive Toncan Metal, is another factor that contributes to its unrivalled durability. Time has no effect on Toncan Metal. It will not rot or corrode and in this respect is far ahead of any other material ever used in culvert construction.

Easily and quickly installed anywhere with less labor than any other kind of culvert.

Made in sections 8 to 84 inches in diameter (inside measurement). Coupling bands supplied free for longer lengths than 40 feet.

Write for Culvert Booklet R.M.

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(ESTABLISHED 1861)

Executive Offices and Factories: OSHAWA, ONT.

Branches:—Halifax, St. John, N.B., Montreal, Quebec, Ottawa, Toronto, Winnipeg, Vancouver.

KILL LAST AD.

Cut returned to Miss Patterson July 25.

Three Thermit welds made on a Pittsburgh & Lake Erie R.R. locomotive, McKee's Rocks, Pa. Two sections were cut out of this frame and new pieces forged, machined up and welded in.

## Testimonial THERMIT WELDING No. 10,001

***From the Southern Railway, Spencer, N. C.***

"We have been doing lots of Thermit welding day and night for the last two years. If it were not for Thermit I do not know how we would have gotten by. There has been so much work to do that we have no time to take frames down, that is, to repair them, so we use Thermit. I want to say that if it had not been for Thermit, this road would never have done the work it has done in the last two years.

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**Send for Pamphlet No. 2144.**

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After all, it's the man who uses a file day after day who is the best judge.

Ask any workman who uses files constantly in his day's work, and he will tell you that Famous Five Files represent the standard of file quality.

Adherence to the highest standards in manufacture for over fifty years has earned this reputation.

Specially made steel, accurately cut teeth, thorough hardening, are the secrets of their success.

They are:

**KEARNEY & FOOT** **AMERICAN**
**GREAT WESTERN** **ARCADE**
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**Made in Canada by:**

# Nicholson File Company

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# CRANES

Electric and Hand Power Direct or Alternating Current Standard Bridge Cranes.

Revolving Hammer Head and Luffing Boom Types for Shipbuilding and Unloading Wharf.

Also Gantry and Special Types.
(Capacity 2 Tons to 200 Tons)

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## Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

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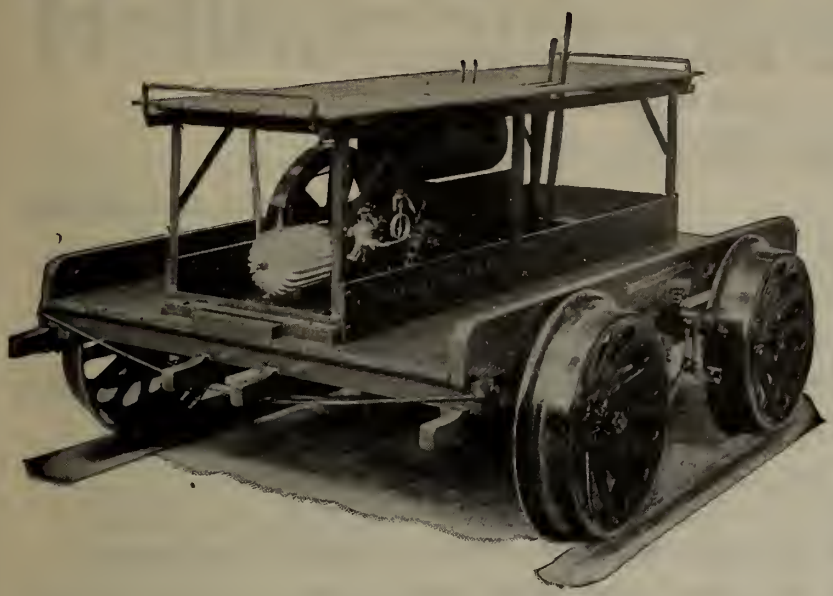
# Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

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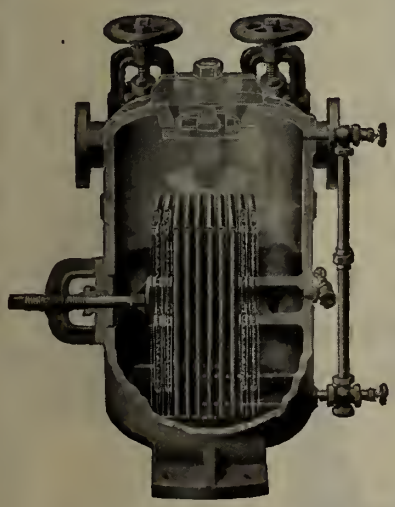
Canadian Representatives:—Kelley Powell Co., Ltd., Winnipeg; Woreham, Bates & Goode Trading Corp., Montreal.

# THE REILLY MULTI-SCREEN FEED-WATER FILTER



The hot distilled water secured from marine power plants, operating condensing, is ideal for boiler feed after the oil which it contains has been removed.

The Reilly Multiscreen Feed Water Filter and Grease Extractor efficiently removes this oil from the water. It is also suitable for the removal of mud or sand from lake or river water when used for boiler feed.

The area of the filtering surface is 500 times the area of the water inlet passage, far exceeding that of any other filter regularly manufactured, thus insuring a slow and efficient rate of filtration through the filtering cloths.

By-pass valves, allowing the uninterrupted flow of water to the boiler, and a standard manhole in the top of each filter for the removal of the cartridges, make cleaning a very easy operation.

MADE IN CANADA BY

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ANHYDROUS AMMONIA ($N.H_3$.) COLD AIR MACHINERY CARBONIC ANHYDRIDE ($C.O_2$.)

Improved Ethyl Chloride Systems

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Maintaining efficient service entails the use of many materials, not the least important of which, is oil.

Dirty oils, the results of careless storage, hamper maintenance and efficiency.

BOWSER ESTABLISHED 1885

stored oils are clean and free-flowing. They retain their useful qualities. Records are accurately kept and time and labor saved by the use of Bowser measuring pumps.

*An analysis by our engineers does not put you under obligation. Write for this service.*

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The illustration to the right shows the Bowser Figure 106 gallon pump. Can be used for all lubricating and non-lubricating oils. Rapid and accurate in operation.

The most efficient gallon pump that is manufactured.

KILL
LAST AD.

# BOLINDER'S HEAVY CRUDE OIL ENGINE

The New Motor Tanker "Katherine," equipped with 640 B.H.P. Bolinder Engines.

Suez, Egypt,
Febr. 16th, 1920.

Gentlemen:—

The M.S. "Katherine" arrived at Suez on the 15th, 37 days, 7 hours out of Manilla. The engines ran at full speed the entire trip. They never missed a stroke. Everything is in the very best of condition.

We had a light fair wind in the China Sea, calm sea from Singapore to the Red Sea and strong head winds in the Red Sea. The sails were in use but one day between Singapore and Suez (the Bolinder did it).

We will proceed to Rotterdam as soon as fuel can be taken aboard.

Respectfully,
FRANK UHLEIN,
Chief Engineer of the M.S. "Katherine."

The "Katherine" is one of several recent Bolinder installations—all demonstrating Bolinder Efficiency, Economy and Dependability.

## Swedish Steel and Importing Co., Limited

**Shaughnessy Building, Montreal**

# It is an Established Fact

That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

The Flexibility in the bolt serves to accommodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

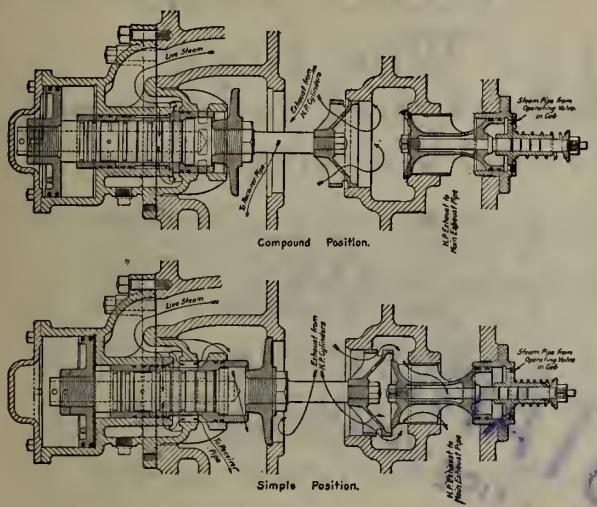
The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefulness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintainance.

***In use on all the prominent railroad systems of Canada.***

## FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

**Manufactured and sold in Canada by CANADIAN ALLIS-CHALMERS, Limited, General Offices, Toronto, Ont.**

# Alco Intercepting Valve




In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

In the ALCO system of compounding these conditions are covered by two of the functions of the intercepting valve.

As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

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DOMINION EXPRESS BUILDING, MONTREAL, CANADA

# Don't sell your big cars. Convert them to real "rushour" cars.

*Standardize!* *Pneumatize!*

There is NO REASON now why your present cars should not be transformed and standardized to give perfect platform economies and a higher rate of passenger exchange and effective fare collection than was deemed possible before the development of NATIONAL PNEUMATIC car speed up devices.

Equip these cars with Pneumatic Door and Step Control.

## National Pneumatic Company, Inc.

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Works: Rahway, N. J.

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# Feeder Cable
# Wire Rope
## Ballast Cables, Switch Ropes and Wrecking Cables

IN stock at each of our warehouses we have a good assortment of standard sizes of Steel Wire Ropes in Siemens-Martin Steel, Crucible Cast Steel, Plough Steel and Extra Plough Steel.

*We also manufacture and carry in stock all kinds of*

**BARE and INSULATED ELECTRICAL WIRE and CABLE**

*Write our nearest office for quotations.*

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We are proud of the record for unvarying reliability which our valves enjoy.

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Complete Apparatus for Harbors and Rivers—Buoys, Beacon Towers and Lanterns

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Brake Beams for all Classes of Cars, Locomotives and Electric Equipment

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## LABOR SAVING MACHINERY

Elevators-conveyors
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Power Transmission Equipment

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Circular Coal Storage System. The modern method of storing coal adjacent to the coaling station.

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***Rates on Application***

"MEAD-MORRISON"

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# Hoisting and Coaling Machinery

*Manufactured in Canada*

**Four "Mead-Morrison" Coaling Towers**

—built in capacities of 300 tons an hour each—loading S. S. W. Grant Morden, one of the largest colliers built in Canada by Port Arthur Shipbuilding Co.

GANTRY CRANES
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CONVEYING MACHINERY
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GRAB BUCKETS

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Locomotive and Car Castings

Cast Steel Couplings
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WHAT'S in a "Van Dorn GEARING" GEAR

In other words, what do you get when you buy "VAN DORN".

Not merely a piece of machined iron, or steel. When you buy "VAN DORN" gearing you get MAXIMUM GEAR SERVICE

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OPERATING EFFICIENCY, as well as DURABILITY.

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AUTOMATIC SAFETY SWITCH STANDS

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**Butterfield Superiority**
in Quality, Finish and Service is built into each and every tool

Angular, Concave, Convex, Form CUTTERS, End Mills, Worm Hobs, Generating Hobs, Hollow Mills.

Gear, Plain Milling, Side Milling, Step Stocking CUTTERS, Metal, Slitting and Screw Slotting Saws, Slitting Discs.

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**Rock Island, Que.**

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Why?

Because these unreinforced brake shoes did not give equivalent service for their cost, having broken in service before their life had barely commenced.

And the remedy?

Use only Reinforced Brake Shoes—then you will get your brake shoe money's worth in long and safe service.

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Save money by using

# The HOLD TITE NUT LOCK

*(Patented)*

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CHEAPNESS. Look at the Washer! Nothing can be made cheaper.

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WHAT MORE? NOTE THE SIMPLICITY—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

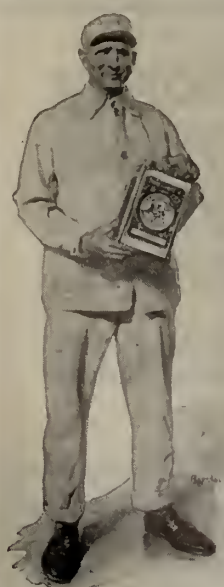
If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

**Edward A. Robinson Co., Limited**

228 Craig St. West Montreal

THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF



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Worlds Largest Makers
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THE RIGHT WAY—
THE TWO WAY—
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Rail Seat inclined and pedestaled
Hook on inside flange of Rail

MADE IN CANADA

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The Triple - Voltage Dry Battery made especially for railway motor car ignition

Portable, high power, moisture proof, and long lived — built to resist abuse

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*"higher service—lower cost per day"*

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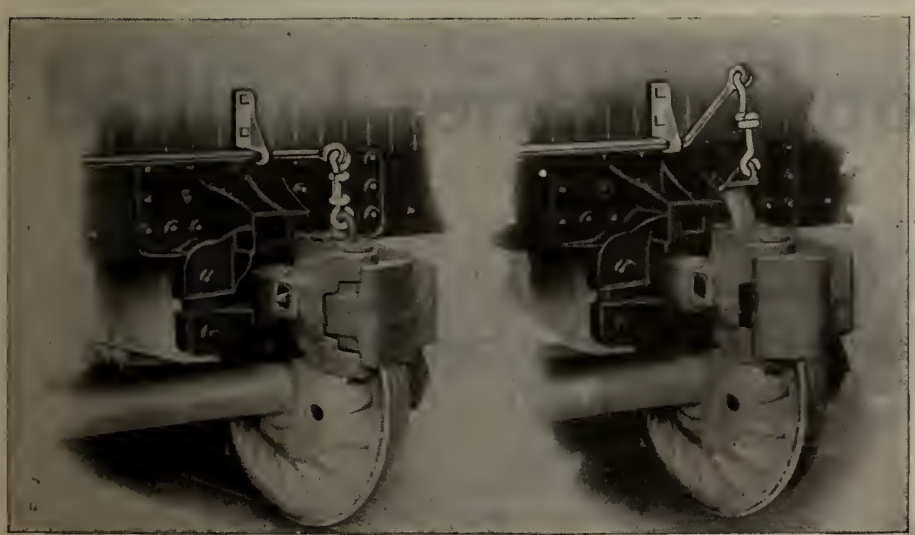

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**Coupler Release Rigging**
(PATENTED)

Positively Prevents Penalty Defects

Requires No Change in Your Standard Hand-Rod

Complies with U.S.R.R. Administration Requirements

**UNION RAILWAY EQUIPMENT CO., McCORMICK BLDG., CHICAGO, ILLS.** ***Works:*** **Hammond, Indiana**

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The rapid increase in the adoption of highly superheated steam indicates the satisfactory results from its application.

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Chilled Tread Cast Iron Car Wheels for All Services
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"Vulcan" Pipe Vises and Pipe Wrenches

In addition to the tools shown, our line includes Set Screws, Cap Screws, Machine Screws, High Speed and Carbon Drills, Files (extra large stock) and a complete line of machinists' tools (Starrett, Brown & Sharpe, etc.)

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Pleased to quote prices and time of delivery.

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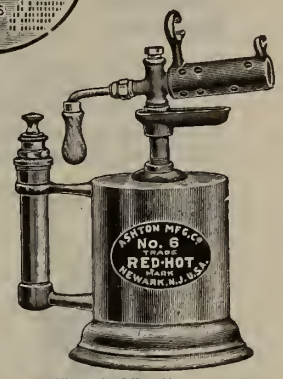


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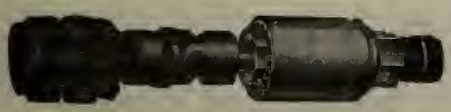

Lagonda Arch Tube Cleaner

Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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# VAPOR CAR HEATING CO. of Canada, Limited

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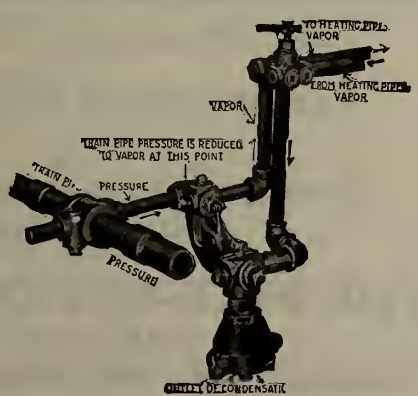


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insure satisfaction in difficult work Correct design, right materials and superior fabrication.

Catalogue No. 16 will give you information desired for size of crane necessary to handle your material.

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Write and ask us about the exclusive features of the Road Boss and what practical railroad men like yourself say about its performance.

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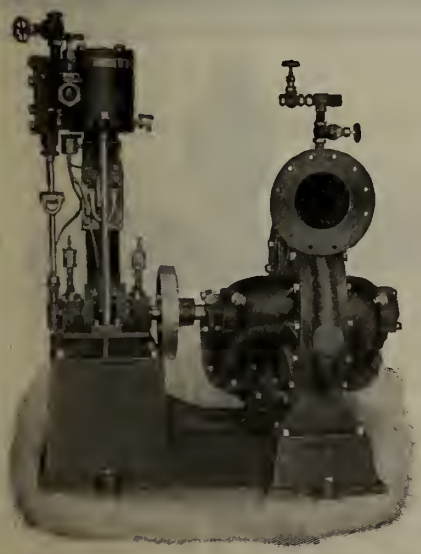

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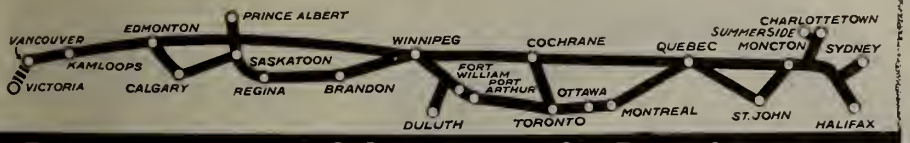


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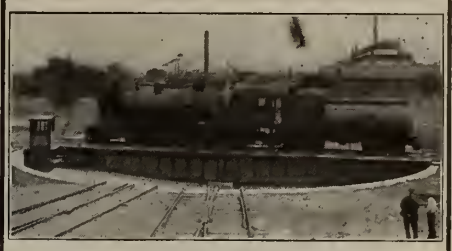

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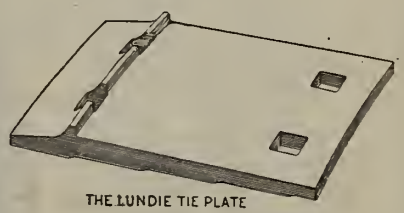

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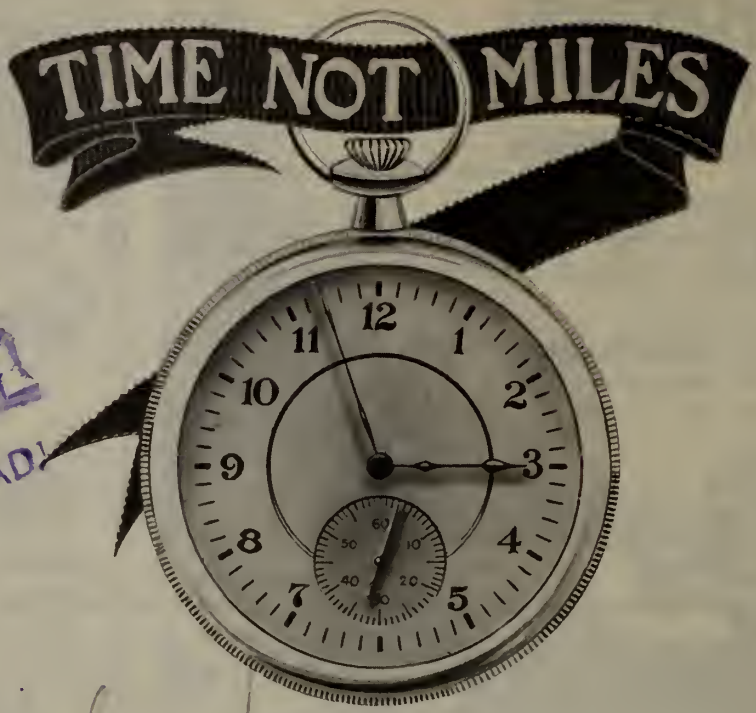


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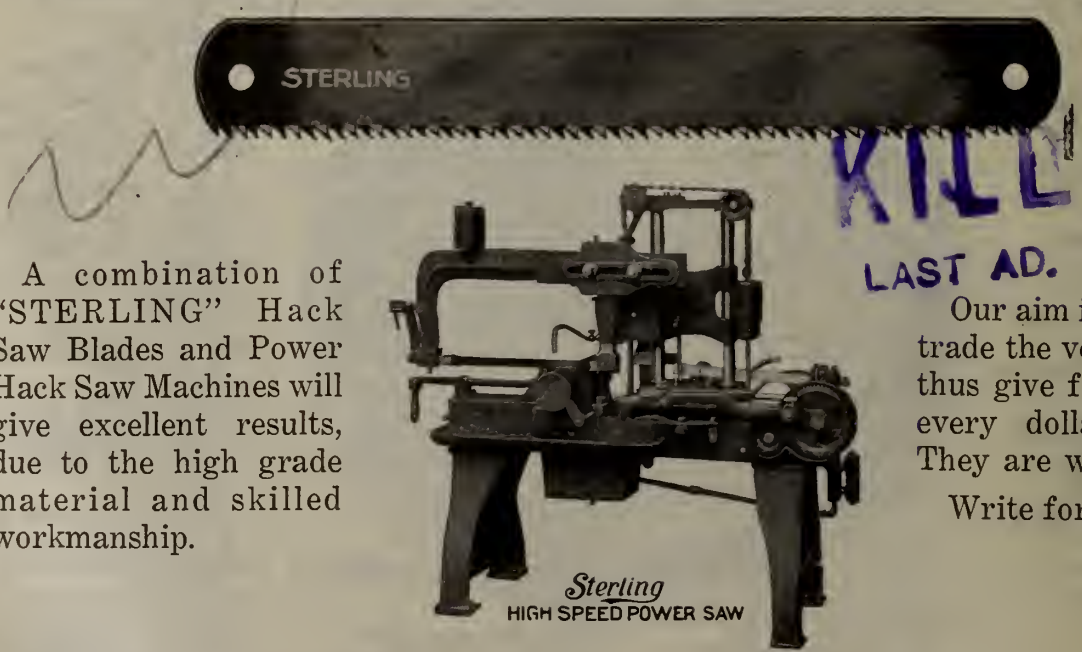


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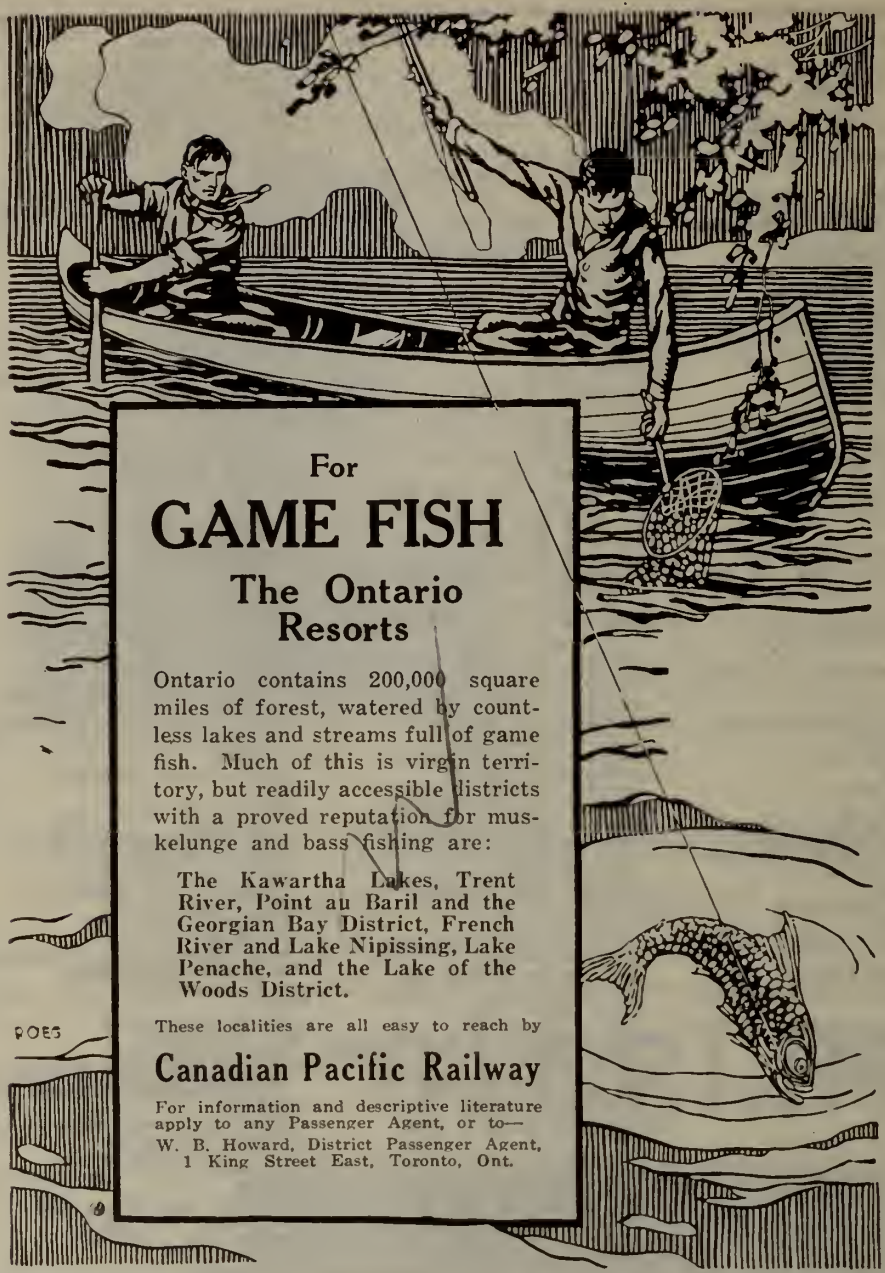

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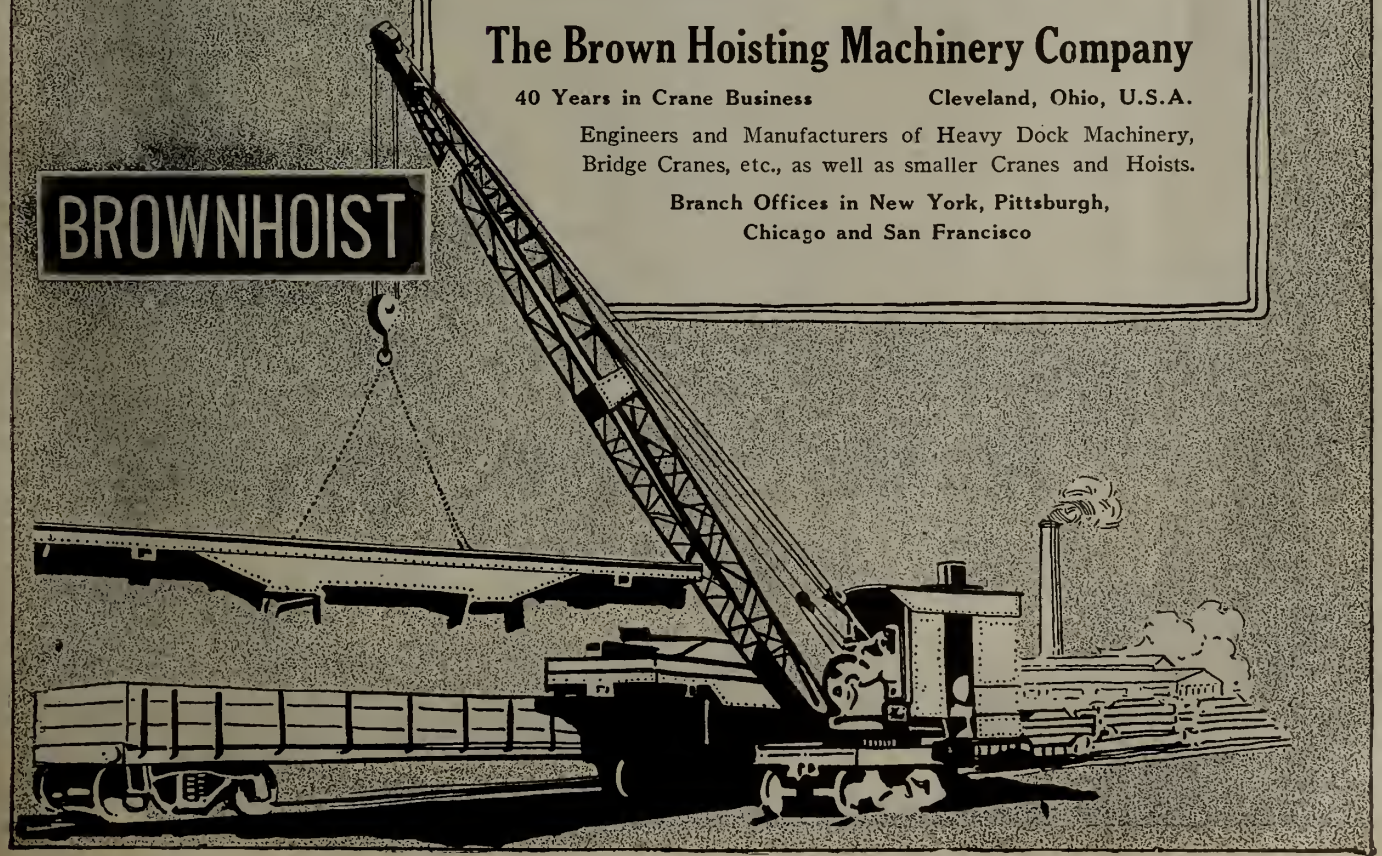

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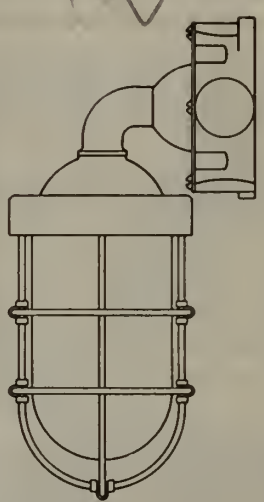

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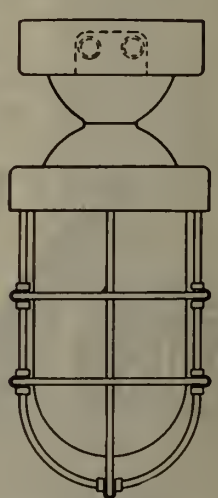

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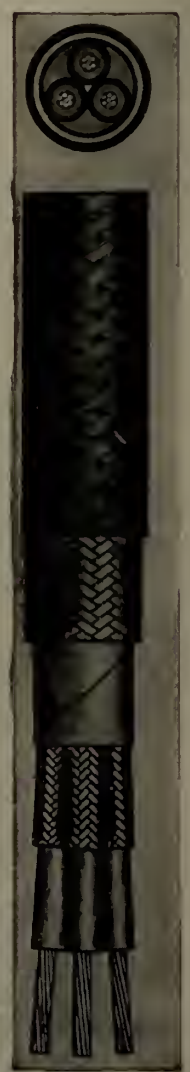

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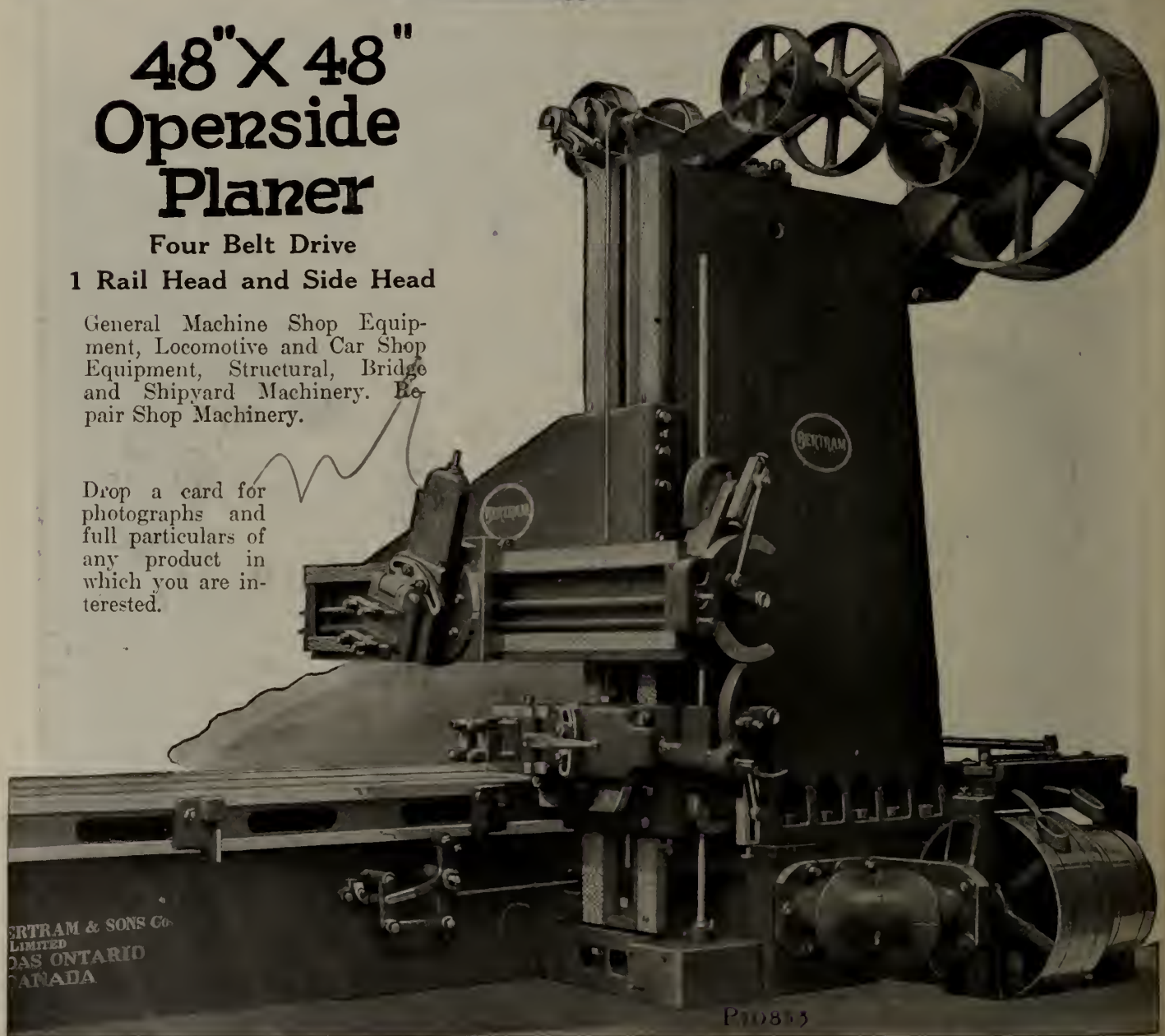


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SAVE WATER AND COAL by reducing the number of times it is necessary to open blow-off cocks to keep the concentration below the foaming point. You are blowing out one pound of coal each second a one and one-half inch blow-off cock is held open.

SAVE BOILER REPAIRS by reducing the amount of work made necessary by leaks caused by scale in your scale forming water districts, and unnecessary expansion and contraction caused by frequent washing and water changes in your foaming districts.

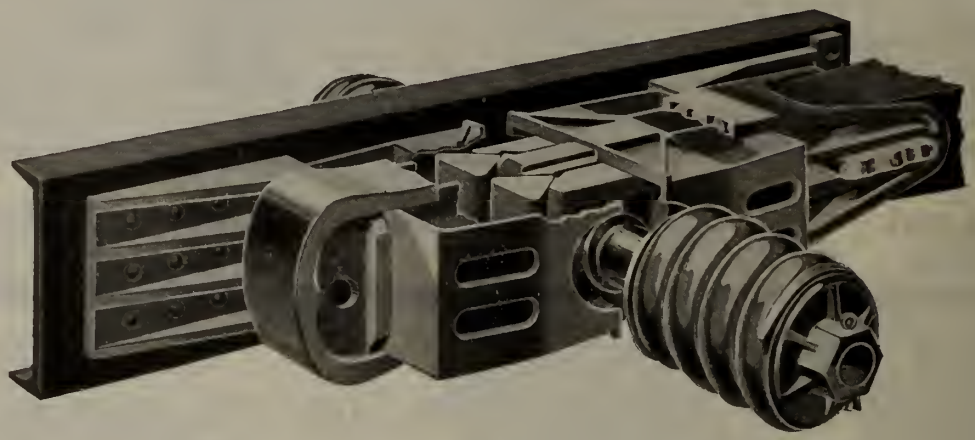
These savings can be effected by adopting the Dearborn System of Water Treatment. The cost is fifty per cent less than any other system now in use.

## Dearborn Chemical Company of Canada, Limited

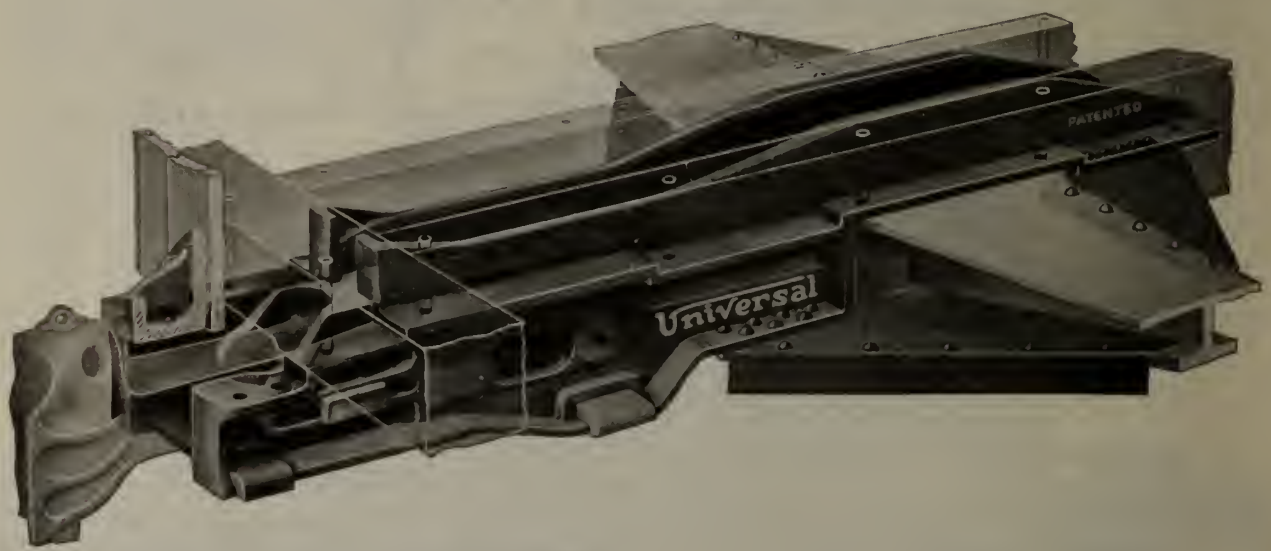
**General Offices and Factory, Toronto**

**Branch Offices: Montreal, 263 James St.; Winnipeg, 413 McIntyre Block**

# CARDWELL FRICTION DRAFT GEAR
## MADE IN CANADA



## *Universal* ATTACHMENTS
## MADE IN CANADA




REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
TWIN SPRING DRAFT RIGGING
CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

## MADE IN CANADA

# WEBB. G. KRAUSER
**Transportation Building, MONTREAL**

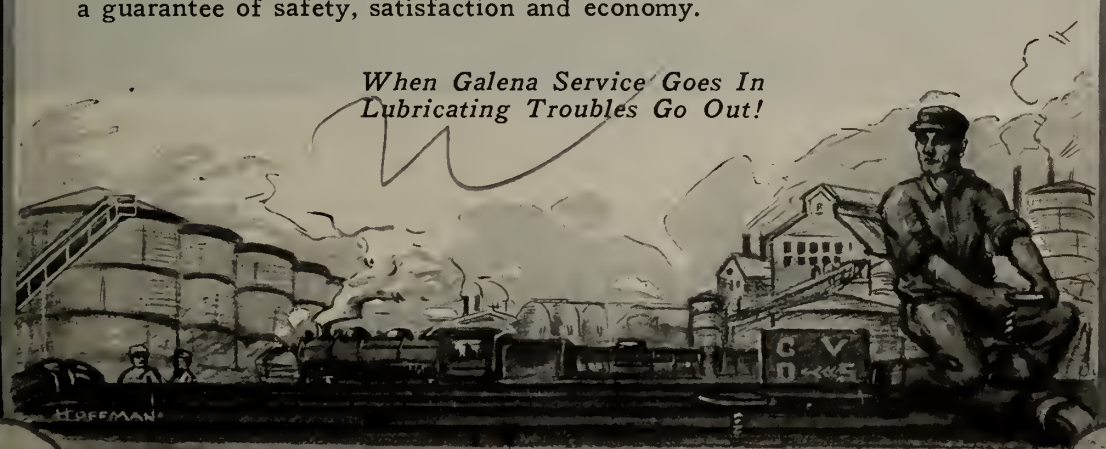
# The Practical Cooperation of Galena Service

*Galena Service* exemplifies the scientific lubrication methods that are saving hundreds of thousands of dollars annually to the railroads, through improved operation and the elimination of the losses in time and equipment due to faulty lubrication.

*Galena Service* prescribes and provides the right oil in the right place by the correct manner of application. It proves that a small quantity of the proper lubricant produces an operating efficiency that cannot be attained by double or more the quantity of the wrong grade. It is unfailing in securing the practical results that have made Galena Oils the world's standard in railway lubrication.

*Galena Service* represents the knowledge of a half century of actual experience in exhaustive test and research, and is today universally accepted as a guarantee of safety, satisfaction and economy.

*When Galena Service Goes In*
*Lubricating Troubles Go Out!*




**The Galena-Signal Oil Co. of Canada**
**Limited**
**TORONTO - MONTREAL**

KILL
LAST AD

# TRACKWORK

FOR STEAM AND ELECTRIC · RAILWAYS

Either as "Rail-Bound," "Cast-Bound" or "Solid" Construction

# MANGANESE-STEEL

SWITCHES, MATES, DIAMOND CROSSINGS,
RIGID FROGS, SPRING RAIL FROGS, ETC.

will save money by minimising
maintenance and renewal costs.

*Manufacturers of Balkwill Articulated Manganese-Steel Crossings*

Solid Manganese-Steel Intersection of Steam and Electric Railway tracks, Montreal.

## CANADIAN STEEL FOUNDRIES LIMITED

*General Offices:*

TRANSPORTATION BUILDING - MONTREAL

**66 Vessels**

**Total Tonnage 393,000**

Canada's Commerce Carriers

# Canadian Government Merchant Marine, Limited

**Now Afloat:**

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| "CANADIAN PLANTER" | "CANADIAN PROSPECTOR" | "CANADIAN FARMER" |
| "CANADIAN INVENTOR" | "CANADIAN BEAVER" | "CANADIAN SEALER" |
| "CANADIAN VOYAGEUR" | "CANADIAN TROOPER" | "CANADIAN MINER" |
| "CANADIAN PIONEER" | "CANADIAN SAILOR" | "CANADIAN SEIGNEUR" |
| "CANADIAN WARRIOR" | "CANADIAN SPINNER" | "CANADIAN RAIDER" |
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| "CANADIAN RANGER" | "CANADIAN TRADER" | "CANADIAN NAVIGATOR" |
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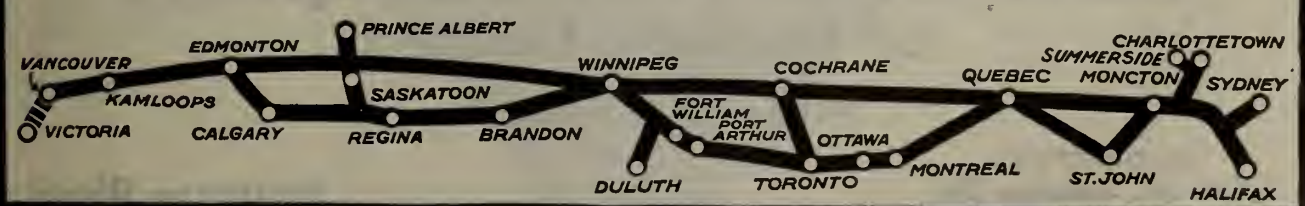
| "CANADIAN IMPORTER" | "CANADIAN MILLER" | "CANADIAN AVIATOR" |
| "CANADIAN EXPORTER" | "CANADIAN ADVENTURER" | "CANADIAN SOWER" |
| "CANADIAN HUNTER" | "CANADIAN OBSERVER" | "CANADIAN VICTOR" |

Weekly Freight Service to United Kingdom from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Fortnightly Freight Service to West Indies and Cuba from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter. Monthly Freight Service to Australia and New Zealand from Vancouver.

**For further information apply to any Canadian Railway Agent or**

D. O. WOOD, Traffic Manager, Exp. & Imp. Dept., Canadian National Rys., Toronto, Ont.

W. A. CUNNINGHAM, Exp. & Imp. Freight Agt., 230 St. James Street, Montreal, Que.



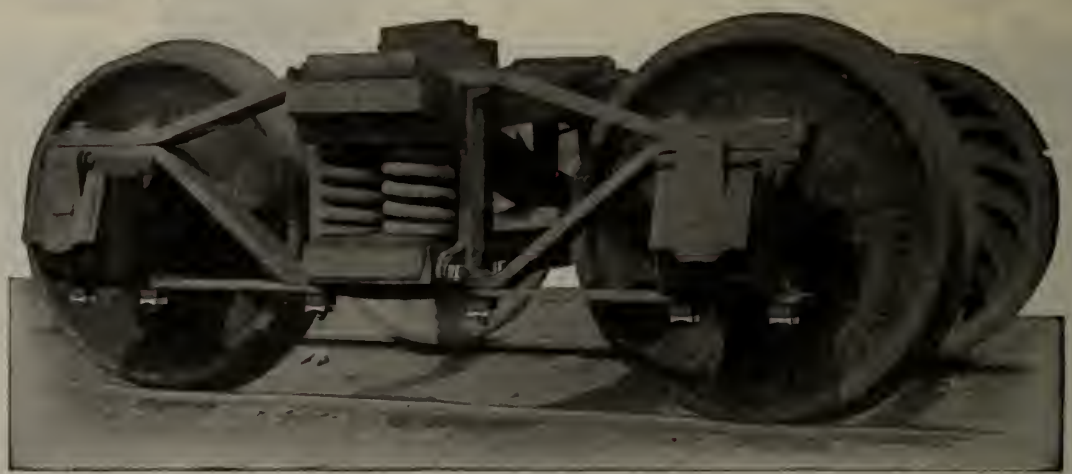

# Canadian National Railways

# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***



Above Shows Boss Nuts Applied to Box and Column Bolts.

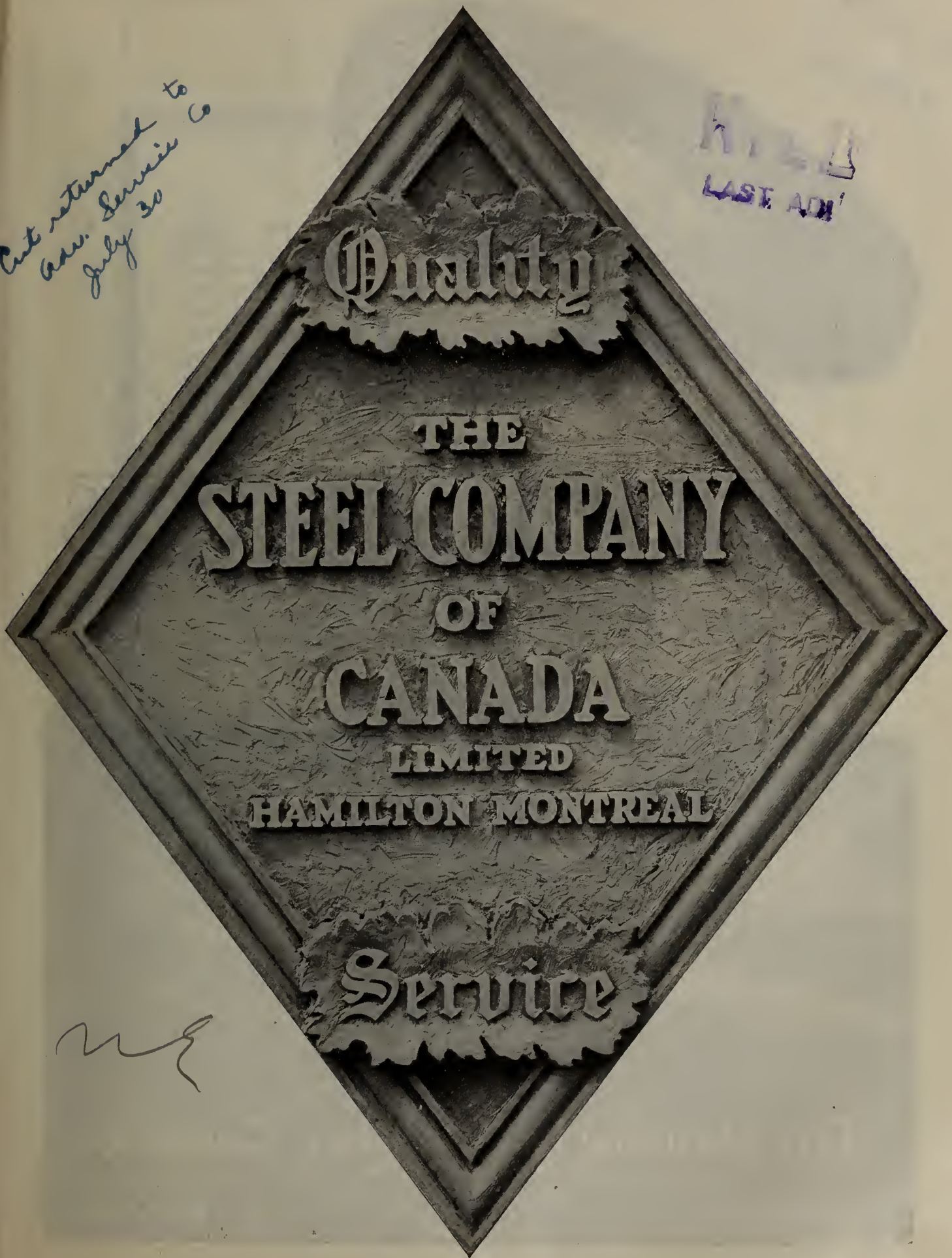
***Made in Canada from ore to finished product.***

## Boss Lock Nut Company
### of Canada, Limited

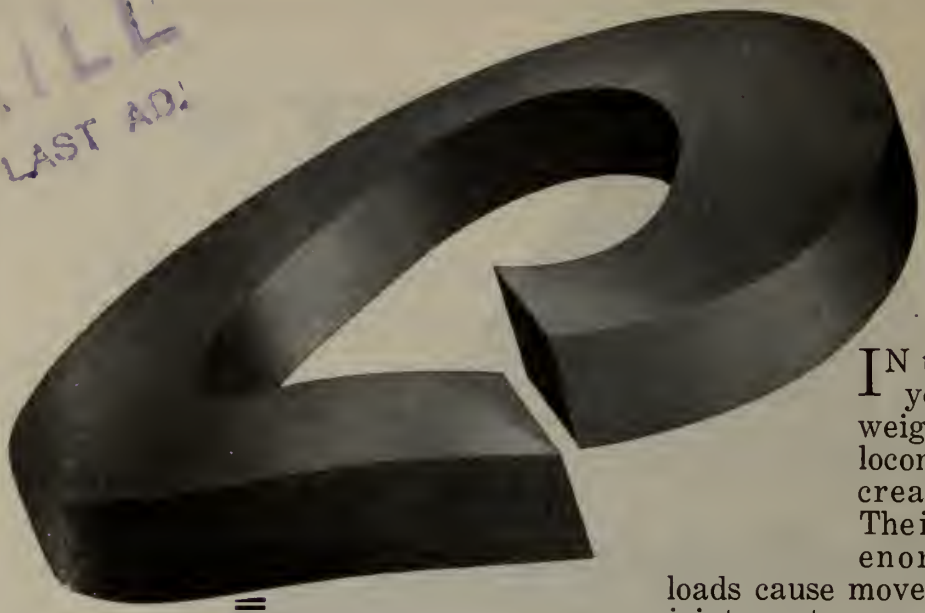
*Write for latest catalogue.*

HEAD OFFICE:
**263 St. James St.**
**MONTREAL, Que.**

**McIntyre Block**
**Winnipeg, Man.**


Quality
THE
STEEL COMPANY
OF
CANADA
LIMITED
HAMILTON MONTREAL
Service

MILL
LAST AD.



IN the past fifteen years the loaded weights of cars and locomotives have increased threefold. The impacts of these enormous rolling loads cause movements of track joint parts, resulting in rapid wear and looseness of bolted parts unless properly protected.

# HIPOWER NUT LOCKS

possess sufficient reactive power to diffuse these shocks, protect the bolted parts and maintain maximum security at minimum cost.

**The National Lock Washer Company**

ESTABLISHED 1886

Newark, N. J.

New York Chicago Detroit

# INCo Monel metal

## defies salt water and salt air

SALT water will not corrode Monel Metal. Years of severe exposure in scores of different engine room and deck installations have proved that Monel Metal stands in a class by itself in resisting the effects of salt water. It always retains its high polish in spite of spray or dampness.

Moreover, Monel Metal is strong as steel, ductile, non-erodible, and withstands so successfully high heats and superheated steam that its use in marine installations is specified generally.

For propeller wheels, pump liners and rods; turbine blades, bands, nozzles, for valve parts; nuts and bolts; for gear and fittings, such as boat release pins, tiller ropes, ladder treads and toe clips, bells, boat-hooks, porthole frames, chucks and cleats; and in the galley for urns, sinks, dressers and steam tables, the use of Monel Metal is rapidly extending, because its very long life is a double economy—a saving in replacement cost, and a saving in cost of overhauling.

The name of *Monel* is given to a line of metal products produced by The International Nickel Company from a natural nickel alloy—67% nickel, 28% copper, and 5% other metals. These products include Monel blocks, Monel rods, Monel castings, Monel sheets, Monel wire, Monel strip stock, etc.

*Leading marine architects now specify Monel Metal. If you desire further information, our Technical Department is at your service.*

The International Nickel Company of Canada, Limited

HARBOUR COMMISSION BUILDING

TORONTO, ONT.

INCo MONEL METAL TRADE MARK

INCo NICKEL TRADE MARK

# Barrett Roofings, Cements Industrial Paints etc.

YOU don't experiment when you use Barrett products. They are the result of many years' successful manufacturing experience and their worth has been proved by thousands of users throughout the Dominion.

### *Everjet Industrial Paints*

This is the age of specialists. "Jack of all trades and master of none" is out of place in the modern industrial world.

Barrett Industrial Paints are *all* "specialists". Each of them has been developed by our chemists to fill the requirements of some *particular use.* Their immense popularity is proof that they fill the bill, for although they have been on the market less than ten years, probably no other protective paints are now used so extensively by the railroads and by large and small manufacturers all over the Dominion.

Barrett Industrial Paints include:

| | |
|---|---|
| Everjet Boiler Paint | Everjet Smokestack Paint |
| Everjet Penstock Paint | Everjet Dip Paint |
| Everjet Bridge Paint | Everjet Machinery Paint |

All of these paints are moderate in price, extremely durable, and absolutely impervious to water, acids, alkalies, and fumes of all kinds.

If you desire a protective carbon paint for a use not included in the above list, our Service Department will furnish samples of paints especially prepared to meet your needs.

Barrett Industrial Paints are put up in 1, 5 and 10 Gallon Cans, ½ Barrels (about 20 gallons) and Barrels of about 40 gallons.

### *Nox-Aer-Leek Boiler Setting Cement*

A leaky boiler-setting is fatal to fuel economy, and *every* brick boiler setting is more or less leaky.

Barrett Nox-Aer-Leek overcomes this condition. It is a plastic cement of elastic bitumen, fused with non-drying oils and asbestos fiber. Applied to the exterior walls, it renders boiler-setting absolutely air-tight and moisture-proof.

You will find it sound economy to use Nox-Aer-Leek. Its small cost is repaid many times over by the saving in fuel expense.

Put up in ½ Barrels (about 300 lbs.) and Barrels (about 550 lbs.)

### *Everlastic "Rubber" Roofing*

A popular-priced roll roofing of unusually high quality. Wears stubbornly under all conditions. Is giving uniform satisfaction on thousands of factories, and other step-roofed buildings all over Canada.

Easy to lay and makes a roof that is durable and economical under hard service.

Comes in light (1-ply), medium (2-ply), heavy (3-ply), weights in rolls of 108 sq. ft. Nails and cement with each roll.

### *Everlastic Liquid Roofing Cement*

When your old felt and "Rubber" roofs become leaky and show signs of going to pieces, a coat of Everlastic Liquid Roofing Cement will add several more years of service at slight cost.

This cement comes ready for use. It has the consistency of thick molasses, is easy to apply, dries quickly and forms a durable, watertight surface, that is equal to a new roof.

Packages of all sizes, from 1-pint Cans to 40-gallon Barrels.

### *Elastigum Plastic Patching Cement*

Elastigum is a handy cement for which you'll find a new use every day in the year. It's for patching holes and leaks in all kinds of roofs; repairing flashings, re-lining gutters, etc.

Easy to use and very inexpensive. Tough, elastic, waterproof and acid-proof.

Put up in 1, 5, 25 and 100 lb. Packages, ½ Barrels of about 300 lbs., and Barrels of about 600 lbs.

*If your dealer cannot supply you with these "Proven Products" write us and we will.*

ST. JOHN, N.B., HALIFAX, N.S. SYDNEY, N.S. The Barrett Company LIMITED. MONTREAL TORONTO WINNIPEG VANCOUVER

# Safety and Strength *with*

# Q & C Rolled Steel Step Joints

KILL
LAST AD.

*MADE IN CANADA*

Combined with their feature of strength—which under actual test has been proven many times stronger than cast metal — Q & C Rolled Steel Compromise or Step Joints embody the factors of safety and economy. By our process of manufacture a rolled steel joint with the Bonzano and Thomson features (the strength giving depending flange and metal distribution at the head) is pressed to fit any rail section. This process involves heat treatment which further strengthens the joint and also permits pressing to a perfect fit. On your road you want the step joints that are most efficient. A card will bring you any information. Write us today.

## The General Supply Co. of Canada, Ltd.

MONTREAL
TORONTO

**356 Sparks Street**
**OTTAWA**

WINNIPEG
VANCOUVER

# EVAPORATORS

## The New Weir Evaporator

WEIR PATENT
CONTINUOUS BRINING &
AUTOMATIC FEEDING.

### Embodies Three Important Improvements

1. The Patent Brine Ejector.
2. The Automatic Feed Regulator.
3. The Special Tube Coupling.

These devices ensure uniform efficiency, simplify working, and lessen costs of upkeep.

They are fully described and illustrated in our New Evaporator Booklet—Send for it.

## G. & J. Weir, Limited, Scotland

MADE IN CANADA

Contractors to the British Admiralty and War Office and to the Governments of Australia, Canada, Egypt, India, New Zealand, South Africa, Argentine, Belgium, Brazil, Chili, Denmark, France, Greece, Holland, Italy, Japan, Norway, Portugal, Russia, Siam, Spain, Sweden, United States, Etc., Etc., also to the leading Steamship Lines and principal municipalities throughout the world.

MADE IN CANADA

Sole Agents

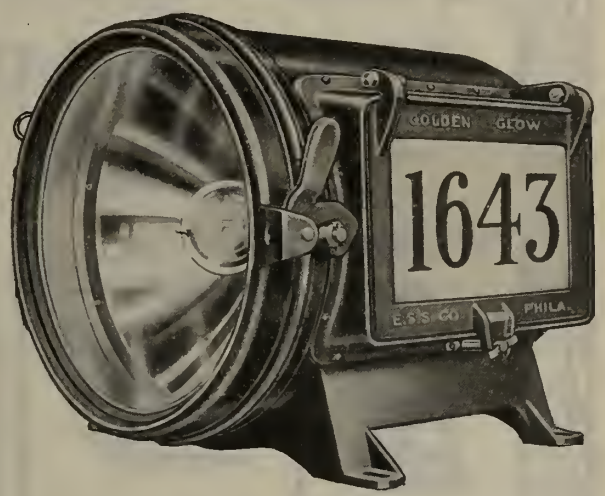
## PEACOCK BROTHERS, LIMITED
MONTREAL

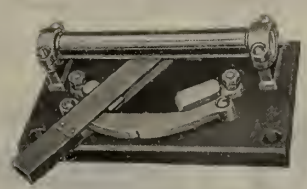
# KEYSTONE LOCOMOTIVE HEADLIGHT EQUIPMENT

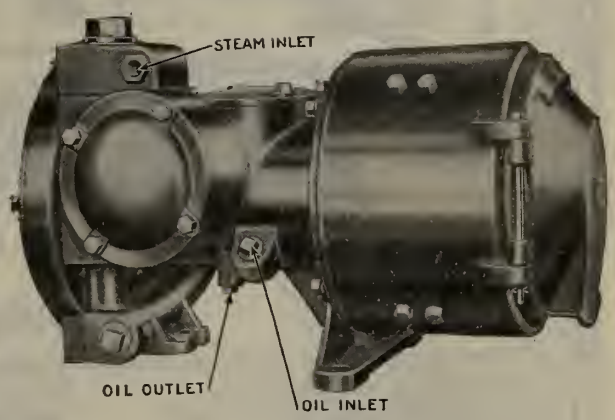
*Write for Bulletin No. 166*

## Keystone Material for Steam Railroads

*Wire*
*Keystone Lamp Guards*
*Crane Contact Rail Material*
*Keystone Universal Collectors*
*"Protected" Rail Bonds*
*Overhead Line Material*
*Keystone Turbo-Generators*
*Golden Glow Locomotive Headlights*
*Demountable Mirror Units*
*Focusing Device Adopters*
*Keystone Gauge Lights*
*Keystone Tender Rearlights*
*Keystone Classification Lights*
*Keystone Marker Lights*
*Golden Glow Roundhouse Fixtures*
*Keystone Headlight Switches*
*Junction Boxes*
*Terminal Blocks*
*Connectors*
*Mazda Lamps*
*Miscellaneous Supplies*



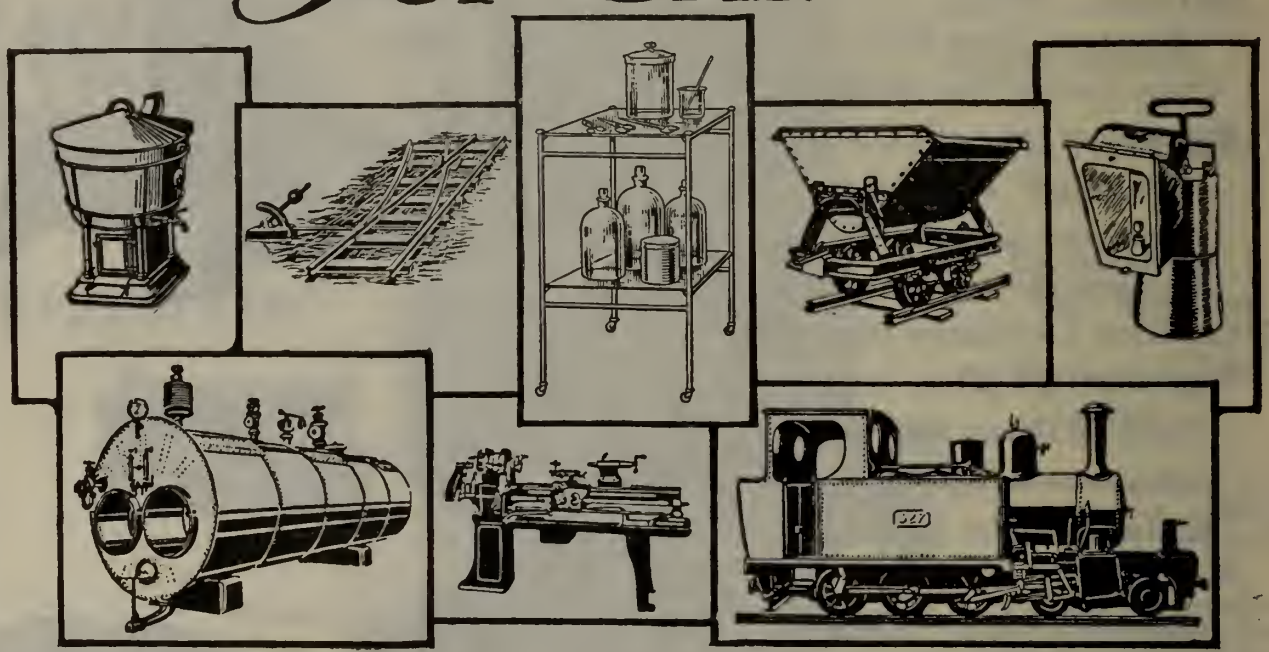



**Electric Service Supplies Co.**
*MANUFACTURERS*
PHILADELPHIA, 17th and Cambria Sts. NEW YORK, 50 Church St. CHICAGO, Monadnock Bldg.

**Lyman Tube & Supply Co., Ltd.**
*CANADIAN DISTRIBUTORS*
MONTREAL, Lyman Tube Bldg. WINNIPEG, 703 Confederation Life Bldg. TORONTO, 33 Melinda Street

GR MINISTRY of MUNITIONS

# GOVERNMENT PROPERTY For SALE



The Disposal Board
have

## STOCKS

lying in the United Kingdom and Available for Export
of

## ENGINEERING STORES

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|---|---|---|
| Ferrous and Non-Ferrous Metals | Contractors' Stores | Agricultural Machinery |
| Plant and Machinery | Electrical Instruments and | Aircraft |
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| Factory Stores | Medical Stores | Textiles and Clothing |
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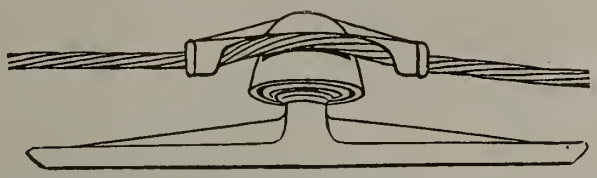
Buyers should instruct their representatives in the United Kingdom to communicate with D. B. 8 Canadian Export Department, Ministry of Munitions, Whitehall Place, S.W.

Cable address: "DISPEXPORT, MUNORGIZE, LONDON."

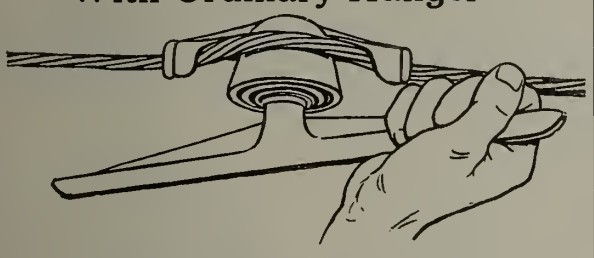
# O-B PRODUCTS

*Quality First*

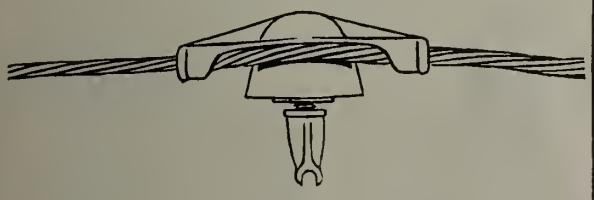


**Usually the car is out of line with the trolley wire when it first makes contact with the hanger**

## With Ordinary Hanger—

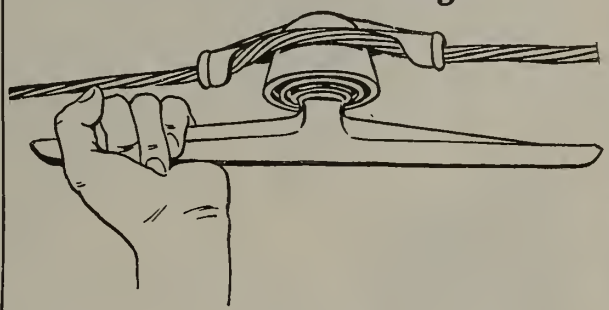


the ear must be backed off—

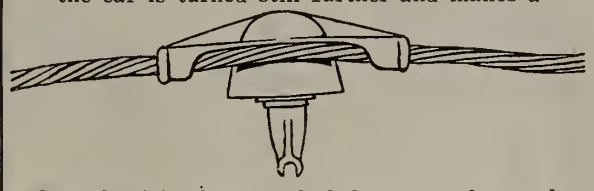


which leaves a loose joint between ear and hanger.

## With O-B Lock Hanger—



the ear is turned still further and makes a



tight, solid joint between lock hanger and ear when the latter comes in line with the wire.

## That Internal Lock Washer Improves your Line

Tight, weatherproof joint between every ear and every O-B Lock Hanger cuts your maintenance cost. With the ordinary hanger either much time is wasted shimming up the joint or the lineman lets it go as a sloppy job.

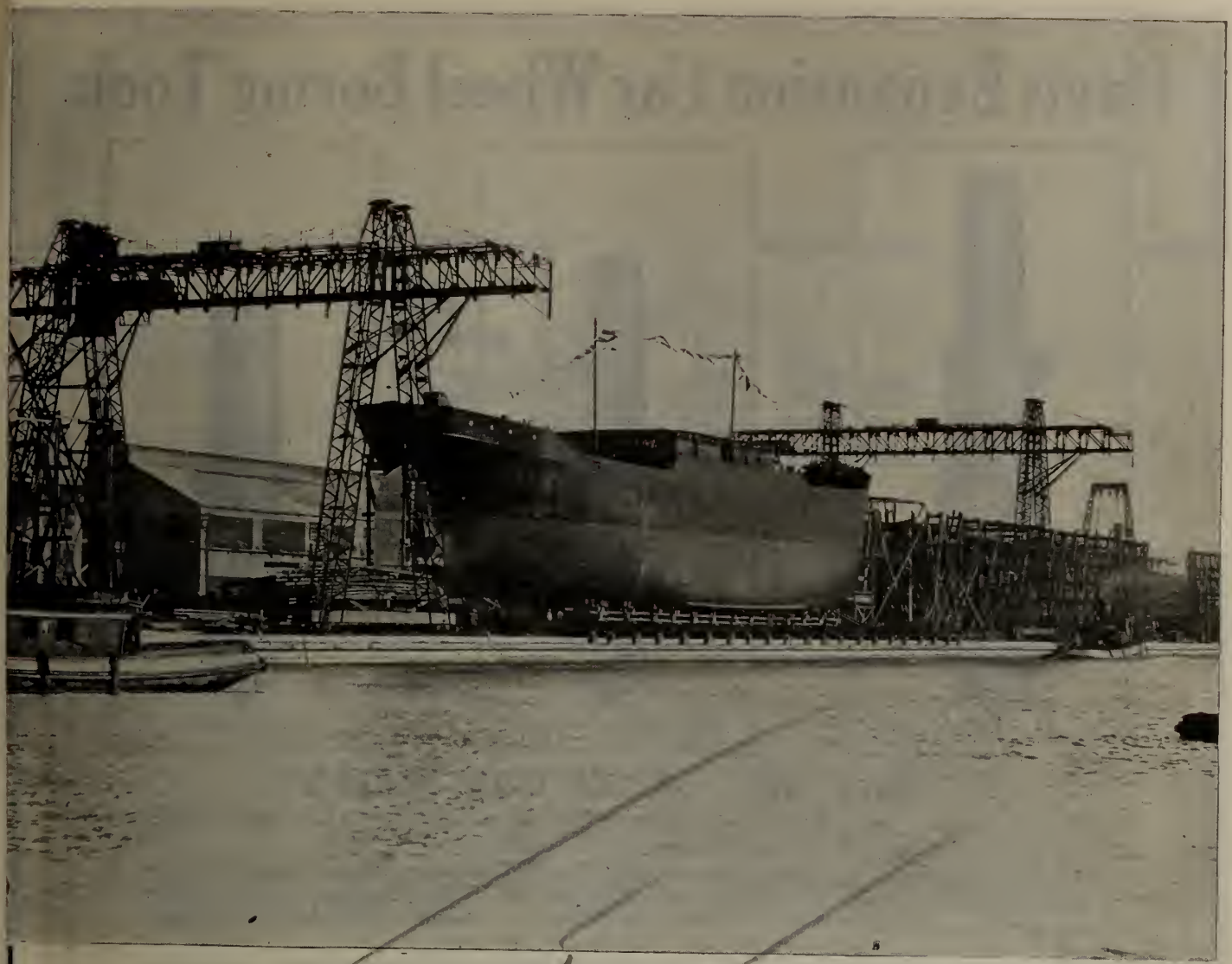
This never occurs with O-B Lock Hanger. In addition they have all the essential mechanical and electrical characteristics.

A size and type for every service shown in O-B Catalog No. 17.

## The Ohio Brass Company

**Mansfield, Ohio**

WASHINGTON
OREGON
MONTANA
IDAHO
WYOMING
NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXI
N.DAKOTA
S.DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
S.CAROLINA
N.CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
DOMINION OF CANADA
NOVA SCOTIA
49
The map above shows the location of the 49 Foundries in the United States and Canada represented by the Association of Manufacturers of Chilled Car Wheels.
Chicago 3
St. Louis 2
Buffalo 4
Pittsburg 2
Cleveland 2
Amherst N.S.
Montreal
Mich. City. Ind.
Louisville
Mt. Vernon Ill.
Ft Wayne. Ind.
Birmingham
Atlanta.
Savannah
Boston
Detroit
St. Paul.
Kansas City. Kan
Denver
Tacoma
Los Angeles
Rochester N.Y.
Sayre. Pa.
Lime Rock. Conn.
Albany
Toronto.
New Glasgow N.S.
Madison. Ill
Berwick Pa
Huntingdon. W. Va.
Wilmington. Del.
Houston Tex
Hannibal Mo
Reading Pa
Baltimore
Richmond Va.
Ft William. Ont.
St. Thomas "
Hamilton "
Ramapo. N.Y.
Marshall. Tex
Capacity
20,000
CHILLED
IRON WHEELS
Per Day
25 Million in Service
Association of Manufacturers
of Chilled Car Wheels
1229 McCormick Bldg. Chicago.



4300-TON STEEL FREIGHTER "LE QUESNOY"

# Builders of Steel Ships and Marine Engines, Ship Repairs, etc.

## Dominion Shipbuilding & Repair Co., Limited

**Office, Docks and Yards**
**Foot of Spadina Avenue**

**Toronto** **Canada**

# Davis Expansion Car Wheel Boring Tools

SPECIAL "TWO-IN-ONE"

REGULAR "TWO-IN-ONE"

"STANDARD"

## *Bore 98% of all Car Wheels*

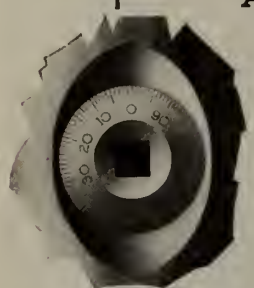
Fully 95% of all car wheels are bored with Davis Expansion Car Wheel Boring Tools —a positive guarantee of their efficiency and economy.

Wheel boring mills, equipped with improved Davis Expansion Boring Tools, will bore more wheels per day—absolutely accurate, and at a 25% saving in costs. Any standard or odd size can be accurately maintained by means of a micrometer adjustment, which expands the cutters to compensate for wear.

Equip all your wheel boring mills with Davis Expansion Car Wheel Boring Tools for increased boring production and decreased cost.

**Save 25% to 50% in Wheel Boring Costs**

### MICROMETER ADJUSTMENT



This graduated micrometer screw controls the travel of a patented, double expanding wedge, which forces the cutters out, uniformly, as the screw is turned.

Cutters are expanded to size within .001 of an inch — in less than one minute.

### EXPANDING CUTTERS

Cutters are expanded, uniformly, by the special wedge which has perfect bearing against angle on cutters, as shown by arrows in illustration.

The cost of replacing worn-out cutters is very nominal and liberal expansion insures maximum service per pair.

*SEND FOR LITERATURE AND FULL INFORMATION*

**DAVIS BORING TOOL COMPANY**

INCORPORATED

**3700-24 Forest Park Blvd.** **St. Louis, Mo., U.S.A.**

*Canadian Agents:*

WILLIAMS & WILSON, MONTREAL, QUEBEC. J. BERTRAM & SONS, DUNDAS, ONTARIO.

THE Dominion Oxygen Company, Ltd., announces the satisfactory progress of its building program.

Work on the Toronto Plant is making excellent headway and a suitable site has been purchased in Montreal where construction work will promptly begin.

Land for the additional plants provided for in the initial plans of the Company is being negotiated for in leading cities.

Meanwhile a practical Service System is undergoing organization and a net-work of suitably located warehouses and service stations will be established.

Pending further announcement the oxygen users of the Dominion are invited to write for detailed information as to the broad scope and liberal policy of the Dominion Oxygen Company, Ltd.

DOMINION OXYGEN COMPANY, LTD
Hillcrest Park
Toronto - Ontario

D-4

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The JOLIET JOURNAL BOX, due to its numerous advantages, contributes to operating efficiency. The complete sealing of the outer opening of the box by the lid, the use of a spiral spring for holding the lid in place, and the interchangeability of the standard M. C. B. box lid, are all points which make for the highest efficiency in this Journal Box. The arrangement of the spring holds the lid firmly in either the open or closed position and allows, should the original lid become broken or lost, the substitution of a standard M. C. B. Journal Box lid.

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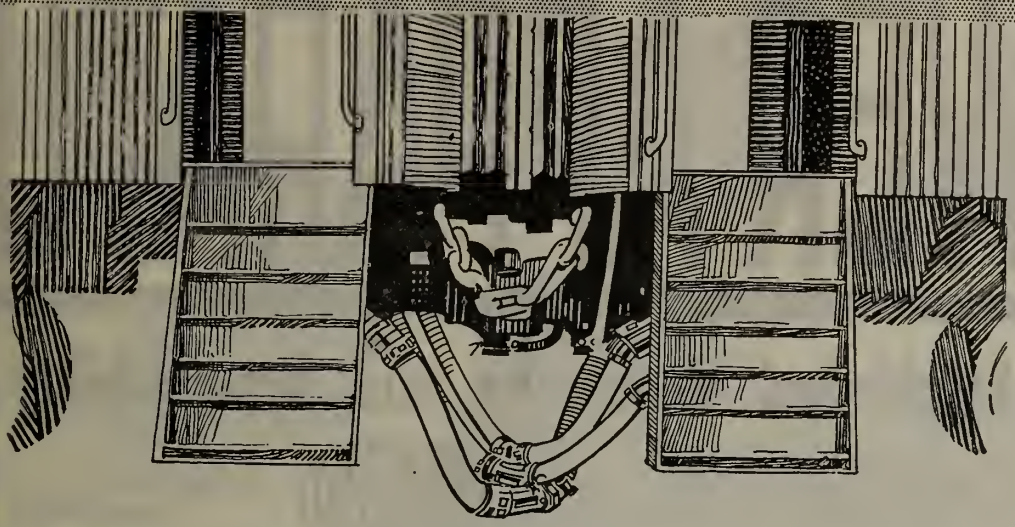

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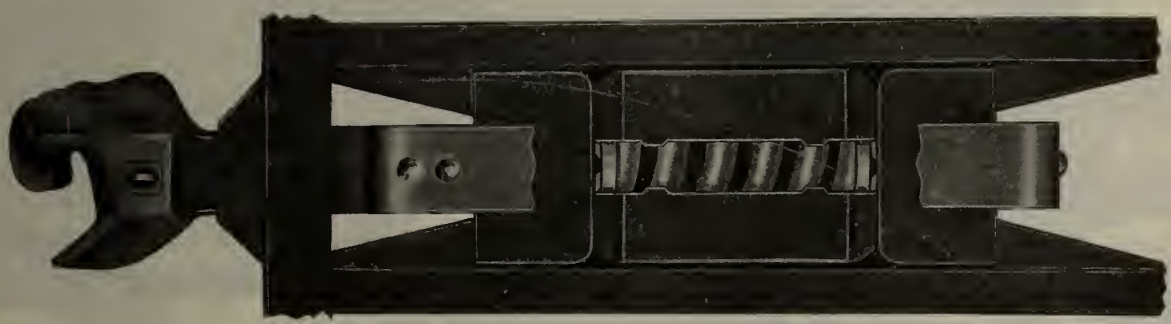

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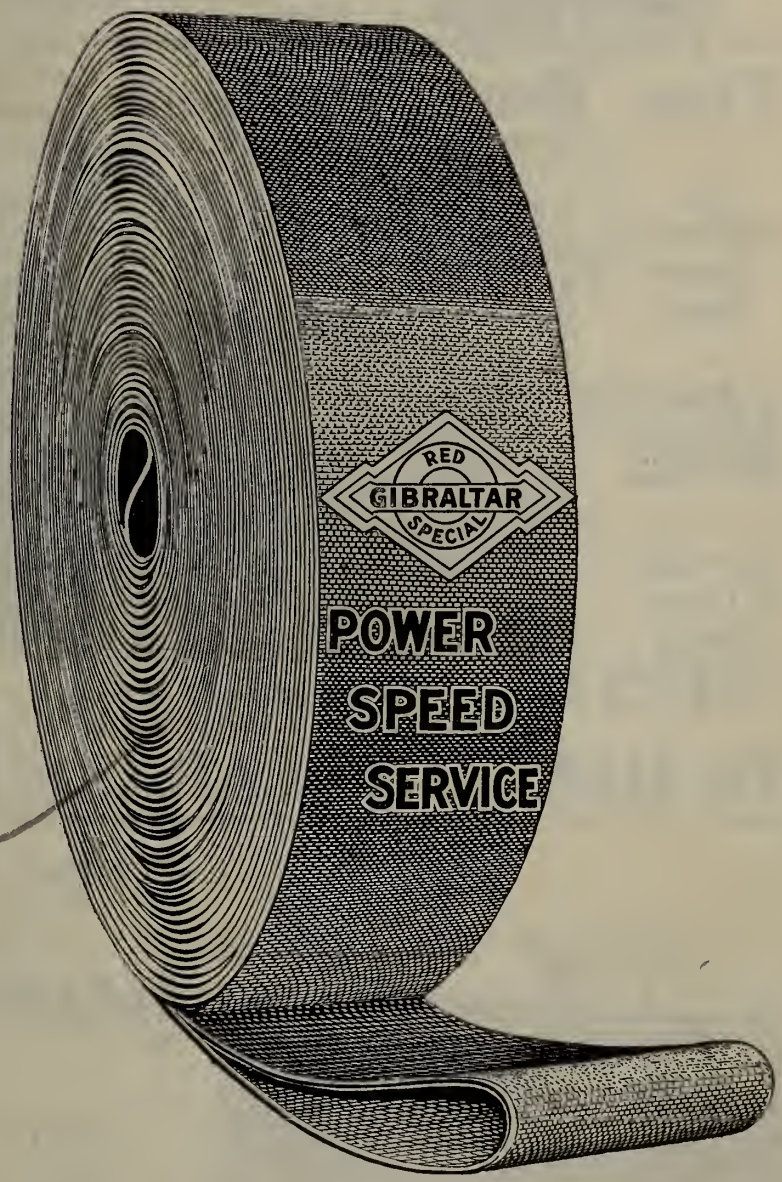


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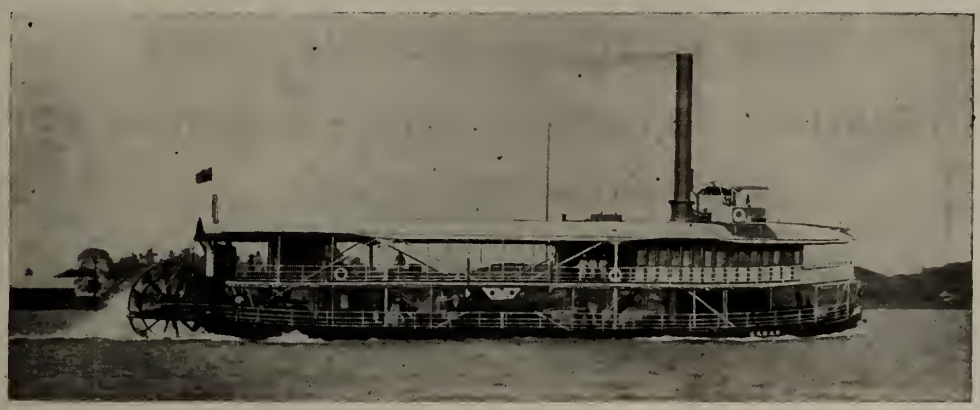

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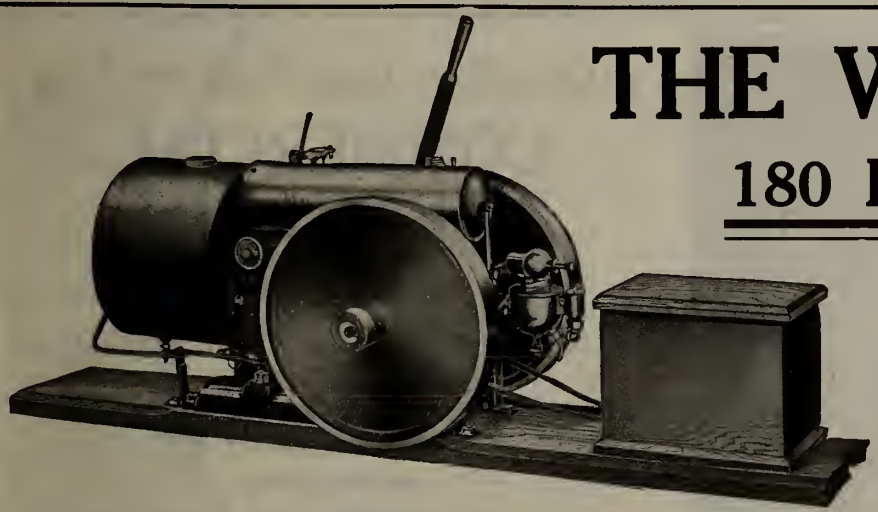

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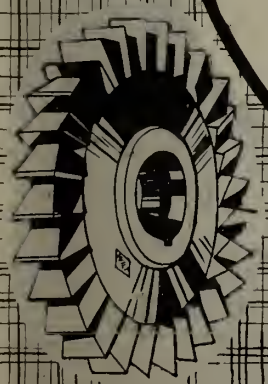

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Canadian Railway and Marine World

August, 1920

# Locomotive Fuel Economy and Smoke Prevention.

The committee on fuel economy and smoke prevention, appointed by the American Railroad Association, Section 3, Mechanical, and of which Wm. Schlafge Mechanical Manager, Erie Rd., was chairman; W. H. Flynn, Superintendent, Motive Power, Michigan Central Rd., being also a member, presented the following report at the Association's convention at Atlantic City recently:—In its 1919 report your committee endeavored to emphasize the growing importance of fuel economy to the railways, arising from increasing consumption and increasing cost of production. Both of these factors are likely to result in the largest fuel bills in railway history during this year. It is certain that there will be substantial increases in the cost of production and only the application of prompt and effective means will prevent an increased consumption out of proportion to any probable expansion in traffic. It is therefore urged that every railway check its current consumption with previous records with a view to the adoption of such measures as the situation may require.

With the return of the U.S. railways to corporate control and operation, the Fuel Conservation Section ceased to exist. The work of this important branch of the Railroad Administration was of unquestioned value in promoting economy in the purchase, distribution and use of fuel for railway purposes. The methods employed were substantially those advocated by your committee in previous reports, and they must have continued intensive application, if the cost of fuel is not to exceed even its present ratio to total operating expense. The publications of the Fuel Conservation Section no longer bear an official status and may, therefore, fail to serve their most useful purpose unless incorporated in the afficial publications of the American Railroad Association. This is particularly true of the pamphlet on "The Economical Use of Railroad Fuel" most recently issued. While this incorporates many features contained in the present official publication of this association issued under the title of "Fuel Economy on Locomotives," there is some additional material gathered as a result of greater experience in the application of the principles of fuel economy to locomotive operation as well as some subject matter not treated in the association pamphlet, that it is believed should be incorporated and accordingly a revision of the text of Fuel Economy on Locomotives is submitted with the recommendation that suitable action be taken to place it before the general committee for adoption as standard practice. In the original preparation of this pamphlet, your committee considered that brevity was not only desirable, but essential, and, therefore, much descriptive and explanatory matter was omitted. The same policy has been pursued in the revision, which accounts for the omission of much interesting material incorporated in the publication of the Fuel Conservation Section, which, while of value in emphasizing the importance of certain rules or recommendations, may be sacrificed to practical requirements under well trained supervision.

Locomotive Fuel Economy.—Introduction.—The object of these instructions is to bring about the economical use of fuel, to promote good practice in the operation of locomotives, and to improve the methods of firing. As the locomotive man is in charge of the locomotive, his instructions must be followed, and both he and the fireman should work together to bring about the desired results. The best fireman cannot make a good showing with a locomotive man who does not co-operate with him in the proper handling of the injector, throttle and reverse lever. The fireman is not alone responsible for the saving in coal, as a great deal depends on the locomotive man in his proper operation of the locomotive, and the latter should give instructions and suggestions to the fireman, based on his experience, to bring about the best results. An efficient fireman is one having the skill and knowledge which enables him to make the fuel supplied to the fire box, evaporate into steam as much water as possible, or, in other words, he makes the fuel perform its full duty. There are other qualities which increase the value of a fireman, but the ability to keep up steam is the first consideration. Good judgment is an aid to success in every calling, but it seems especially essential in a fireman. Economy in the use of fuel is required, because the fuel used on locomotives is one of the largest items of expense to all railways. As the greatest portion of the fuel passes through the fireman's hands, he can use it economically (depending on his ability, skill and good judgment, coupled with the co-operation of the locomotive man in handling the locomotive), or he can waste it through lack of knowledge on inattention to his duties. Futhermore, by burning no more coal than is absolutely necessary, the labor of firing is lightened, and by taking an intelligent interest in the condition and operation of the locomotive, the fireman is a very important factor in the saving of coal and water. By explaining to the new fireman the reasons why certain methods should be pursued in handling his work to bring about the best results, and by directing attention, if necessary, to improper methods on the part of the experienced fireman who may not use good judgment, the operation of the locomotive can be handled to the best advantage and the greatest saving of fuel effected.

**Bituminous and Anthracite Coal.**—1. Bituminous coals are usually composed of about 60% carbon, 30% gaseous or volatile mater, which burns as flame, and 10% earthy matter, which remains on the grates as ash or clinker. Good anthracite coal contains about 85% carbon, 5% gaseous or volatile, and 10% earthy matter.

2. The burning of coal in a locomotive requires air, which must be admitted through the ash pan, grates and fire door. Smoke means imperfect combustion and waste of coal, and must be avoided as far as possible.

3. When bituminous coal is applied to the fire, the volatile or gaseous matter is expelled, and, if properly mixed with air and heated to a sufficient temperature in the fire box, the mixture will ignite, be consumed and passed from the fire box through the tubes and stack as colorless vapor, leaving the solid matter on the grates in the form of coke, which burns more slowly. If, however, the gases are unconsumed, they will produce smoke.

4. Anthracite coal burns more slowly than bituminous, and, consequently, a larger grate area has to be provided in order that suffcient coal may be burned to give the required amount of steam. In other words, means must be provided to make a hard-coal-burning locomotive of given proportions consume as much coal per hour as a bituminous burner of the same proportions, and no better way has been found than by designing this kind of locomotive with a large fire box and a liberal grate area. Anthracite coal has to be fired to suit the size of the lumps used. If the coal is in large lumps, a heavy fire must be carried, because the lumps lie so open that the air would pass too freely through the fire if it were light. The smaller the size of the coal the thinner the fire can be. The fire should be started considerably in advance of leaving time from locomotive house, in order that a good fire will be on the grates when the start is made with the train.

5. The method of light and level firing, outlined in the instructions which follow, applies to firing both bituminous and anthracite coal.

**Inspection of the Locomotive.**—6. The locomotive man and fireman should be on hand in ample time before departure from the locomotive house to thoroughly inspect and lubricate the locomotive, in order to make sure that it is in proper condition and fully equipped for making the run. Any matters which, in the judgment of the locomotive man, should receive attention before departure, must be promptly reported. The fire, grates and ash pan, as well as flue sheet, must be examined, to see that they are in suitable condition for making the run. The condition of the fire should be such that it will make steam freely from the start. The shaker rigging should be operated to see that it is in good working order. The damper rigging (where provided) should also be operated, to make sure of its condition. The ash pan and rigging should be examined, to see that the doors or slides are properly secured and in a condition to prevent hot coals dropping along the road, which are liable to start fires.

7. When locomotives are equipped with mechanically operated fire doors, grate shakers, or coal pushers, the same should be known to be in good working order before starting.

**Preparing the Fire for the Start.**—8. In preparing the fire for the start (but not before it is known the foundation or kindling fire is in good shape from corner to corner) it must be built up gradually to the proper depth for the service

required. No fast rule can be made as to this depth, the size of the coal will, however, govern as well as the service. Fine sized coal requires a larger grate surface than the larger sized coal, but the larger size coal requires a larger grate opening. With fine coal approaching buckwheat size, a fire of from 4 to 6 in. thickness should be maintained, where lump size is used a depth of from 12 to 15 in. in thickness will be necessary at times because of the openings that will exist between the large lumps as they lie on the grates. A fire of the last

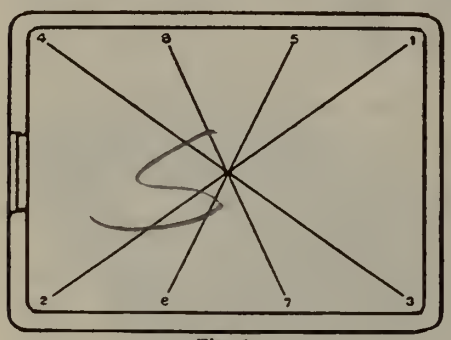


Fig. 1.

mentioned thickness will quickly burn down to a lower level after the locomotive is put into service, and this lower level should then be maintained until the train approaches the terminal.

9. When applying fuel in building up the fire, preparatory to starting, the blower should be used, to create the necessary draft, and the fire door should not be entirely closed between the shovelfuls of coal, but in all cases should be placed on or against the latch until the gases have been consumed, and the closing of the door will not result in the emission of heavy black smoke.

10. It is important that the grates should be clean and free from dead ashes and clinker. They should be left in a level position and secured there after each shaking, to prevent the fingers or edges of the bars being burned off. See that the foundation for a good fire is on the grates, that the fire is evenly distributed over the entire grate surface, and that the ash pan is clean. If these precautions are taken, the fire will be in condition to maintain the steam pressure during the trip.

Taking Coal and Water.—11. After taking coal at coaling stations, the coal pile should be trimmed, to ensure the coal from falling off tender while in transit, which saves coal and eliminates a danger to passing trains, trackmen, etc.

12. Coal or water must not be taken more frequently than is necessary, as it requires extra coal to again bring the train up to speed, especially if on a grade. This is a matter requiring good judgment, as it would not do to run short of coal or water before reaching the next coal chute or water tank. Where possible, take water only from tanks containing good water, and as little as possible from those containing bad water.

Making the Start.—13. The boiler must not be filled too full of water as soon as the locomotive leaves the locomotive house. Leave a space so that the injector can be worked to prevent popping.

14. The lubricator should be started about 15 minutes before leaving the terminal and should be set to feed regularly in order to ensure lubrication of valves and cylinders at the start of the trip. Proper lubrication of the valves, cylinders and machinery helps to save fuel by reducing friction.

15. The sprinkler hose must be used frequently, to keep down dust on the foot plate and in the cab, and to wet the coal in the tender. The use of too much water on the coal should be avoided, as it has to be evaporated by the fire, and may result in the flues stopping up.

16. Care should be taken in starting train to prevent damage to draft gear and couplers. Preventing delays saves coal, and preventing damages saves repair costs.

17. To avoid holes being torn in the fire, the fireman should have the fire in such condition that the pressure can be held up with the fire door held partly open. Slipping of the drivers should be guarded against, as the heavy exhaust tears and upsets the fire, and fuel is wasted in rebuilding it. Furthermore, slipping wears out tires and rails, and may damage the running gear.

18. When using anthracite coal no fuel should be placed on the fire at starting. After the effort of starting is over and the fire has reached a bright, glowing condition, begin firing as lightly as possible, to properly maintain the fire.

Method of Firing.—19. A hard and fast rule covering the depth of fire at the start cannot be made. Good judgment must be used, as the conditions under which the start is made, such as grade, weight of train, speed, etc., will influence to a great extent the kind of fire that is on the grates.

20. Large lumps of coal do not make a satisfactory fire, and they should be broken into pieces not larger than 3 in.

21. Always fire as light and level as possible, consistent with the steam requirements, scattering the coal over parts where the bed is thinnest and the fire brightest, in order to prevent it from becoming dead in spots. Large quantities of coal placed in the fire box at one time cool down the fire, cause smoke and waste of coal, small quantities at regular intervals will keep the fire bright, reduce smoke and take less coal to keep up steam pressure, resulting in a reduction in the work of firing.

22. Very heavy firing is apt to cause leaks, and may cause firebox sheets to crack, as the air cannot pass readily through a heavy fire and large quantities of cold air will be drawn through the fire door and the thinnest places in the fire, resulting in chilling the flues and sheets, the formation of smoke and reduction in steam pressure.

23. The fire door should be placed on the latch, as far as possible, between each shovelful of coal, to keep down the

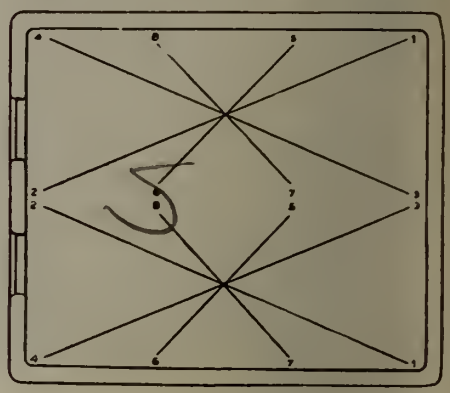


Fig. 2.

smoke by increasing the admission of air through the door.

24. Do not put four or five shovelfuls of coal into the fire box at one time. One, or perhaps two, will give better results, and if more than one shovelful is used at one firing, they should not be put into the same spot. Fig. 1 shows how coal should be introduced into a single, and fig. 2 a double door fire box, each successive shovelful being thrown to the points indicated by the numbers. This method of firing will tend to make the bed of fire uniform, but, of course, the judgment of the fireman must be depended upon to see that thin spots are kept covered. Fig. 2 shows the method of cross firing a Wooten firebox, as indicated by successive numbers on the arrows, first firing on the one side and then the other, along the walls and center of the firebox.

25. Fig. 3 illustrates the effect of heavy firing under the door, which lowers the temperature at that part of the fire box, since the heavy bed of coal does not allow sufficient air to pass through it to supply oxygen for proper combustion, and smoke is liable to result on account of part of the fuel gases passing away unconsumed.

26. Figs. 4 and 5 show the condition of the fire when the practice of light and level cross-firing illustrated by fig. 1 is followed. The bed of fuel is slightly heavier next to the sheets than on other

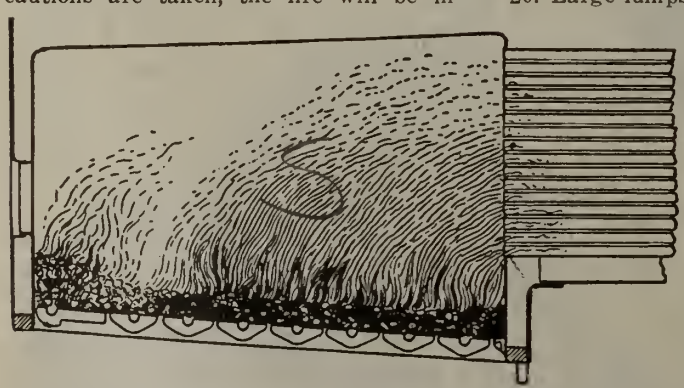


Fig. 3.

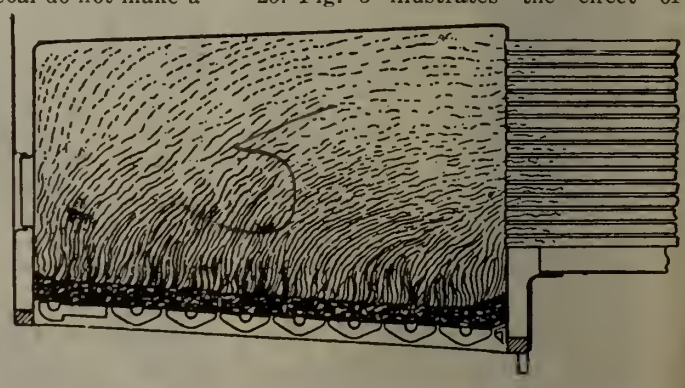


Fig. 4.

parts of the grate. This is good practice, because there is a tendency for more air to pass up beside the sheets, which would cause thin spots to form around the edges, allowing cold air to pass up into the fire box. Maintaining a slightly thicker fire along the edges prevents this trouble.

27. Fig. 6 shows the thinning action of the draft around the edges.

28. Fig. 7 shows the effect of a temporary reduction in fire box temperature when a shovelful of coal is introduced.

29. Fig. 8 shows the restoration of temperature before the second shovelful is introduced at another part of the fire box, as is the case in the system of light and level cross-firing.

30. Fig. 9 shows the effect of a spot or hole in the firing. The admission of a large volume of cold air through such spots causes a serious chilling effect.

31. Fig. 10 shows the application of a brick arch and the path of the products of combustion from the fire to the flues.

**Operation of the Locomotive.** — 32. When the throttle is closed, before making a stop or for drifting, the blower must be used and the fire door placed on latch, and dampers (where provided) should be closed in order to check the fire and prevent steam from blowing off. This practice, with the exception of the use of the blower, should be followed after using the scraper or slash bar, and when on sidings, in yards or at terminals.

33. Firing should be stopped long enough before steam is shut off to prevent smoke and waste of coal; and when making station stops the fire should be in such a condition that more coal need not be added until after start is made. It is bad practice to begin firing as soon as the throttle is opened, because the deadening effect of the fresh coal, together with the use of large quantities of steam, will cause a reduction of steam pressure. If firing is necessary at this time, it is better to do it while standing.

34. The grates should be shaken only when necessary to clear the fire of ash and clinker, in order to admit sufficient air for proper combustion, and in such manner as to avoid the loss of good fires, which means waste of fuel. Care should be taken after each operation to place the grates in a level position to avoid burning the fingers, which is liable to occur if the grates are allowed to remain at an angle with the fingers projecting into the fire.

35. The waste of steam through safety valves must be avoided. Frequent blowing off of safety valves shows poor judgment, and implies that economy is not being practiced. Tests have demonstrated that about 15 lb. of coal, or one shovelful, is required to supply the steam blown off in one minute, or, in other words, if the safety valves are open for 133 min. about one ton of coal is wasted.

36. Careful attention must be given to the use of the injector and to the height of the water level in the boiler. The proper handling of the injector is a very important matter in fuel economy. The best fireman cannot make a showing if the locomotive man floods the boiler. If the injector is to be used to prevent popping, a space must be left so that the injector can be worked. The injector should be put on before, and not after, the safety valve opens. The blower should also be reduced or shut off before the steam pressure rises to the blowing off point.

37. Coal can be saved by the proper use of the injector in feeding the locomotive regularly at a rate governed by the demands, and by taking advantage of every opportunity to increase the

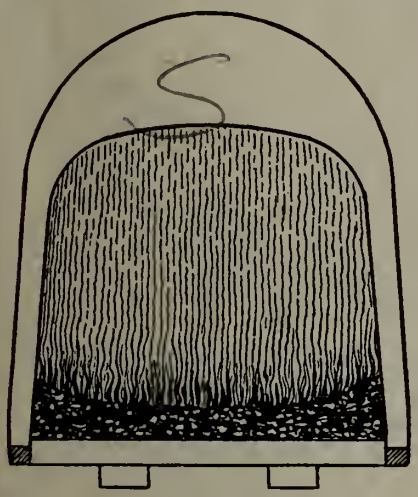


Fig. 5.

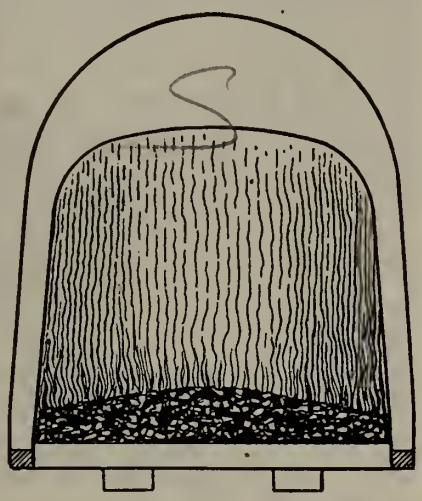


Fig. 6.

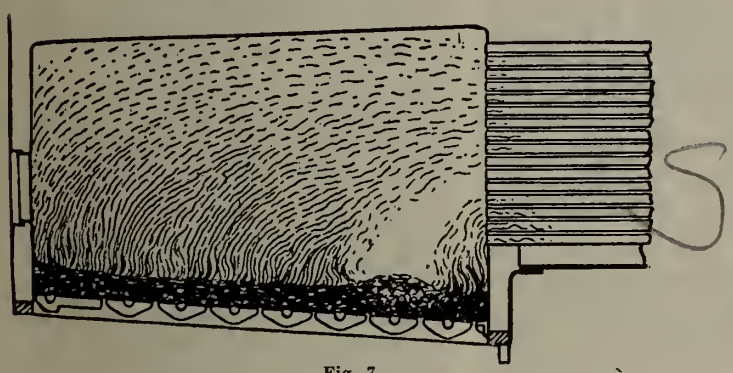


Fig. 7.

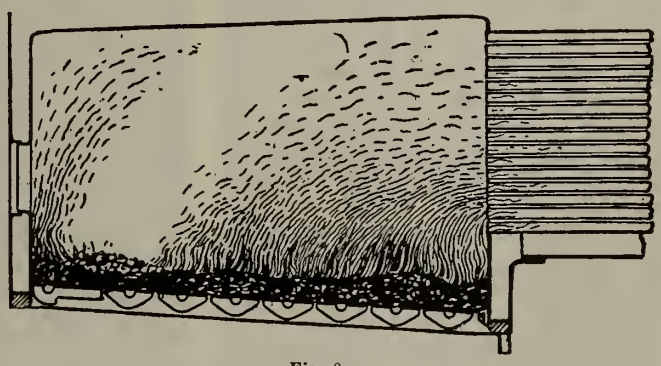


Fig. 8.

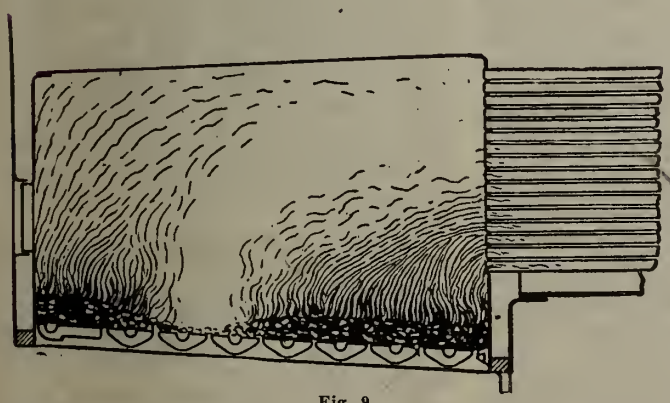


Fig. 9.

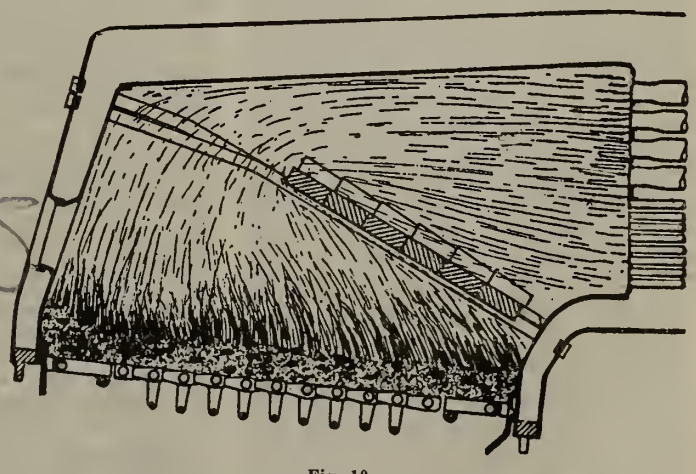


Fig. 10.

height of the water level when not working the locomotive to full capacity; for example, while drifting, standing in stations or switching, and permitting the level to drop slightly between stations or on hard pulls.

38. It is bad practice to start out, after making a stop, with the injectors working. The cool water introduced into the boiler while the throttle was closed, starts circulating, and reduces the steam pressure. If a start is made under these conditions, the steam pressure will be still further lowered and an excessive amount of firing necessitated. It is, therefore, preferable to start the injector after a train is well under way.

39. The water level must never be high enough to allow water or very moist steam to be carried over the valve chambers and cylinders, because it will destroy the lubrication of these parts and may result in serious damage, due to knocking out cylinder heads, breaking pistons or bending of main rods.

40. The locomotive man can save coal and greatly assist the fireman in his work by handling the throttle and reverse lever in such a manner that the minimum amount of steam will be used. The locomotive should be operated with a full throttle opening (except when starting or drifting) when the cut off is 25% of the stroke or greater; but if 25% cut off with full throttle gives more power or speed than is needed, the reverse should be left at 25% cut off and the throttle partly closed as necessary. With locomotives using superheated steam it is well to use 15% cut off instead of 25%, as mentioned above.

**Descending Grades.**—41. Be sure that the crown sheet is thoroughly covered with water. When approaching a descending grade, the water supply should be increased and the fire allowed to burn down after the throttle is shut off, in addition, allowing the steam pressure to fall back below the popping point. Prepare the fire, if required, by cleaning same, or otherwise, cover it over to preserve the fire and avoid popping.

**Mixed Anthracite and Bituminous Coal.** 42. On certain locomotives, as well as in power plants, a mixture of anthracite and bituminous coal used in different proportions is consumed. While anthracite coal should be burned without being disturbed by a hook or fire tool, bituminous coal, however, often requires the use of the hook; this applies particularly where a large grate surface is available and a part of the grate surface is covered with a partially coked fire. This crust should be broken up so that every part of the grate surface will give up an equal amount of heat, thereby reducing the fuel consumption by effecting the highest state of combustion over the entire fire box instead of only a portion of the grate surface.

43. The successful use of mixed coals depends in part on the relative quantities of the two fuels employed; as a general rule, the practices that govern the successful use of bituminous coal are equally applicable in the use of mixed coals.

**Firing With Anthracite Coal.**—44. The most successful and economical method of firing anthracite depends almost entirely on the preparation of the fire. In cleaning an anthracite fire, all ashes and clinkers must be removed and a new bed of fire replaced over the entire grate surface if one is to ensure a prompt and positive burning, or to ignite the fresh coal that is placed on the cleaned fire. This will give a uniform thickness to the fire which can then be maintained by careful attention, but if the fire is cleaned in such a manner as to allow ashes or clinkers to remain in the fire after same has been cleaned, such will soon result in the formation of more ashes or dead spots. Anthracite coal, after being placed on the fire, should not be disturbed in any manner by a fire tool, even to remove clinkers or ashes, as it will not again burn level or develop the same rate of combustion over the grates. The imperfect combustion of anthracite coal can be clearly determined by the eye, a clean burning mass with a short flame; if the flame become diminished too much, however, the temperature and steam pressure will drop.

**Condition of Fire Reaching Terminal.** 45. Locomotives should not be brought into terminals with a dead fire, which is liable to cause flues to leak, nor with too heavy a fire, which will cause a waste of coal when the fire is cleaned.

**Cleaning Fires.**—46. When banking or cleaning fires, the blower should be used as little as possible, to avoid the rapid cooling down of the fire box and flues, which may cause leaks.

47. When cleaning fires, or with a banked fire, the excessive use of the injectors must be avoided, as this will result in injury to the flues by the rapid reduction of the temperature of the water in the boiler producing contraction, without sufficient fire in the fire box to counteract this effect.

48. After the fire has been cleaned of ash and clinker, the clean fire must be placed at the front end of the grates (where brick arches are not used) and maintained in good condition by applying small quantities of fuel, as may be required, in order to prevent cold air from passing through the front end of grate and injuring the flues. Where brick arches are used, the fire can be banker farther back, as the hot arch brick protects the flues.

49. The same general principles, in so far as upkeep, handling, inspection, etc., that apply to the coal burner, apply to the oil burner, with this difference, however, that while it is hard to get enough air into the ash pan of the coal burner it is quite easy to get too much air into the oil burner, and this applies especially to air leaks around the fire box, brickwork and mud ring. Frequent inspection should be made, by turning on the blower and holding a lighted torch to these points. If leaks are found they should be corrected each trip, as air thus admitted takes a short circuit, goes directly into the lower flues, causes them to leak and to coat over with soot, arresting combustion at this point. Next to the proper alignment of the burner, the avoidance of air leaks is the greatest factor to be considered from a fuel saving standpoint.

50. The burner should not be set so high as to cause the jet to strike the fire door, nor so low as to allow the flame to drag on the bottom. Any obstructions in the shape of fallen brick, etc., in front of the burner should be removed at once.

**Handling Oil.**—51. Different grades of oil require different methods of handling. However, all oil should be heated sufficiently to cause it to flow freely to the burner. While with many grades of oil the proper temperatures can be maintained with the closed heater, yet when using the heavy Mexican oils the open heater should be turned on strong at first so as to stir up the oil, thereafter shut it off and maintain the proper temperature with the closed heater. No oil of whatever grade should, however, be heated to above a point where the back of the hand cannot be pressed firmly against the tank without discomfort, for when oil is heated too hot many valuable heat units escape in the form of gas.

**Final Inspection and Work Reports.**—52. Great care should be exercised on the part of the locomotive man, on reaching the terminal, to make a thorough examination of the locomotive and prepare an intelligent written report for the information of the locomotive house foreman and those who make repairs.

53. Leaky piston and valve stem packing, cylinder packing or valves which cause blowing, all tend to draw on the coal pile unnecessarily, as it takes coal to generate wasted steam. This also applies to locomotives' steam heat appliances, cylinder cocks, safety valves which blow down too much steam pressure before closing, or, in, other words, to all steam wasted.

54. The fireman should be consulted in regard to any defects that have come to his notice, especially with the grates, grate rigging, brick arches, ash pan, firing tools, scoop rigging and dampers (where provided). Particular attention should be given to the condition of the brick arch, because this device, properly maintained, is a considerable factor in the saving of fuel and the reduction of smoke.

55. It is important that the locomotive man, as well as the locomotive inspectors, report all defects in a locomotive on arrival at a terminal which require attention before the locomotive is again placed in service, especially as some defects can be detected to the best advantage while the locomotive is in service.

**Oil Firing.**—56. In firing with oil, the locomotive man and fireman must work together. Every time the locomotive man changes the throttle or reverse lever the fireman must regulate his firing valve to suit the changed requirement. From this it follows that the locomotive man should never start the locomotive until the fireman is at the firing valve, and should be careful not to slip the locomotive, as such is liable to put out the fire, and the fireman should be equally careful not to use too much steam at the atomizer. Steam will not burn, and a bright fire with just a tinge of blue smoke at the stack indicates good combustion. Black smoke and a red fire indicate waste. Locomotive men should bear this one fact in mind, regardless of whether they are handling oil or coal burners. Any excess fuel used, either on account of a defective locomotive, or from poor handling on the part of the crew, is a charge against them and not against the locomotive house. Therefore, exercise care while out on the road and report all fuel wasting defects on arrival, and so keep your record clear.

**Operation of Superheater Locomotives.** 57. The general operation of superheater locomotives is the same as the ordinary saturated steam locomotive. Attention is directed to a few items in connection with superheater locomotives which need careful consideration.

58. Cylinder cocks should be kept open when standing, and, as far as possible, when starting, until dry steam appears.

59. A hydrostatic lubricator should be started at least 15 minutes before leaving time, in order that the valves and cylinders may be thoroughly lubricated when starting on the trip. The oil supply to the cylinders should be constant, as there is no water in the steam to assist in the lubrication and, on this account, the superheater locomotive requires more careful lubrication for valves

and cylinders than the saturated steam locomotive.

60. In starting, the reverse lever should be in full gear to ensure oil distribution to the full length of the valve bushings. Care must be taken that the water level in the boiler is not sufficiently high to cause water to carry over into the superheater.

61. The locomotive man should see that the water level is not carried so high that it will be drawn through the units with the steam, as this will result in making an auxiliary boiler of the superheater, thereby destroying the object aimed at in its application, but, in addition to this, the water carried over will deposit any scale forming matter it may hold in suspension or solution on the inside of the superheater units, thereby coating them with an insulating material that will prevent the free passage of the heat contained in the gases into the steam moving through the units. It is this liming up of superheater units through carrying the water too high or through foaming that causes the superheated locomotive to gradually lose its snap.

62. While there is a difference between carrying the water level too high and a foaming boiler, the results are quite the same; the only difference being that when the boiler begins to foam one can see the effect at once in dry valves, reduced speed, etc., while by carrying the water too high the evil effect is spread out over a greater distance and through a longer period of time. The bad effect is there, however, and always means more fuel and slower speed.

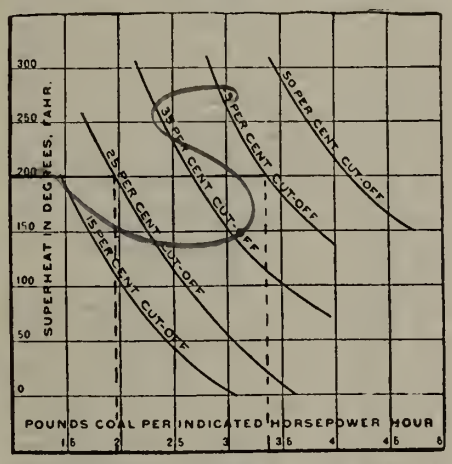
63. A superheater locomotive should not be moved without the required air pressure and the brakes in operative condition. When water is carried over into the superheater, part or all of it will flash into steam, even after the throttle is closed. Under the above condition the locomotive is not under control, because the valve chamber is filled with steam.

64. Superheater locomotives should be operated with a full throttle opening and reverse lever control, as far as service conditions will permit, the exceptions being: when starting a train, when using a very small quantity of steam, and when drifting. (See paragraph 40.) The accompanying chart illustrates the point in question and shows the variation in coal consumption with various degrees of superheat for each of the following cut offs: Fifteen per cent, 25%, 35%, 45% and 50%. The figures were taken from tests of a large Pacific type locomotive, but they apply with equal force to all superheater locomotives. For example, take the curve for 25% cut off at 200 deg. of superheat. The coal consumption is about 2 lb. per indicated h.p. hour. Then take the curve for 45% cut off at 200 deg. of superheat. The coal consumption is about 3.3 lb. per indicated h.p. hour. This clearly shows why it is better to operate with a full throttle and reverse lever control rather than with a partial throttle and long cut offs. The difference for the example taken is 1.3 lb., or 39% over the incorrect method. The chart also shows the advantages of a high degree of superheat at any cut off in reducing the coal consumption per indicated h.p. hour.

65. It is advisable, in order to avoid the suction of hot gases from the smoke box into the steam chest and cylinders, to keep the throttle slightly open when drifting or making stops, as by passing a very slight amount of steam through the cylinders the front end gases cannot be drawn into the exhaust column. The throttle must be completely closed just before coming to a full stop.

66. The firing should be light and regular, to produce as high flame temperature and as perfect combustion as possible in the fire box. A high fire box temperature results in high superheat, which will be obtained by a small coal consumption. A heavy, black fire means low temperature, low superheat and coal consumption. Firemen who carefully follow the above outlined practice will save coal for the company and make their own work easier.

67. The locomotive man should be sure that the superheater damper is open while using steam, and closed when steam is shut off. This can be ascertained by observing the counterweight on the right-hand side of the smoke box attached to the damper. When the counter weight is up the damp is open, and when down the damper is closed. When the locomotive is shut off and the blower is used, the locomotive man should observe that the damper is in a closed position. If the damper is open with the blower on, the superheater tubes are apt to be burned out, due to no steam circulating through the superheater tubes. When




**Variation in coal consumption, with varying superheat at different cutoffs.**

using steam, the piston in damper cylinder should always move its entire stroke and stop against its seat, in order to prevent loss of cylinder lubrication past the piston. A leak at this point will permit steam to escape at end of drip pipe attached to damper cylinder, and should be reported promptly.

68. Leaks in front end of superheater units, steam pipes and exhaust column, fire tubes stopped up, and derangement of draft appliances not only interfere with the proper steaming of the locomotive, but reduce the degree of superheat. Blows in cylinder and valve packing will cause scoring, due to removal of oil from the wearing surfaces. All leaks such as those mentioned above should be reported promptly by the locomotive man, because if neglected, they seriously affect the economical operation of the locomotive.

The Locomotive Stoker.—69. On arrival at the locomotive the fireman should see that the stoker is in operative condition, by trying it; next, see that it is properly lubricated, so it will stay in working order over the road; next, build up the fire by hand and see that it is ignited all over the grate surface. Don't try to build up the fire with the stoker, as the stoker may start a bank, and a bank with some certain grades of coal causes clinkers and clinkers mean trouble. Don't start the stoker feeding until you have pulled out of the yard, and then feed just as little coal as possible to maintain the desired pressure. Look into the fire box occasionally to see how the stoker is distributing the coal, it may save hot work with the hook later on. Shut off the stoker when standing in sidings or drifting down hill. Keep up the fire with the scoop. Close the slides in the deck before reaching the terminal, but keep the stoker running, so as to empty the conveyor trough. This will give the locomotive house men a chance to try the stoker and get it in shape for the next trip. Inspect it on arrival and report any defects found. The locomotive man should know as much about a stoker and its care and operation as the fireman. It is as much a part of the locomotive as the injector or air pump, and a locomotive man that cannot run it is not fully qualified.

70. Although the stoker may make it possible to keep ample steam pressure at all times, any failure on the part of the locomotive man to handle the locomotive skillfully will result in the same increase in the cost of fuel and maintenance as when a hand fired locomotive is abused. When you see foreign material in the coal throw it out before it enters the conveyor.

71. Should the stoker stop operating on the road, don't keep on using steam until the pressure runs down, but stop, if possible, locate the trouble, and fix it. If you cannot locate or repair the defect, give the fireman an opportunity to get the fire in shape so he can fire the locomotive to the terminal by hand. Do not give up the train because the stoker failed.

## General.

72. **The Diaphragm and Draft Plate** are put in to control the flow of gases through the flues and to distribute the draft over the grate surface as desired.

73. The draft plate has, however, another function, namely, to give direction to the gases in their passage from the flues to the stack, and in doing this, to aid in keeping the front end clear of cinders.

74. The draft plate simply serves to distribute the draft and to assist in keeping the front end clean. However, while the draft plate does not create draft, it is frequently so adjusted as to obstruct it, and in this way becomes a hindrance to the free steaming of a locomotive instead of a help.

75. The draft plate should always be set so that the opening between the plate and smoke arch is equal to 100% of the total flue area. If the front end should show a tendency to fill up with cinders when the plate is raised, change the angle of the plate by drawing the bottom farther back so it will stand nearly vertical. Furthermore, if the draft plate is too close to the front flue sheet the flow of the gases is so restricted as to cause the locomotive to be what is termed "hot at the door," consequently it follows that carrying the draft plate as high as possible not only decreases the work of the fireman, but also makes his work more comfortable. As it has been shown that the draft plate has but two functions, why change it after it has once been properly adjusted?

76. All front end appliances should be maintained according to the blue print standards as furnished by the mechanical department, keeping them in first class repair and adjustment. Records should be kept of front-end adjustments, so that when the locomotive is reported not steaming, the foreman or man in charge

of front ends will be able to tell whether someone has changed the size of the nozzle or any other adjustable parts, or whether the defect is in the locomotive. If the setting is on record, and the locomotive has steamed for months, or years possibly, and is reported "not steaming," no changes should be made in the front end, but the real trouble should be found and corrected. If such practice is followed, front ends can be set standard and so maintained.

**The Petticoat Pipe.**—77. In the modern locomotive the only function of the petticoat pipe is to increase the stack length, therefore it should fit tight into the base of the stack and be made non-adjustable, that is, it should simply be a stack extension.

**The Exhaust Nozzle.**—78. Reducing the nozzle to make a locomotive steam should be the last resort, as it not only reduces the efficiency of the locomotive, but materially increases the coal and water consumption as well as the work of the locomotive man.

79. Changes in the physical characteristics of the fuel or climatic conditions make it necessary at times to increase the draft, but instead of bushing the nozzle better results can be obtained by applying a rectangular or dumb-bell shaped tip of the same area, or better yet, bore the tip out ¼ in. larger, then apply a ⅜ in. round bridge, spot welded at each end to make it stay in place.

80. Nozzles should be maintained at the greatest possible diameter consistent with good steaming. Locomotives assigned to yard switching should have nozzle tips substantially as large as the opening in the nozzle pot. Yard locomotives do not require a sharp nozzle blast to make steam, and a large exhaust opening will not only materially reduce the fuel consumption but will make the work of the engine crew much more comfortable.

81. While bushing a nozzle will make a locomotive steam by lengthening the exhaust jet and increasing its velocity, yet what is gained in freer steaming is invariably lost in locomotive efficiency. Nozzles should not be reduced for any reason, however, except on the authority of some responsible officer, and not then until after thorough tests it has been shown that it is necessary.

**Locomotive Efficiency.**—82. A locomotive may be able to handle its stated rating and yet be far from an efficient locomotive under the meaning of the term as applied in this book.

83. By an efficient locomotive we mean one that will handle its stated rating over a given district in the shortest time on a minimum quantity of fuel.

84. Therefore, when we say a locomotive is 85% efficient, or that its efficiency is reduced 15% we mean one that will require 15% more time to make the same distance with the same tonnage as one that is 100% efficient, or else that it will consume 15% more fuel in doing the same work.

85. As a rule, poor time and excessive fuel consumption go hand in hand, therefore the locomotive man should report everything that tends to decrease the efficiency of the locomotive.

**Draft Efficiency.**—86. Under this head would come anything that in any manner interfered with or reduced the draft. The worst offender in this direction is the front end air leak, especially in superheated steam locomotives with steam pipes extending through the smoke arch. As a rule, in order to permit of their easy application and removal, the hole through the arch is cut large enough to accommodate the flange of the pipe. This opening is then partially closed by means of a split collar or bushing. In practically all of the locomotives built prior to 1918, this collar ar bushing still left an opening around each pipe equal to a round hole 5¾ in. in diameter, consequently, when the exhaust creates a partial vacuum in the front end, some air moving along the line of least resistance will be drawn in through these openings, instead of through the fuel bed, thereby decreasing the draft by that amount, making it necessary to reduce the nozzle in order to maintain the necessary vacuum. Tests have proved that sealing these opening permitted an increase of from ¼ in. to ⅜ in. in the diameter of the nozzle, resulting in a decrease of from 14% to 21% in fuel, with a corresponding increase in locomotive efficiency, at the same time very materially improving the locomotive's steaming qualities.

87. Another draft inefficiency found in superheated steam locomotives is the superheater damper. This should always be set at an angle of 60 deg. when open, the top of the damper leaning back; if set vertical, it obstructs the draft through the bottom flues.

88. Among other draft inefficiencies can be mentioned steam leaks in front end, either at steam pipe or nozzle joints, or at the connections between the superheater units and header. Any steam thus escaping into the front end tends to fill the vacuum being created by the exhaust jet and so reduces the draft. While the unit joints may leak quite a little without affecting the steaming of the locomotive materially, these leaks, nevertheless, can waste considerable steam, and in this way waste fuel.

**Plugged Flues.**—89. All flues clogged with cinders should be thoroughly bored out. Some tests conducted recently show that with one-half of the large smoke tubes stopped up, the performance of a superheated steam locomotive was reduced to practically that of a saturated locomotive, and the fuel consumption was increased 24%; a lesser number of these tubes stopped up affected the fuel consumption proportionately. Other tests proved that with 100 small tubes stopped up and the grate openings partially obstructed with clinkers the fuel consumption was increased 47%. This shows that cleaning flues, grates, etc., should receive the same careful attention accorded any other work.

**Scale on Flues and Fire Box Sheets.**—90. Tests have shown that a deposit of scale ⅛ in. in thickness resulted in a fuel loss of 15.6%. While the locomotive house foreman cannot entirely prevent the formation of scale on flues and fire box sheets, he can, however, help reduce it by careful, conscientious boiler washing.

**Steam Losses.**—91. Under this head are losses due to defective valves and valve seats in slide valve locomotives, valve rings and bushings in superheated steam locomotives, and losses due to defective cylinder packing rings in either or both. Some of these defects exist at times for several trips, especially in superheated steam locomotives, due to the fact that the leak is often of such a nature as not to cause a very loud blow except at full stroke; if, however, the escaping steam were measured, the amount of steam lost would often prove surprising. It has been found a good plan on many railways to make a regular inspection of valve rings and bushings, as well as cylinder packing rings, at stated periods.

**Losses Due to Improper Steam Distribution.**—92. Among locomotive house men it is a generally accepted opinion that valves but slightly out of adjustment make no material difference, in so far as steam consumption is concerned, they failing to realize the locomotive man will invariably work a locomotive at a cut off at which the locomotive sounds most nearly square. This will always be at a point of cut off longer than would be necessary to handle the train and make time were the valves in perfect adjustment; this results in the use of more steam than would otherwise be required, resulting in a corresponding loss of fuel and that much extra work for the fireman. Locomotive men should always report locomotives that do not sound square, and the locomotive house should make the proper adjustment as soon as reported. Lost motion will gradually develop in any valve gear, and lost motion will throw valves out of adjustment and so affect the steam distribution, steam consumption and general locomotive efficiency.

**Testing Safety Valves.**—93. The U.S. Federal Rules call for a quarterly test of pop or safety valves on all locomotives. The locomotive house man should endeavor to anticipate these tests so as to make them on dates when it is known that the locomotive will be ordered for service. This will save a part of the heat stored in the boiler, as well as the fuel remaining in the fire box after the test has been completed. It requires from 1200 to 1800 lb. of fuel to make this test, and, consequently, if made on date when the locomotive is not wanted this fuel is practically wasted.

**Stored Locomotives.**—94. When locomotives are stored or housed with the fire in them the fire should not be cleaned but should be banked on top of the old fire, allowing the ash to remain on the grate to reduce the draft through the fire while the locomotive is stored.

95. Where locomotives are equipped with a brick arch the bank should be placed under the fire door, and where not so equipped, against the back flue sheet. Then, just before the locomotive is required for service, the fire should be cleaned. Where it is not necessary to draw fires, the stack should always be covered to retain the heat stored in the water and to prevent unequal expantion between flues and boiler which might result in leakage. A simple handy stack cover can be made, as per accompanying figure. This can be placed over the stack from the floor and when not in use hung up on the locomotive house wall, one at each pit.

96. Without maximum steam pressure a locomotive may be ever so well maintained but will be unable to handle the proper tonnage successfully, either from an operating or from an economical point of view.

97. The locomotive house supervision should exert every effort to eliminate defects on the locomotive which will in any way interfere with free steaming qualities.

**Sand Pipes.**—98. The use of good sharp sand is essential in all classes of service to prevent fuel losses due to locomotives slipping, but the best of sand is useless unless delivered on the rail. This means that the sanding apparatus must be kept in good condition, and that the sand pipes must be clamped so as to retain the correct alignment.

**Direct Fuel Losses.**—99. In this class would come such losses as are visible

when they occur, such as coal rolling off the tender on account of the tender being overloaded; coal rolling out of the gangway, due to defective or poor design of coal gates; lack of coal guards, etc.; coal falling through holes in deck of locomotive; coal jarred off when drifting or running fast, due to excessive slack between locomotive and tender, etc. The remedy for such defects is obvious.

Suggestions to Locomotive Men.—100. Your rating as a locomotive man depends on your ability to operate the locomotive in your charge in the most efficient and economical manner. The suggestions in this book, if followed, will assist you to do this. The man who fails to follow same places himself in a position which may bring censure upon himself and others and seriously injure his reputation as a successful locomotive man.

101. When you are called to go out, endeavor to report at the locomotive house in plenty of time to check the register and bulletin boards and to thoroughly inspect the locomotive on which you are to make the trip. This applies to all locomotive men, whether regularly assigned or otherwise. A close inspection before leaving terminal, particularly if work has been reported, and frequent inspections during the trip, when conditions will permit, will prevent possible delays and locomotive failures that might otherwise occur.

102. Try the water glass cocks and gauge cocks and know that they are registering correctly. Know that all bearings are properly lubricated before leaving terminal, and thereby avoid having to stop later on account of some bearing running hot to which you had not given proper attention. Try both injectors and know that the are in good condition. Start the lubricator about 10 to 15 minutes before leaving the terminal, in order that oil will reach valves and cylinders before any work is to be done.

103. In testing air brakes, notice the fall of train line pressure while valve is on lap, and if this exceeds 5 to 7½ lb. per minute, notify car inspectors and be governed by the rules of the road by which you are employed.

104. It is well to note the condition of the fire unless you have an experienced fireman. Keep your fireman informed as to train movements in order that he may fire successfully.

105. In leaving the terminal, endeavor to work your locomotive as lightly as possible until the fireman has his fire in good condition. Work the locomotive at shortest cut off consistent with the work required in order to get the benefit of the expansive use of the steam. Carry water at the proper height in order to get as dry steam as possible to cylinders. Water that is carried over into superheater or the cylinders of a saturated locomotive is reducing the effectiveness of the locomotive regardless of the steam pressure shown on the gauge. Overfeeding a boiler to a point where priming occurs on a superheated locomotive will reduce the temperature 80 deg. or 100 deg. F.

106. Avoid rough handling in starting trains, as this may cause drawbar trouble later on. If you are unfortunate and pull out a drawbar, study the conditions and try to avoid a reoccurrence.

107. Avoid unnecessary stops for coal and water. Stop at points that will require the least effort to get the train away. It costs from 600 to 1500 lb. of coal to restore a train to speed, depending on the grade. Where conditions will permit, run coal dock in the direction in which coal is handled to coal dock.

108. Supervise the work of your fireman, giving him your help and the benefit of your experience. Team work is what counts. A locomotive is the equivalent of a large power plant; one, however, that is in motion when employed. Without a fixed foundation and compelled to carry its fuel and water supply with it, its management and operation under a continuous variety of conditions present problems that must be met instantly by the two men in charge. Robust, conscientious, industrious effort will always bring to men of character a high measure of personal satisfaction and material reward. There is much met with that is irritating in every vocation. Keep good-natured and your work will be correspondingly light.

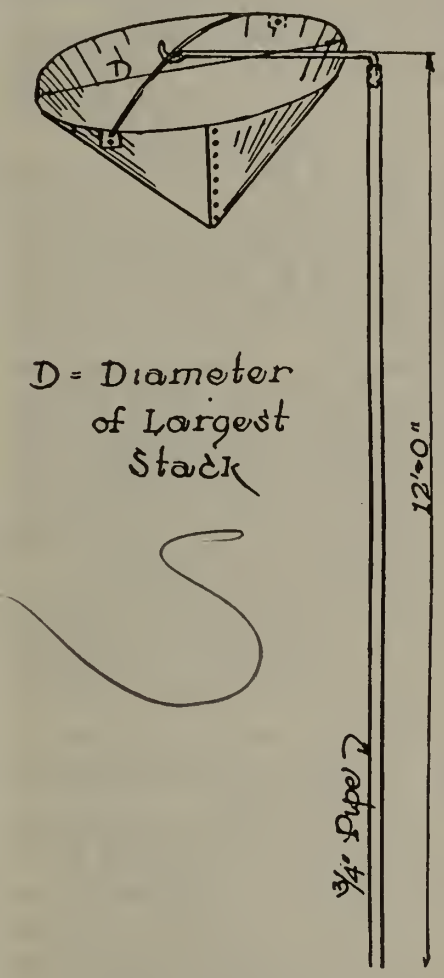



Fig. 11. Stack Cover.

109. If your fireman does not employ the best practice, instruct him yourself, and ask the road foreman or locomotive supervisor to have a friendly talk with him, setting him right.

110. Advise the fireman as to grades, shut off points, the length of time it is probable the train will be held on side track, etc., and explain to him your manner of handling the injector, so that he can anticipate your needs and fire accordingly.

111. Endeavor to work your locomotive at the shortest practicable cut off at all times, so as to obtain full benefit of the expansive force of the steam.

112. Endeavor to feed the boiler uniformly, and do not allow the water level to rise so high that the effectiveness of the locomotive or the superheater will be destroyed.

113. By careful handling, good lubrication of the valves and cylinders can be maintained with a very small quantity of oil. Oil that is fed with steam sticks to the metal surfaces and will lubricate for a long time unless it is washed off by water or burned off by drifting. If a proper water level is maintained and attention is paid to the position of the throttle and the reverse lever when drifting, a few drops of oil will protect a large rubbing surface. If, however, in order to cover up errors in judgment too high a water level is carried when running or if the boiler is overfilled when standing, water from the boiler with its scum and impurities will pass over with the steam and will scour the oil film from the cylinder and valve surfaces.

114. Whenever a high water level does occur, it will prove cheaper to use oil freely than to suffer the friction loss and fuel waste which result from dry valve seats and cylinder walls. Forethought will save both coal and oil, and locomotive men who make a good fuel performance generally make a good oil performance.

115. Avoid wasting steam at the pops. When conditions, such as emergency stops, make popping unavoidable, close your injector heater cocks and lightly blow steam back into the tank, thus heating the feed water. Injectors will lift water as warm as your hand (100 deg.) and feed water heated to this temperature saves about 4% of the fuel and increases the locomotive's steam capacity on hard pulls.

116. Careful judgment in handling the train brakes will save fuel. A moving train contains energy. Make the best use of this energy, consistent with safety. If you lose it by unwise braking, it must be restored through the use of fuel, both for the train and the air pump.

117. Avoid slipping your locomotive. It tears the fire and wastes coal.

118. Do not use your cab lights on your headlight in the daytime.

Suggestions to Locomotive Fireman.—119. A man in accepting a position as a locomotive fireman should make a study of his work, mastering it in the same manner that he would any other trade or profession.

120. A skillful locomotive fireman becomes a skillful locomotive man, and thereby places himself in a position for further advancement.

121. A few minutes each day, reading some authority on matters pertaining to your present duties, and those to which you aspire, will very materially assist you.

122. In firing a locomotive you are serving your apprenticeship as a prospective locomotive man and should consider the locomotive man for whom you are firing in the same position as the man of the shop in which you might be learning a trade, or the lawyer or doctor in whose office you might be studying the profession of law or medicine.

123. Harmony between the locomotive man and the fireman must exist in order to secure the best results. As the locomotive man is responsible for the performance of the locomotive while in his charge, so is the fireman responsible to the locomotive man for the manner in which he performs his duties. No one is better fitted to properly instruct the fireman than the locomotive man, as by his years of service he has learned by experience the manner in which these duties should be performed.

124. The duties of a locomotive fireman are varied, and merely keeping the

locomotive up to the popping point is not an indication that he is a successful fireman. While proper steam pressure is essential, there are many other things which are just as important.

125. A good start goes far toward making for a successful trip. Get around early enough to try the grates, blower, fire door, stoker, etc. See that you have all necessary supplies, then arrange your fire, so you will not have to work with it when you should be looking for signals.

126. Before leaving, have your fire built so that the heavy exhaust due to starting the train will not tear holes in it, thereafter fire as lightly as possible. Avoid "slugging" the fire regardless of whether the locomotive is hand or stoker fired—this will save work later on. Do not try to carry the steam pressure at the popping point, but within about 5 lb. of same, in order to avoid opening the door to prevent popping in case of an unexpected stop. Every time the pops open, fuel is wasted.

127. Worry wears more than work. The fireman will worry if he cannot keep steam. Try cracking the coal, firing light and often, closing the door between scoops. Keep the deck clean. This looks better, saves coal, and may save a sprained ankle. Wet the coal just enough to keep down the dust. Too much water on the coal retards combustion. Water will not burn.

128. Avoid the excessive shaking of grates, but keep the fire down in order that sufficient air can pass through the fire. By firing light and keeping the fire shaken down so that the fire box will not fill up with ashes, you will ensure the absence of black smoke, which is one indication of perfect combustion. An excessive amount of black smoke escaping from the stack is an indication of improper firing and should be avoided. Keep the fire free from banks, as the brighter the fire, the more heat is produced.

129. Do not use the rake unless it is absolutely necessary, and then only to remove clinkers or to remove a bank. Learn the profile of the road so that you can have your fire in condition to do the work required. When locomotive is not using steam, and water is being supplied to the boiler, have your fire in such condition that the water entering the boiler will not reduce the temperature of the fire box and sheets to a degree that would cause them to leak.

130. The overloading of tanks with coal is a serious proposition. You not only waste the coal that falls off, but employes and passengers may be seriously injured. A few minutes of your time taken in leveling the coal down will avoid this. Think about it. Is it worth your time to save someone from possible injury? At the end of your run, when the locomotive is placed on the receiving track, have your fire in such a condition that it can be either dumped or maintained as conditions demand, and see that there is sufficient water in the boiler to keep it safe until the hostler takes charge. Notify the locomotive man of all defects that should be corrected, that he may report them.

131. Close the fire door after each scoopful of coal is fired.

132. Do not shake the grates except when absolutely necessary — and then shake them gently. They should never be shaken while the locomotive is working hard; the high draft will then carry ash up into the tubes and superheater flues and clog them.

134. When your locomotive is running with a drifting throttle, fire only enough coal to keep the fire in good condition.

135. If large lumps of coal reach your tender, break them down before firing them.

136. Use the blower as lightly as possible, and no longer than is necessary.

137. When entering a terminal let your fire burn down to the proper level; but do not starve it to the point where, in order to get a boilerful of water, it will become necessary to rebuild it just before the locomotive goes on the cinder pit.

138. Do not use the injector when there is little or no fire in the locomotive. To do so starts the flues and side sheets leaking.

139. Keep your deck clean. A well swept deck with the coal in the tender sprinkled, but not flooded, helps save coal and increases your comfort.

140. Do not permit coal to fall off the gangway. This is not only wasteful, but dangerous.

141. Study the methods of good firing. Talk about them with other firemen. Try to improve your own practice.

142. On oil burning locomotives, sand the flues frequently; save oil by avoiding black smoke.

143. Whether using coal or oil, persistent black smoke indicates poor firing. Try at all times to avoid it, but especially in cities, where it causes not only fuel waste, but discomfort and damage.

**Suggestions to Locomotive House Officials.**—144. Have coal shoveled ahead on tenders at terminals remote from the mines, and put on no more coal at such points than is necessary to take the train back to the terminal nearest the mines.

145. Insist that tenders be not so overloaded as to spill coal. Have them trimmed before leaving the chute, so that surplus coal may be picked up.

146. Do not permit locomotives to be held under steam unnecessarily. If they must be held, bank the fires—if they are to be held for 24 hours, remove the fires.

147. Do not allow a locomotive to leave the terminal unless its fire is in proper condition.

148. Unless absolutely necessary, do not allow fresh coal to be placed in the fire box while the locomotive is held for its fire to be knocked.

149. To avoid delay at leaving time, have tools and supplies placed on the locomotive before the crew reports.

150. Maintain fire door openers so that they will operate properly.

151. Arrange fire doors not equipped with automatic openers so that they can be easily swung open and will remain latched open in rounding curves, and so they can be easily swung shut after firing each scoop of coal.

152. Brick arches must be maintained.

153. Injectors which are too large should be replaced with those of proper capacity.

154. When locomotive fires are cleaned, have a competent inspector enter the fire box. He should assure himself that the grates are thoroughly clean, that there are no broken grate fingers or excessive openings, that the grate is level when the grate lever keepers are in place and locked, and that the arches are clean and in repair. He should also see that the flues are clean and free from leaks, particularly the superheater flues. Superheater flues when clogged with soot and cinders are useless.

155. See that all coal burning locomotives have a total ash pan air opening equal to at least 14% of the grate area.

156. Maintain boilers up to their highest efficiency; wash them when necessary, and have the flues bored and blown out every trip. Give special attention to the superheater flues.

157. Eliminate front end air leaks.

158. Do not allow locomotives to run with mud ring leaks. This leakage represents a considerable waste of fuel.

159. Make a special inspection of all locomotives to see that the exhaust nozzles are opened up to the largest area consistent with proper steaming. Keep a nozzle record of all locomotives, showing the class, size, date of cleaning, and date of nozzle changes.

160. Holes in the cab decking, defective aprons, and lost motion in the tender connections all lead to direct coal losses.

161. Make certain that steam pipes and superheaters are tested at frequent intervals. Cold water tests should not, however, be made when the parts are hot.

162. See that cylinder and valve rings are maintained so that they do not blow; and keep the valves squared up on all locomotives.

163. On oil burning locomotives, maintain all piping, valves and operating fittings in good condition. Keep the burner clean and in proper alignment, making periodical inspections of burners to determine if defective. Pans must be maintained in good condition and rigidly secured to avoid air leaks at sides and front behind brickwork. Inspection should be made each trip to ensure brickwork being in good condition and all carbon and sand removed. Keep air openings free from slag and carbon accumulations.

164. The flues in an oil burning boiler require the same attention as a coal burner. Dampers should be maintained over all air openings, and must be easy to operate.

### Exhaust Nozzles.

In addition to the subjects heretofore treated, your committee was instructed to investigate the shape of exhaust nozzles to determine that which would produce the highest vacuum and least back pressure. It is believed that this a problem requiring for its solution the preservation of practically uniform conditions throughout the investigation and, therefore, one demanding a series of test plant observations. While it may be possible to obtain rough approximations in tests under road conditions, the variables are so numerous and so great as to impair the value of conclusions demanding a reasonable degree of accuracy. Variations affecting the results by as much as 5% would be fatal to an investigation in which such a variation is of as much importance as it is where both hauling capacity and fuel economy are involved. The facilities for the required investigation are not now at the service of the association and it is, therefore, impossible to submit any final conclusions at this time, but through the courtesy of the Pennsylvania Rd. a partial report may be made from tests conducted in the Altoona test plant. The investigations made by the Pennsylvania were for the purpose of ascertaining the maximum equivalent evaporation and the least average back pressure under uniform operating conditions with different shape nozzles.

1. The circular nozzle is circular in diameter at the entrance and gradually tapers to the exit diameter at a distance of one inch from the exit, the sides be-

ing parallel beyond this point.

2. The rectangular nozzle has a circular entrance area, this area gradually tapering into a rectanguler at 2⅜ in. from the inlet. From this point the sides of the opening are parallel for a distance of one inch to the tip of the nozzle.

3. The four internal projection consists of a circular nozzle having triangular shaped bars projecting 1 in. toward the center from four equal distant points to the edge of the nozzle. The bars have an edge turned toward the discharge jet.

4. The alligator nozzle, 12 in. high, consists of a circular nozzle having two jaws or points projecting 12 in. above the tip of the nozzle. The jaws are 6¼ in. apart at the tip, and this diameter remains constant to a point ¾ in. below the tip of the nozzle, from which point the diameter is gradually increased to the nominal dimension.

5. The alligator nozzle, 6 in. high, is similar to the 12 in. alligator nozzle already described, except that the jaws are 6 in. high.

6. The four vertical projection differs from the alligator nozzle, in that it has four points instead of two. The diameter is uniform to a point 1 in. below the tip of the nozzle, from which point it gradually increases to the nominal diameter at the bottom.

7. The vertical projection and splitter is circular, a splitter being fitted at the top, and a conical piece attached to the splitter at the center, projecting downward 6½ in. below the tip of the nozzle.

8. The special shaped nozzle consists of a circular nozzle, having four projections from the tip 4 in. high, which are bored conical, the diameter at the top being ¾ in. smaller than at the bottom of the projections. These projections are 2 in. wide at the bottom and flare out to about 4 in. in width at the top.

9. The splitter consists of a circular nozzle tapering on the interior for 2⅝ in. from the inlet, from which point the sides are parallel to the nozzle tip. Across the center is fitted a triangular piece, having one edge directed downward toward the discharge jet and having a width of ⅜ in. at the top.

10. The four notched circular nozzle is somewhat similar to no. 1, except that it has four notches set into it at the top. These notches are so shaped that they would form a rectangle were it not for the sides of the rectangle being cut in the form of a circle.

Tests were made on a Pacific type locomotive equipped with a Schmidt superheater and a brick arch. The same arrangement of front end details was maintained throughout the tests. With each design of nozzle, the evaporative rate was increased until the boiler limit was reached, the usual observations being taken of boiler and locomotive performance.

The results of the tests corresponding to the various shapes of nozzles are shown in the accompanying table. They indicate that under the conditions peculiar to this test with a nozzle having four internal projections it was possible to obtain a higher equivalent evaporation per hour with less back pressure than with a circular or rectangular nozzle having approximately the same net area.

**Summary of Results of Nozzle Tests.**

| Description. | Dry coal per hour. | Equivalent Evap. per hour. | Average least back pressure. | Rank. |
|---|---|---|---|---|
| Four internal projections | 9 421 | 65 129 | 14.9 | 1 |
| Rectangular . . ..... | 9 810 | 64 316 | 14.3 | 2 |
| Circular, area 33.29 ..... | 4 218 | 49 249 | 9.2 | 6 |
| Circular, area 30.68 ..... | 6 734 | 52 223 | 10.5 | 5 |
| Alligator, 12 in. high .... | 5 292 | 47 852 | 9.6 | 11 |
| Alligator, 6 in. high .... | 6 186 | 49 129 | 11.2 | 9 |
| Four vertical projections | 5 833 | 50 773 | 8 | 6 |
| Vertical projection and splitter . . ..... | 7 048 | 59 624 | 10.8 | 5 |
| Four notched circular .. | 5 003 | 50 833 | 8.1 | 7 |
| Splitter . . ..... | 7 304 | 58 586 | 10.9 | 4 |
| Special shape ..... | 5 854 | 47 890 | 5.8 | 10 |

Conclusions.—Your committee does not consider the information now available sufficiently complete to justify positive conclusions as to the most efficient shape of nozzle, and is only in position to report that the circular form of nozzle does not result in the highest vacuum and the least back pressure. As to what form will produce those conditions it is impossible to say without an extended investigation involving a long series of test plant observations. It seems evident, however, that all preconceived ideas of exhaust jet action must be revised, to agree with the apparent fact that the best results will be obtained when the jet countour is interrupted as is the case both with the internal projection nozzle and with the one having one axis longer than the other.

### Front End Design.

Your committee has given some consideration to the matter of front end appliances, as affecting fuel economy and locomotive repair costs, but is unable to present a design applicable to all types of locomotives in different classes of service. In fact, from the information at hand, it is believed that a suitable general standard would not meet practical requirements, because of the variables introduced through differences in dimensions vitally affecting the problem. It, therefore appears to be necessary that the best arrangement be determined for each class of locomotive and normal service conditions using the regular fuel supply. It is probable that better results can be produced by these means than could possibly be obtained from any pre-determined standard that did not duplicate all the variables, including those arising under service conditions.

Your committee does believe, however, that there is opportunity for increased facility in maintenance, and reduced cost of repairs through the use of the so-called "unit" front end netting arrangement. It is obvious that a design permitting the complete removal of the assembled netting will be more easily maintained, will reduce locomotive shop hours, and effect a reduction in the cost both of labor and material. For these reasons, it is the opinion of the committee that the use of some form of unit front end should be extended.

A suitable standard having been determined, the front end details should be permanently fastened to prevent further adjustments. Diaphragm plates and stack extensions or so called "pettitcoat pipes" should be riveted or welded in position and never changed except on the recommendation of the authority establishing the correct relations. The only variable in the front end should be the exhaust nozzle and this should never be altered to cure a steam complaint until the cause of the complaint has been determined.

Running Stoker Fired Locomotives Over More Than One Division. — Your committee recognizes that there may be some fuel economy in running stoker fired locomotives over more than one division, but does not find that the practice prevails on any of the larger systems operating these locomotives. While it may be practicable to increase the mileage of such locomotives, the net economy of operation is doubtful, especially as topographical conditions are frequently such that it is impossible to handle the most economical rating on the second division, the loss in fuel per thousand ton miles therefore exceeding the saving otherwise effected. This is a question that must be determined by local operating conditions, including terminal facilities.

In conclusion, your committee desires to emphasize the continued importance of the fuel problem, especially at this period of rising costs, of inadequate labor supply, and of car shortage. It must be admitted that the outlook for more favorable conditions is not promising, and it, therefore, becomes a paramount duty to employ all reasonable means of economy in order that the available fuel supply may be conserved and diverted to useful productive purposes.

## Canadian National Railways Earnings.

| | 1920 | 1919 |
|---|---|---|
| January . . ..... | $ 7,727,562 | $ 6,787,517 |
| February ..... | 6,516,059 | 6,265,562 |
| March . . ..... | 7,761,326 | 7,160,036 |
| April . . ..... | 8,207,478 | 6,936,635 |
| May . . ..... | 8,305,860 | 7,884,287 |
| June . . ..... | 7,776,538 | 6,433,035 |
| | $45,834,823 | $41,467,072 |

## Canadian Northern Railway System.

| | 1920 | 1919 |
|---|---|---|
| January . . ..... | $4,200,700 | $4,026,000 |
| February . . ..... | 3,862,300 | 3,363,800 |
| March . . ..... | 4,587,700 | 3,554,350 |
| April . . ..... | 4,732,623 | 3,878,149 |
| May . . ..... | 4,863,500 | 4,337,750 |
| | $22,246,823 | $19,160,049 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan... | $13,914,569 | $13,328,628 | $585,941 | *$967,571 |
| Feb... | 13,557,104 | 12,843,231 | 713,873 | *267,242 |
| Mar... | 15,715,937 | 13,758,171 | 1,957,766 | 418,721 |
| Apr... | 15,929,416 | 13,587,570 | 2,341,846 | 253,222 |
| May... | 16,459,986 | 13,262,044 | 3,197,942 | 164,182 |
| June.. | 16,480,574 | 13,849,757 | 2,630,817 | *359,604 |
| | $92,057,586 | $80,629,400 | $11,428,186 | *$758,292 |
| Incr. | $15,335,319 | $16,093,611 | ..... | ..... |
| Decr. | ..... | ..... | 758,292 | ..... |

Approximate earnings for three weeks ended July 21, $11,275,000, against $9,047,000 for same period 1919.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Decrease |
|---|---|---|---|---|
| Jan. | 5,054,034 | $ 5,867,445 | $ *813,441 | $ 97,406 |
| Feb. | 4,660,831 | 5,159,742 | *498,911 | 188,987 |
| Mar. | 5,756,372 | 5,491,293 | 265,079 | 575,215 |
| Apr. | 5,477,816 | 5,187,340 | 290,476 | 465,592 |
| May | 5,878,934 | 5,547,513 | 331,421 | 337,200 |
| | $26,827,987 | $27,253,333 | *$ 425,346 | $1,664,400 |
| Incr. | $2,194,867 | $3,859,267 | ..... | ..... |
| Decr. | ..... | ..... | $1,664,400 | ..... |

*Deficit.

• Government's Railway Policy. — The National Liberal and Conservative Party's platform, announced at Ottawa July 1, contains the following:—"Recognition of the necessity, under existing conditions, of amalgamating and unifying the various railway lines owned by the Dominion, with a view to eliminating duplication and effecting economies in construction and administration. Expert management and operation of the entire railway systems, unfettered by partisan political interference. The fixing of a proper capitalization for the National Railway System."

# Merging the Grand Trunk Railway into the Canadian National Railways.

### Arbitration of Stock Values.

The act confirming the agreement between the Dominion Government and the G.T.R. Co. for the acquisition by the Government of the company's capital stock, except the 4% guaranteed stock, passed by the Dominion Parliament at its last session, provides in sec. 6 as follows:—The value, if any, to the holders thereof, of the preference and common stock shall be determined by a board of three arbitrators, one to be appointed by the government, one by the Grand Trunk, and the third shall be Sir Walter Cassels, Judge of the Exchequer Court of Canada, who shall be Chairman of the board. Should Sir Walter Cassels die or be unable to act, the said parties shall agree upon another third arbitrator who shall be either the then Judge of the Exchequer Court of Canada, or one of the judges of the Supreme Court of Canada, and who shall likewise be Chairman. Should any vacancy occur in the board of arbitrators other than the third arbitrator, the arbitrator to fill the vacancy shall be appointed in the same way as the arbitrator whose seat has become vacant was appointed."

On July 9 the Dominion Government passed an order in council appointing Rt. Hon. Sir Thomas White as its arbitrator on the board. The G.T.R. Co. has appointed W. H. Taft, ex-President of the United States, as its arbitrator. The government will be represented by the following counsel: N. W. Tilley, K.C., Toronto; Hector McInnes, K.C., Halifax; H. A. Lovett, K.C., Montreal, and Pierce Butler, St. Paul, Minn. The G.T.R. will be represented by W. H. Biggar, K.C., Vice President and General Counsel; Eugene Lafleur, K.C.; A. W. Atwater, K.C., Montreal, and F. H. Phippen, K.C., Toronto.

### Co-ordination of Services.

Canadian Railway and Marine World has given in previous issues full particulars of the appointment of the managing committee, representing the Dominion Government and the G.T.R., to ensure the operation of the latter in harmony with the C.N.R., pending the arbitration as to G.T.R. stock values, and the transfer of the company's property to the government. Sub-committees, appointed by the managing committee, have done a large amount of work in this connection, some of the results of which were given in Canadian Railway and Marine World for July, and particulars of others are given below.

### Traffic Department Changes.

Boston, Mass.—C. J. Pierce, heretofore General Agent, Freight Department, G. T.R., will also act in same capacity for Canadian National Rys. in New England District, vice C. K. Howard, heretofore General Agent, C.N.R., appointed General Tourist Agent, C.N.R., Toronto.

Buffalo, N.Y.—Ira W. Gantt, heretofore Assistant General Freight Agent, G.T.R., will also act in the same capacity for Canadian National Rys., with supervision of traffic through the Niagara frontier, also of traffic under jurisdiction of freight traffic offices at New York, Philadelphia, Buffalo, Pittsburg, Toledo, Cleveland and Cincinnati.

G. A. McGuire, heretofore Commercial Agent, Freight Department, G.T.R., will also act for the C.N.R. Both these Buffalo officials continue their offices in the Chamber of Commerce Building.

Cincinnati, Ohio.—W. K. Evans, heretofore Commercial Agent, Freight Department, G.T.R., will also act for C.N. R., continuing his office in Traction Building.

Cleveland, Ohio.—D. M. Crawford, heretofore Commercial Agent, G.T.R., at Pittsburg, Pa., has been appointed General Agent, C.N.R. and G.T.R., at Cleveland, Ohio, with office in Kirby Building.

Hamilton, Ont.—R. J. S. Weatherston, heretofore Division Freight Agent, G.T. R., will also act in the same capacity for C.N.R., vice G. M. Thomas, heretofore District Freight Agent, C.N.R., appointed Commercial Agent, C.N.R.-G.T.R., at Windsor, Ont.

F. T. Nelson has been appointed City Freight Agent for the C.N.R. and G.T.R. at Hamilton.

Montreal.—H. A. Carson, heretofore City Freight Agent, G.T.R., will also act in the same capacity for Canadian National Rys., vice S. E. Leger, of the C.N. R., who has been assigned to special duties in Montreal.

New York, N.Y.—J. O. Adams, heretofore General Eastern Freight Agent, G. T.R., will also act in same capacity for C.N.R., vice F. A. Young, General Agent, C.N.R., transferred. Mr. Adams' office continues at 1405 Woolworth Building.

Ottawa.—E. J. Hilliard, heretofore Division Freight Agent, G.T.R., will also act in same capacity for C.N.R. Territory, east of North Bay, Ont., to Hawkesbury, also Kingston-Harrowsmith and east. The position of acting Division Agent, C.N.R., held heretofore by Geo. Collons, has been abolished, Mr. Collins reverting to Special Agent, C.N.R., at Trenton, Ont.

A. H. Gow has been appointed City Freight Agent for C.N.R. and G.T.R. at Ottawa.

Philadelphia, Pa.—C. G. Haigh, heretofore Commercial Agent, Freight Department, G.T.R., will act in same capacity for C.N.R., continuing his office at 114 Customs House Place.

Pittsburg, Pa.—F. G. Wood, heretofore General Agent, C.N.R., has been appointed General Agent, Freight Department, for both the C.N.R. and G.T.R.

W. J. Burr, heretofore General Agent, Passenger Department, G.T.R., will also act in the same capacity for Canadian National Rys., vice F. G. Wood, heretofore General Agent, G.T.R., Pittsburg, who has been appointed General Agent, Freight Department, C.N.R. and G.T.R., at Pittsburg.

Quebec, Que.—E. Labreque, heretofore City Freight Agent, Canadian National Rys., will also act in the same capacity for the G.T.R.

Toledo, Ohio.—S. G. Wagstaff, heretofore Commercial Agent, Freight Department, G.T.R., will also act in same capacity for C.N.R., continuing his office in Bank of Commerce Building.

Sherbrooke, Que.—L. J. Rouleau, heretofore Commercial Agent, G.T.R., Quebec, Que., has been appointed Commercial Agent, C.N.R. and G.T.R., at Sherbrooke, Que.

Windsor, Ont.—G. M. Thomas, heretofore District Freight Agent, Canadian National Rys., Hamilton, Ont., has been appointed Commercial Agent, Canadian National-Grand Trunk Rys., at Windsor.

### Changes in Station Services, Etc.

Belleville, Ont.—As the G.T.R. Toronto-Montreal day local trains 9 and 10, and Kingston-Toronto trains 29 and 30, now operate over the C.N.R. from Napanee to Colbright Jct., Belleville station, C.N.R., E. M. Kiske, agent, is now joint with the G.T.R., for handling passenger traffic. It is also joint with the C.P.R.

As Canadian National Toronto-Ottawa trains 6, Capital City, and 5, Queen City, now operate via G.T.R. double track between Toronto and Napanee and via C. N.R. east thereof, the G.T.R. station at Belleville, T. H. Coppin, agent, is now joint with the C.N.R. for passenger traffic.

Brighton, Ont.—Until the permanent track connection is installed both the C.N. R. and G.T.R. stations are being continued.

Cobourg, Ont. — All traffic is now handled at the G.T.R. station, E. J. Warmington, agent, and the C.N.R. station, A. D. Leonard, agent, has been closed, except that for handling C.N.R. Toronto-Ottawa night trains, 7 and 8, and the C.N.R. Cobourg-Toronto morning local, 31, a night ticket seller and operator is maintained at the C.N.R. station, reporting to the joint agent.

Colborne, Ont.—The C.N.R. has discontinued all passenger train service at Colborne, and its station (G. Merkley, agent) has been closed. All traffic is being handled at the G.T.R. station, J. Thorne, agent.

Deseronto, Ont.—As the G.T.R. Toronto-Montreal day locals 9 and 10, and Kingston-Toronto trains 29 and 30, now operate over C.N.R. from Napanee to Colbright Jct., Deseronto station, W. R. Thomas, agent, is now joint with the G. T.R. for handling passenger traffic.

Grafton, Ont.—The C.N.R. has discontinued all passenger train service at Grafton, and its station (H. L. Gummer, agent) has been closed. All traffic is being handled at the G.T.R. station, H. Ford, Agent.

Kingston, Ont.—All C.N.R. passenger trains now operate to and from G.T.R. Kingston joint station, J. W. Hanley, Agent. The C.N.R. formerly used the C.P.R. Kingston passenger terminals.

Montreal, Que.—The C.N.R. operates the sleeping and dining car service on new trains placed in service from Montreal to Sudbury and Montreal to Winnipeg, and the Pullman ticket office at Bonaventure station is now a joint office handling sleeping and parlor car tickets for both the Canadian Northern and Canadian Government Rys. Division of the Canadian National Rys. and also for G. T.R. trains.

The C.N.R. motor truck now handles all railway business mail and company's supplies between all C.N.R. and G.T.R. offices and stations in Montreal.

Napanee, Ont.—The C.N.R. station has been closed and C.N.R. traffic is now handled at the G.T.R. station, F. B. Allison, agent. All C.N.R. passenger trains now operate to and from the G.T.R. station, except the Toronto-Ottawa night trains 7 and 8, which stop at Selby Road crossing.

Parry Sound, Ont.—The C.N.R. passenger station, W. G. Fowler, agent, is now joint with the G.T.R., on account of G.T.R. Ottawa-Parry Sound trains 47 and 52 operating to and from C.N.R. station, Parry Sound, via James Bay Jct.

Pembroke, Ont.—The C.N.R. has built a connection with its Pembroke station to the G.T.R. track, a mile and a half from the G.T.R. Pembroke station, the length of the connection being one mile. The C.N.R. has changed the name of its Pembroke station to Pembroke Jct. C. N.R. local passenger trains between Pembroke and Ottawa run to and from the

G.T.R. Pembroke station. using the C. N.R. line between Pembroke Jct. and Ottawa. C.N.R. through trains between Montreal and Sudbury do not run to and from the G.T.R. Pembroke station, but pick up and discharge passengers at the C.N.R. Pembroke Jct. station. The G.T. R. station agent at Pembroke, J. G. Valier, is joint agent for both railways, the C.N.R. Pembroke Jct. station being merely a junction point from which the agent has been removed, and at which only operators are stationed, who also sell tickets for the through trains. Freight for Pembroke, collected on the C.N.R., is taken to the G.T.R. freight shed there, where delivery is made, and conversely shipments from Pembroke are received at the G.T.R. station and handled by the C.N.R. from Pembroke Jct.

Smithfield, Ont.—Owing to the operation of G.T.R. trains 9, 10, 29 and 30 via C.N.R. between Colbright Jct. and Napanee, the C.N.R. has established a flag stop at Smithfield, 2.8 miles east of Brighton, for accommodation of traffic which was handled previously on these trains at the G.T.R. Smithfield station.

Toronto union station.—The C.N.R. and G.T.R. ticket offices have been consolidated, W. Grundy, station ticket agent, G.T.R., being appointed station ticket agent for both G.T.R. and C.N.R.; G. A. Gould, heretofore station ticket agent, C.N.R., being appointed assistant station ticket agent for both lines.

The Pullman ticket office at Toronto union station, G. W. Deyell, agent, has taken over the sale of all sleeping and parlor car space for C.N.R. trains, in addition to the sale of space for G.T.R. trains previously in effect.

Trenton, Ont.—The C.N.R. Toronto-Ottawa trains, 6, Capital City, and 5, Queen City, now operate via G.T.R. double track between Toronto and Napanee and via C.N.R. east thereof. The G.T.R. Trenton station, M. A. Harris, agent, is now joint with the C.N.R. for passenger traffic.

As the G.T.R. Toronto-Montreal day local trains 9 and 10, and Kingston-Toronto trains 29 and 30, now operate over the C.N.R. from Napanee to Colbright Jct., Trenton station, C.N.R., C. A. Reid, agent, is now joint with the G.T.R. for passenger traffic.

Wicklow, Ont.—As local passenger service on the C.N.R. between Cobourg and Brighton has been withdrawn, a new stop, named Wicklow, has been established on the G.T.R., 2.2 miles east of Grafton, for handling milk traffic, which formerly moved via Wicklow station on the C.N.R.

Winnipeg, Man.—The C.N.R. and G.T. P.R. freight terminals and cartage matters have been amalgamated under E. W. Warner, local freight agent, C.N.R., there.

Co-ordination of Express Services.

The Canadian Express and the Canadian National Express Company's services are being co-ordinated in accordance with the general plan adopted in connection with the Canadian Northern and Grand Trunk Railways lines. The changes will avoid duplication of service and secure increased efficiency. The officers of the two express companies are working in close harmony, under direction of the managing committee, and arrangements have been made whereby, at common points where both express companies have maintained separate offices, staffs, and wagon service, they will be consolidated and managed under a joint agent for both companies. Under this arrangement the agency of the express company doing the preponderance of business at any particular point will take charge of the business of the other company as well. In the east this, in a general way, works out that the Canadian Ex. agency becomes the joint agency of both the Canadian Ex. and the Canadian National Ex. Cos., but in the west the reverse is the case, the Canadian National Ex. Co.'s agency becoming the joint agency of the two companies. Consolidations have been effected at the following points:—Guelph, Hawkesbury, Brockville, Trenton, Port Hope, Cobourg, Oshawa, North Bay and Pembroke, Ont.; Winnipeg, Man.; Regina, Moose Jaw and Saskatoon, Sask.; and Calgary and Edmonton, Alta. Similar steps will be taken at the larger cities, as soon as details can be worked out. Following are details of some of the changes made:—

Cobourg, Ont.—The Canadian National Ex. office has been consolidated with the Canadian Ex. office, F. W. Baker, of the Canadian Express Co., being joint agent. The Canadian National Ex. Co.'s former agent, A. G. Leonard, has been assigned to other duties.

Guelph, Ont.—The Canadian National Ex. office has been consolidated with the Canadian Express, J. E. Phelan, Canadian Express, being joint agent. The Canadian National Ex. Co.'s former agent, T. H. Belt, remains at Guelph as agent for Toronto Suburban Ry.

Kingston, Ont.—The Canadian National Ex. office has been consolidated with the Canadian Express. The Canadian National Ex. Co.'s former agent, N. C. Dunn, has been assigned to other duties with the Traffic Department.

Napanee, Ont.—The Canadian National Ex. office has been consolidated with the Canadian Express, G. A. Taylor, of the Canadian Express, being joint agent. The Canadian National Ex. Co.'s agent, E. J. McLaughlin, has been assigned to other duties.

North Bay, Ont.—The Canadian National Ex. Co.'s office has been consolidated with the Canadian Express, B. W. Baily of the Canadian Express being joint agent. The Canadian National Ex. Co.'s former agent, E. J. Tilt, remains at North Bay as Freight Agent, C.N.R.

Pembroke, Ont.—The Canadian National Ex. Co.'s office has been consolidated with the Canadian Express, G. J. Valin, of the Canadian Express, being joint agent. The Canadian National Ex. Co.'s former agent, J. B. Scanlan, being assigned to other duties.

Port Hope, Ont.—The Canadian National Ex. Co.'s office has been consolidated with the Canadian Express, C. G. Dohney, of the Canadian Express, being joint agent. The Canadian National Ex. Co.'s former agent, H. W. Mitchell, remains in Port Hope in commercial business.

Trenton, Ont.—The Canadian Express Co.'s office has been consolidated with the Canadian National Ex. Co.'s office, D. Harrison, of the Canadian National Ex. Co., being joint agent. The Canadian Ex. Co.'s former agent, N. R. Duelta, has been transferred to Oshawa, Ont.

The Canadian Ex. Co. has arranged for the operation over the G.T.R. between Toronto and Montreal, also serving intermediate points, of a train carrying express shipments exclusively. This train leaves Toronto eastbound at 9.25 p.m., and leaves Montreal at 8.30 p.m., arriving at destinations in time to secure deliveries of express in the cities concerned early on the following morning. This train is made up of express cars that were hauled hitherto between these points on night passenger trains. It will ensure the prompt handling of express matter and prevent the possibility of delays to passenger trains.

A daily express service, instead of triweekly as heretofore, has been established from Montreal and from Toronto, to Winnipeg and Vancouver, in connection with the new passenger train service which has been inaugurated from Toronto via Grand Trunk, Timiskaming & Northern Ontario and National Transcontinental Railways to Winnipeg, Grand Trunk Pacific to Edmonton, and Canadian National to Vancouver. From Montreal the route is by Grand Trunk to Ottawa, Canadian National to Winnipeg, Grand Trunk Pacific to Edmonton and Canadian National to Vancouver.

The Canadian Ex. Co., which operates over the Intercolonial Ry., has extended its service over the Halifax & South Western Ry. from Halifax to Yarmouth, N.S., which was handled heretofore as a local service by the H. & S. W. R. express department.

Important Changes in Train Service.

Daily night train service has been inaugurated between Montreal, Bonaventure station and Quebec, Palais station, leaving Montreal 11.15 p.m., arriving Quebec 6.30 a.m.; leaving Quebec 10.55 p.m., arriving Montreal 6.30 a.m. Connections are made at Bonaventure station with G.T.R. trains and transfer between stations in Montreal is thereby eliminated. A through sleeping car is also operated between Ottawa and Quebec, leaving Ottawa 7.20 p.m. daily except Sunday, arriving Quebec 6.30 a.m.; leaving Quebec 10.55 p.m. daily except Saturday, and arrive Ottawa 11.45 a.m.

Toronto-Montreal-Quebec train services make connections at Quebec with Quebec & Saguenay Ry. trains between Quebec and Murray Bay. This line is being operated by the contractors for the government. A parlor car is now operated on the Saturday morning train Quebec to Murray Bay, and the Sunday evening train Murray Bay to Quebec, while a buffet parlor car is in service on the daily except Sunday trains, leaving Quebec in the afternoon for Murray Bay, returning from Murray Bay in the morning.

The Quebec-Cochrane, Ont., service is now daily, leaving Quebec 5.30 p.m., arriving Cochrane 5.20 p.m. the following day; leaving Cochrane 8.45 p.m., arriving Quebec 8 p.m. the following day. Standard sleepers and dining cars are operated and close connections are made at Cochrane in both directions with Toronto-Winnipeg trains, thereby providing a daily service between Quebec and Winnipeg.

Daily service has been established between Montreal and Sudbury via G.T.R., between Montreal and Ottawa and C.N.R. west thereof, leaving Montreal 6.10 p.m., arriving Sudbury 11.30 a.m.; leaving Sudbury 8.15 p.m., arriving Montreal 1.15 p.m. Standard sleepers and cafe parlor cars are operated.

G.T.R. Toronto-Montreal trains 9 and 10 (old nos. 6 and 7) run via C.N.R. line between Napanee and Colbright Jct.

Canadian National Toronto-Ottawa day trains 5 and 6, now operate over the G. T.R. double track between Toronto and Napanee, and the Canadian National east thereof, providing a fast day service, the run being made in 7 hr. 15 min.—a reduction of 1 hr. 45 min. from schedule previously in effect. The service is daily except Sunday. No. 5, the Queen City, leaves Ottawa 1.15 p.m., arrives Toronto 8.30 p.m. No. 6, the Capital City, leaves Toronto 12 noon, arrives Ottawa 7.15

p.m. Cafe parlor and observation parlor cars are operated on these trains.

G.T.R. trains 29 and 30 now operate between Toronto and Kingston, Ont., and run via C.N.R. between Colbright Jct. (2.4 miles west of Brighton) and Napanee, daily except Sunday. No. 29 leaves Kingston 6 a.m., arrives Toronto 11.15 a.m. No. 30 leaves Toronto 6 p.m., arrives Kingston 11.30 p.m. Cafe parlor car service is provided on these trains.

Local Canadian National passenger trains now operate between Ottawa union station and Pembroke, Ont., G.T.R. station, daily except Sunday.

Canada National Trenton - Picton trains connect at Trenton and Trenton Jct. with Canadian National and G.T.R. trains, providing an improved service to and from all points east and west of Trenton.

G.T.R. trains 47 and 52 use C.N.R. Parry Sound station. These trains operate daily except Sunday between Parry Sound as follows: leave Ottawa 8.35 a.m., arrive Parry Sound 9.25 p.m.; leave Parry Sound 6.45 a.m., arrive Ottawa 6.40 p.m.

Daily night trains have been placed in operation between Toronto, Sudbury and Capreol, leaving Toronto 9.30 p.m., arriving Sudbury 8 a.m., and Capreol 9 a. m.; leaving Capreol 9.35 p.m., leaving Surbury 10.30 p.m., arriving Toronto 8.50 a.m. Standard sleeping cars are operated daily between Toronto, Sudbury and Little Current, via Algoma Eastern Ry. between Sudbury and Little Current. Buffet sleeping car operates between Toronto, Sudbury and Capreol.

Through service has been established between Montreal and Winnipeg via G. T.R. between Montreal and Ottawa, C.N. R. west thereof, leaving Montreal 6.10 p.m. Tuesdays, Thursdays and Saturdays, arriving Winnipeg 9.45 p.m., the second day; leaving Winnipeg 8.30 a.m., Mondays, Wednesdays and Saturdays, and arriving Montreal 1.15 p.m. the second day. The equipment consists of dining cars, standard tourist and compartment observation library cars.

The National trains 3 and 4 (old nos. 9 and 10) operate daily between Toronto and Winnipeg via G.T.P.R. North Bay and T. & N. O. R. to Cochrane, thence over the National Transcontinental Ry., leaving Toronto 11 p.m., arriving Winnipeg 6 p.m. the second day; leaving Winnipeg 5 p.m., arriving Toronto 3 p.m. the second day. Standard and tourist sleeping cars and dining cars are operated on these trains and compartment observation library cars will be added shortly.

The connections at Port Arthur for steamship passengers Winnipeg and beyond are as follows: Montreal-Winnipeg trains arriving Port Arthur, Mondays, Thursdays and Saturdays connect with Northern Navigation Co. steamships from Detroit and Sarnia, arriving Port Arthur 6.30 a.m. (eastern time) on these days, and service is thus provided for boat passengers for Western Canada who will arrive Winnipeg the same evening at 9.45 (central time).

The Canadian National now provides a daily Winnipeg-Edmonton service, trains 5 and 6 via Regina, Saskatoon and North Battleford, leaving Winnipeg 10.20 p.m., arriving Edmonton 9 a.m. the second day. Leaving Edmonton 8 p.m., arriving Winnipeg 7.45 a.m. the second day. Standard sleepers are operated between Winnipeg and Regina, Winnipeg and Edmonton, and dining cars between Winnipeg and Edmonton.

Through service between Winnipeg and Calgary has been arranged by Canadian National Rys. via Dauphin, Saskatoon and Hanna, trains 9 and 10 operating as follows: Leave Winnipeg 10.40 p.m., arrive Calgary 12.50 noon the second day; leave Calgary 4.30 p.m., arrive Winnipeg 8.05 a.m. the second day. Standard sleeping cars between Winnipeg and Dauphin, Winnipeg and Calgary; dining car between Winnipeg and Calgary.

Between Regina and Prince Albert, daily night trains 7 and 8 are in operation as follows: Leave Regina 11.50 p.m., arrive Prince Albert 9.45 a.m.; leave Prince Albert 8 p.m., arrive Regina 6.35 a.m. Standard sleeper, Regina and Saskatoon; buffet sleeping car Regina and Prince Albert.

Improved service has been provided between Winnipeg and Vancouver, daily trains operating via G.T.P.R. between Winnipeg and Edmonton, and Canadian National between Edmonton and Vancouver, leaving Winnipeg 10.25 p.m., arriving Vancouver at 9 the third morning; leaving Vancouver 8 p.m., arriving Winnipeg 11 the third morning. Standard and tourist sleeping cars and dining cars are operated between Winnipeg and Vancouver, parlor observation cars between Winnipeg and Edmonton, and compartment library cars between Edmonton and Vancouver. Additional compartment observation library cars, now nearing completion, will be placed in service between Winnipeg and Vancouver.

**Optional Ticket Arrangements.** — The following arrangements have been placed in effect:—C.N. Rys. issue of tickets and other lines issues of tickets good for passage over the C.N.R. are good for passage and will be honored on G.T.R. trains as shown below. G.T.R. issue of tickets and other lines issue of tickets good for passage over the G.T.R. are good for passage and will be honored on C.N.R. trains as shown below. These arrangements apply to all classes of tickets reading between, or valid for passage between or through the points named below:—1. Any two stations on C.N.R. or G.T.R., Toronto to Napanee, inclusive. 2. Toronto and Montreal. 3. Stations named in section 1 and Kingston, Brockville and Montreal. 4. Kingston and Montreal. 5. Ottawa and Montreal. 6. Ottawa and Quebec or Levis. 7. Any two stations, Montreal to St. Rosalie. 8. Any two stations, Chaudier to Levis and Quebec. 9. Any station, Montreal to St. Rosalie, any station Chaudier to Levis and Quebec. 10. Ottawa and Montreal and North Bay, Pembroke and South March. 11. Toronto and Mount Albert, Beaverton, Gamebridge and Brechin. 12. Perth Road and east, and Napanee and west.

Tickets reading via C.N.R. or G.T.R. between Winnipeg and Edmonton, also Winnipeg and Saskatoon, are valid and may, if passengers so desire, be honored for passage on the trains of either line between such points. This arrangement applies to all tickets which are valid between, or to or from, or through the points named above.

The optional ticket arrangements places at the disposal of the public all the train services of the Canadian National-Grand Trunk between the points shown, and in actual practice means that in carrying passengers the two lines are operating on one line.

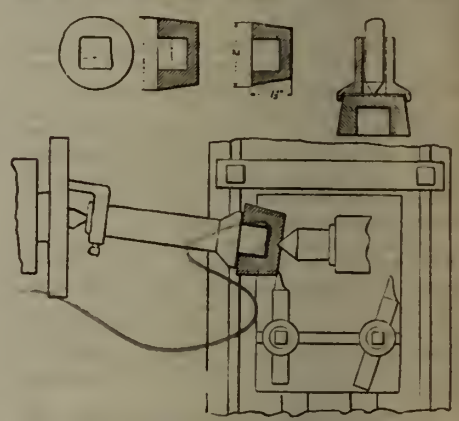
### Grand Trunk Pacific Railway Co-ordination.

Hon. J. D. Reid, Minister of Railways, is reported to have said at Winnipeg, July 16, that on his return to Ottawa the question of joint management for the Canadian National Rys. lines in the west, and the Grand Trunk Pacific Ry. would be taken up, and he is reported to have added: "I shall have the personnel of the board definitely in mind when I return in a few weeks. The board will be along the lines of the one which operates the eastern lines, that is, five railway officials, with a man who has been actively engaged in managing a railway system, as chairman."

## Producing Core-Hole Plugs in a Locomotive Shop.

The accompanying drawing shows a method of attaining rapid production in the machining of locomotive piston core-hole plugs or work of a similar nature, with an ordinary screw cutting lathe. By the use of this method I have found it possible to center, turn, and thread to a standard size an average of one plug every two minutes.

First a quantity of plugs are centered with the centering device shown in the drawing, a heavy punch mark being sufficient for this job, as absolute precision



Quantity Production of Core-Hole Plugs.

is not necessary. Two toolposts are set in position, the first holding a turning tool and the second a threading tool. The turning tool is set about ¼ in. closer to the work than the threading tool, with the tools about three inches apart.

After the first plug has been turned to size, note the position of the cross feed handle which will enable the second and succeeding plugs to be turned to size with one cut and without using the calipers. When the plug has been turned the threading tool is brought into use.

After threading the first one to size, a stop clamp placed on the cross-slide ways will enable the operator to cut all following threads to the correct depth without the use of calipers or gauge.

The end of the driver is squared to fit the cored recess in the plug. The tail center is offset to give the required taper. When the threading tool is in use the turning tool travels in the space forward of the plug.—H. L. Ruark in American Machinist.

**Belgian Rolling Stock Orders.**—Belgium has within the past few months ordered 450 locomotives, including 100 from Belgian manufacturers, 200 from Great Britain, 50 from Canada, and 100 from the United States. Orders for 1,200 steam railway passenger cars and a number of electric train passenger cars have also been given, mostly to Belgian manufacturers.

## Aerial Transportation Notes.

Work is reported to have been started upon the preparation of an area behind the Rockliffe rifle butts at Ottawa for a government aviation field.

A press report states that it is expected that Camp Borden, Ont., will be opened on Aug. 1 as the chief training center of the Canadian Air Force.

The Aeronautical Federation of Canada was formed July 5 at a meeting of representatives of Canadian aero clubs at Winnipeg. It is proposed to hold a general meeting in connection with the new organization at Camp Borden, Ont., in October.

The Canadian Air Board and the Customs, Immigration and Colonization Departments have authorized the Virden Municipality, Man., to use by day only an area of land 800 yards in diameter, in the s.w. ¼ Sec. 15, Tp. 10, Range 26, west 1st Meridian, as a public customs air harbor.

F. W. Peters, General Superintendent, British Columbia District, C.P.R., and H. O. Bell-Irving, both of Vancouver, have been appointed civilian members of the Canadian Air Board's British Columbia advisory committee, the Lieutenant Governor of the province being chairman.

Two flying boats were delivered at Lake St. John, Que., July 19, by the "air route" from Halifax, N.S., to be used for exploration purposes in the region north of Lake St. John. The exploration and survey work, it is stated, is being financed by the Dominion and Quebec governments jointly.

W. Templeton, late Lieutenant Royal Navy, is reported to have been appointed pilot navigator at the government seaplane base, Jericho Beach, B.C. Work is reported to have been started June 12 on clear the site for the erection of the hangars, which were expected to be completed within six weeks thereafter. The personnel at the station will, it is stated, number 25, including 4 pilots and 18 mechanics.

The Canadian Air Board announced recently that flying certificates had been issued as follows,—pilots, commercial, 48; private, 46; engineers, 41; registered craft, 52; harbors, 25; the last named being located as follows:—Vancouver, one, and two projected; Edmonton, two; Winnipeg, two; Toronto, two; Montreal, three; and Hanna, Calgary, Saskatoon, Fiske, Moose Jaw, Virden, Brandon, Sault Ste. Marie, Niagara Falls, Grandmere, Truro and Ottawa, one each.

Bell-Baldwin Hydrodromes Ltd. has been incorporated under the Dominion Companies Act, to manufacture, deal in and let or hire hydroplanes and all other kinds of water craft; to provide hydrodromes, etc., and to carry on other allied business. The capital stock is to consist of 1,000 shares without nominal or par value, provided that the capital employed in the business shall be $5,000 in $5 shares. The office is to be at Baddeck, N.S. The company is to be classed as a private company.

Price Brothers & Co. Ltd., Quebec, Que., has started an aerial service to cover the territories over which the company operates. The chief work of the aerial service will consist at present of photographing with special aerial cameras, the company's timber limits and the various dams, river heads, burnt areas, etc., throughout the territory. It is stated that the machines engaged in the service are two Martinsyde, type A, mark 1 sea planes convertible into land planes, with a climbing power under full load of 1,000 lb., and of 10,000 ft. in 15 minutes, with a maximum speed of 127 an hour.

The Canadian Air Force Association has been incorporated under the Dominion Companies Act with office in Ottawa, but without share capital, to promote the efficiency and advance the interests of the Canadian Air Force and to assume such share of the administration of such force constituted under the provisions of the Air Board Act, 9-10 Geo. V, chap 11, as may be authorized by the Governor in council. The incorporators are:—Hon. H. Guthrie, K.C., Minister of Militia; O. M. Biggar, K.C., Vice Chairman of the Air Board; Major General Sir Willoughby Gwatkin, K.C. M.G., C.B.; Lieut. Col. R. Leckie, D.S.O., Superintendent of Flying Operations; Lieut. Colonel J. S. Scott, M.C., Superintendent of Certificate Branch; E. Deville, LL.D., D.L.S., Surveyor General.

## Freight and Passenger Traffic Notes.

The Association of United States Railway Executives has issued the following traffic data:—From Mar. 21 to June 13 the principal railways moved 8,264,485 carloads of freight, compared with 7,708,927 carloads during the corresponding period in 1919. From Jan. 1 to June 12, the railways carried 39,000,000 tons of coal more than in the same period in 1919.

The Cumberland Ry. & Coal Co. has made some changes in its freight and passenger tariffs, with the approval of the Board of Railway Commissioners, to conform with the tariffs of the Canadian National Rys., with which the company's line connects at Springhill Jct., N.S. The company's freight and passenger rates are now the same as those on the C.N.R. for the same distances.

Canadian National Rys. has put on a new night train between Moncton and Campbellton, N.B., leaving Moncton daily, except Sunday, at 3.20 a.m.; arriving Campbellton, 9.30 a.m.; leaving there 9.50 a.m.; arriving Mont Joli, 2.30 p.m.; Riviere-du-Loup, 4.35 p.m.; Levis, 9.20 p.m.; and Joffre, 9.55 p.m. Eastbound, leaves Joffre daily, except Sunday, at 6.35 a.m.; Levis, 7.20 a.m.; Riviere-du-Loup, 11.50 p.m.; Mont Joli, 3.50 p.m.; Campbellton, 8.35 p.m.; arriving Moncton 2.25 a.m. A standard sleeping car leaves St. John, N.B., daily, except Saturday and Sunday, at 11.45 p.m., connecting at Moncton for Campbellton, and leaves Campbellton daily, except Saturday and Sunday, on train 32, connecting at Moncton with train 9 for St. John.

## Application for Increase in Express Rates.

The Express Traffic Association, acting for the express companies doing business in Canada, has applied to the Board of Railway Commissioners for an increase of 40% in rates. Following is the application, in part:—"Previous to 1911 our board made an exhaustive investigation into the express business in Canada. The investigation resulted in certain concessions to the public by the express companies, increasing the operating expenses of the companies and reducing the express rates. In 1913 a further reduction in practically all the express rates was ordered. The express companies unavailingly protested against these reductions.

"In 1918 an increase was granted. What has actually happened shows that the increase in rates, instead of amounting to 37% east of Sudbury and 23% west of Sudbury, amounts to less than 23% on the whole traffic. The result is that the tolls as increased are not sufficient to take care of the actual operating expenses. The cost of living has gone up 100%, and the operating cost of the express companies has gone up proportionately. The Canadian railways have received freight rates increases of (so called) 15 and 25% respectively. These increases in reality represent a natural advance of about 31%, which, if granted, will entail a further substantial cost to the express companies, and narrow the spread between express and freight rates. The result is the express companies are operating on less than 61% of what the board in 1911 declared to be a fair and reasonable tariff. Reviewing the increased costs, the companies submit that they are entitled to further protection. When granted, this will still leave the totals 15% below parity of those put in force by the board in 1913. The companies claim a loss of $2,800,000 for one individual company, and a continuing loss."

## Railway Rolling Stock Orders and Deliveries.

The Timiskaming & Northern Ontario Ry. is reported to be in the market for about $45,000 worth of general shop tools.

The Anglo-Newfoundland Development Co. has ordered 18 flat cars, 20 tons capacity, from Canadian Car & Foundry Co., for delivery in September.

Six hundred freight cars, part of the railway equipment ordered by the old Russian Government and which have been lying around Vancouver, B.C., for two or three years, are reported to have been sold to United States railways.

National Steel Car Corporation has received an order for 10 standard gauge gondola cars 18 ft. 9¼ in. long, 8 ft. 8 in. wide, 10 tons capacity, double truck, with forged couplers for link and pin, for operation on a southern sugar cane plantation.

Canadian National Rys. have received 17 mail cars from Canadian Car & Foundry Co. out of an order of 20 placed in 1919; 22 medium type Pacific locomotives from Montreal Locomotive Works, out of an order of 32, and 3 switching locomotives from Canadian Locomotive Co., out of 30 ordered this year.

The C.P.R., between June 20 and July 13, ordered 2 vans 29 ft. long, from its Angus shops, Montreal; bought 1 D.T. locomotive crane, 12 tons capacity, and 1 Christie portable coal loading machine; and received 1 Santa Fe locomotive from its Angus shops, and 2 vans from its Winnipeg shops.

The Canadian Car & Foundry Co., between June 16 and July 16, delivered 1 observation car and 5 first class cars to Canadian National Rys.; 45 dryer cars to Citadel Brick Paving & Block Co.; 118 tank cars to Imperial Oil Ltd., all from Montreal, and 326 repaired box cars to Grand Trunk Pacific Ry., from Fort William, Ont.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Grand Trunk Pacific Ry.**—A press report states that work has been started on the construction of the new dock at Prince Rupert, B.C., a description of which was given in Canadian Railway and Marine World for June, pg. 297. Grant Smith & Co. and Magaffin Limited are reported to have the contract. (June, pg. 297.)

**Kettle Valley Ry.**—A press report states that a contract has been let to P. J. Salvus for grading a branch line from South Penticton to the head of Dog Lake, B.C., 2.5 miles. The line will run for a portion of the distance through the Indian reservation. The route is through a level country covered with small brush, and the grading is expected to be completed within two months after a start has been made. This is the beginning of a line authorized to be built under an agreement with the British Columbia Government, which agreement was confirmed at the recent session of the B.C. Legislature. The total length of the projected line is 50 miles from Penticton to the irrigation settlement in the southern Okanagan Valley, near the International Boundary. The second section of the line will run from the southern end of Dog Lake and will extend to the International Boundary at Oroville, Wash. The two sections of the line will be connected by steamboat communication. It was reported at the time the bill confirming the agreement was before the Legislature that 25 miles of the total mileage would be built this year, and the remainder in 1921. (July, pg. 326.)

**Northern Light Rys. Co.**—A press report states that surveys are being made for a line from Swastika through the Kirkland Lake, Beaverhouse Lake, Larder Lake and Boston Creek mining areas to Boston Creek, on the Timiskaming & Northern Ontario Ry. C. E. Pinelle is reported to be in charge of the work. This is the second of the lines proposed to be built by the company.

A meeting of shareholders was called to be held in Toronto July 5, to complete organization of the company, to authorize the issue of bonds for the construction of the Elk Lake-Gowganda line, and for the other projected lines. (July, pg. 386.)

**North West Route Limited.**—The Dominion Parliament has incorporated a company with this title, with office at Winnipeg, to establish a system of railway and steamboat communication between Baker Lake and Great Slave Lake in the unorganized territory lying north of Manitoba, Saskatchewan and Alberta. The projected railway is to start at the westerly end of Baker Lake and to proceed northwesterly to the easterly end of Schultz Lake; a second stretch of railway is to start at the confluence of the Hanbury and Thelon Rivers and to proceed westerly and southwesterly to old Fort Reliance at the eastern end of Great Slave Lake; another line is to start from the confluence of the Hanbury and Thelon rivers and to proceed westerly to the northeasterly end of Artillery Lake and from the southwesterly end of the lake southwesterly to Old Fort Reliance on Great Slave Lake. These lines may be operated by steam, electricity or any other power. The company is also given power to dredge and otherwise improve the navigation of the Thelon River; to operate steam and other vessels on the navigable waters reached, and to build wharves, docks, elevators, etc., along the route of the railway and navigation route. (Mar., 1920, pg. 136.)

**Quebec and Chibougamou Ry. Co.** — A press report states that a contract between the Quebec Government and the Quebec & Chibougamou Ry. Co. for the construction of a belt line round Lake St. John, Que., is ready for signature. The company was incorporated at the last session of the Quebec Legislature to build a railway from Quebec City northerly to Chicoutimi, on the Saguenay River, and thence to Chibougamou Lake, with branch lines. The Legislature voted two land subsidies at its recent session, one for the building of a line from Malbaie to Ha Ha Bay, 75 miles, and the other for a line from Chicoutimi to St. Felicien, to the west of Lake St. John, running through the region situated east and north of Lake St. John, and branch lines, a total of 120 miles. This latter subsidy would apparently cover the line for which a contract is reported to be ready. (Mar., pg. 136, and Quebec Subsidies, Mar., pg. 122.)

## Canadian Pacific Railway Construction, Betterments, Etc.

**Joliette Freight Sheds Burned.**—The freight sheds at Joliette, Que., were destroyed by fire, together with seven cars and a quantity of freight, on July 10, the total loss being estimated at $100,000. The passenger station was saved with difficulty.

**Timiskaming District.**—A press report states that a contract has been entered into between the C.P.R. and the Quebec Government for the construction of a line from near Timiskaming or Kipawa to the Des Quinze River, Que., and that it has been arranged that the line will pass through Ville Marie, instead of running at the foot of the hills near by, thus adding two miles to its proposed length, but bringing it considerable additional territory. Construction work, it is stated, will be started at once.

Under the Interprovincial & James Bay Ry. charter the C.P.R., some years ago, built about 10 miles of line from Kipawa towards the Quinze River, and completed surveys for its extension to the Kipawa River. The Quebec Legislature voted a subsidy of $1,600 for a line from Timiskaming to Kipawa via Ville Marie to the Des Quinze River, 66 miles, and an additional subsidy of $6,400 a mile for the same mileage in the event of the Dominion Parliament not voting a subsidy on the usual terms. H. Roberts, Assistant Engineer, was given charge of a party to complete the survey work on the line. April, pg. 174. See also C.P.R. Construction, June, pg. 291.)

**Levis Siding.**—A press report states that a contract has been let to W. H. Patterson, Belleville, Ont., for rock excavation at Levis, Ont., mileage 150.6 on the lake shore line from Leaside to Smiths Falls, where it is proposed to put in some sidings.

**Hamilton Jct. Interlocking Plant.**—An order has been given for a 48 lever, Saxby & Farmer, improved interlocking and mechanical interlocking machine and mechanical interlocking ground parts, for the reconstruction of the interlocking protection at Hamilton Jct., Ont. The plant, when completed, will have 42 working levers and 6 spare spaces, power operated signals, track circuit detector locking, with approach locking, and annunciators. A special illuminated track diagram will be provided in the tower for the information of the leverman.

**Windsor Yard.**—A press report states that plans for extensive yard improvements at Windsor, Ont., have been submitted to the Board of Railway Commissioners for approval, and that construction will be started as soon as this has been obtained. The improvements, it is stated, consist of a rearrangement of a number of existing tracks, the extension of the track accommodation, and the building of a freight shed to provide for handling 500 freight cars.

**Sarnia, Ont.**—In connection with the proposal made to the C.P.R. recently to build a line from near London to Sarnia, Ont., a press report states that the company's officials have been favorably impressed with the proposal and will probably recommend its adoption. The report also states trat one of the company's engineers has been over the ground following the recent trip of President E. W. Beatty and his party.

**Lanigan Northeasterly Branch.** — A press report states that five townsites are being laid out along the branch line under construction from Lanigan, Sask., northeasterly. The line authorized to be built extends from Lanigan, through Melfort into the Carrot River district, and plans for 60.90 miles have been approved by the Board of Railway Commissioners. A contract for building 50 miles of the line out of Lanigan was let in May, 1919, to Stewart & Welch, Calgary, Alta., but only 5% of the grading had been completed to Dec. 31, 1919. The new townsites are located as follows:—Daphne, n.w. 34-37-18 w. 2nd meridian; Unwin, s.w. 13-35-20 w. 2nd meridian; Romance, s.w. 2-36-19 w. 2nd meridian; Magallen, n.w. 2-39-18 w. 2nd meridian; Naicam, n.w. 2-40-18 w. 2nd meridian. It is stated that Naicam will be the terminus of the branch for the present. (July, pg. 389.)

**Spokane & British Columbia Ry.**—Pursuant to the winding up order, in the matter of the Dominion Permanent Loan Co., the official referee advertised recently for tenders for $1,500,000 of bonds and $10,000 capital stock of the Spokane & British Columbia Ry., these bonds and shares comprising all securities issued by the railway company, whose line runs from Danville, near Grand Forks, B.C., to Republic, Wash., about 36 miles, further particulars of which were given in Canadian Railway and Marine World for June, pg. 103. We are advised that a number of tenders were received, but that none were sufficiently high to warrant acceptance by the liquidator.

**Sir William Van Horne's Estate.**—The Supreme Court of Canada gave judgment recently in the action brought by the British Columbia Government as to the collection of succession duties on the estate of the late Sir William Van Horne. The total estate was valued at $6,000,000, of which $300,000 was in British Columbia, and the B.C. Finance Minister claimed that in fixing the amount of succession duty to be collected in the province he could take into account the total value of the estate. This view has been upheld by the Supreme Court, on a final appeal. This decision, it is said, will govern the settlement of some 20 other estates.

# Mainly About Railway People Throughout Canada.

**William B. Bamford,** whose appointment as District Freight Agent, C.P.R., Nelson, B.C., was announced in our last issue, was born at Belleville, Ont., Sept. 10, 1863, and entered railway service in 1880, with the Credit Valley Ry., which was afterwards taken over by the C.P.R., and has been, to 1886, telegraph operator at various points; 1886 to 1888, agent, Corbetton, Ont.; 1888 to 1892, agent, Elora, Ont.; 1892 to 1902, agent, Peterborough, Ont.; 1902 to 1906, Travelling Freight Agent, Toronto; 1906 to 1910, District Freight Agent, London, Ont.; 1910 to 1916, Division Freight Agent, St. John, N.B.; 1916 to 1920, District Freight Agent, Toronto.

**E. W. Beatty, K.C.,** President, C.P.R., attended the Association of Railway Executives annual meeting at New York, July 16, when, among other matters, the more intensive use of railway equipment, was discussed.

**Sir George Bury** has resigned the Presidency of Whalen Pulp & Paper Mills Co. Ltd., Vancouver, B.C. A press dispatch says he has received "an appointment in an advisory capacity under certain large interests on the Atlantic seaboard."

**W. G. Chace,** Chief Engineer, Greater Winnipeg Water District Commission, which operates a railway between Winnipeg and Shoal Lake, Lake of the Woods, has resigned, and organized Research & Development Ltd., to initiate new industries for Manitoba.

**A. Blake Chown,** who has been appointed General Agent, Passenger Department, Canadian National-Grand Trunk Rys., New York, was born at Belleville, Ont., Aug. 4, 1887, and entered railway service, Apr. 1, 1907, since when he has been, to May, 1909, night ticket clerk, G.T.R., Belleville, Ont.; May 1909, to Mar. 1911, day ticket clerk, G. T.R., Belleville, Ont.; Mar. 1911 to Mar. 1913, Soliciting Passenger Agent, G.T. R., Toronto; Mar. 1913 to Dec. 1918, Travelling Passenger Agent, G.T.R., Pittsburg, Pa.; Dec. 1918 to Mar. 1919, acting General Agent, Passenger Department, G.T.R., New Work.; Mar. 1919 to July 1920, General Agent, Passenger Department, G.T.R., New York.

**Don Matthews Crawford,** who has been appointed General Agent, Canadian National and Grand Trunk Rys., Cleveland, Ohio, was born at South Bend, Ind., May 28, 1886, and entered railway service Sept. 1, 1901, since when he has been, to Mar. 1, 1903, clerk and stenographer, Freight and Passenger Departments, Chicago Great Western Ry., Pittsburg, Pa.; Mar. 1, 1903, to June 1, 1905, similar position, Seaboard Air Line Ry., Pittsburg, Pa.; Oct. 1 to Nov. 5, 1905, stenographer, Freight and Passenger Departments, Pittsburg & Lake Erie Rd., Pittsburg, Pa.; Nov. 5, 1905, to Nov. 1, 1909, stenographer and clerk, G.T.R., Pittsburg, Pa.; Nov. 1, 1909, to Feb. 16, 1914, Travelling Freight Agent, G.T.R., Pittsburg, Pa.; Feb. 16, 1914, to July, 1920, Commercial Agent, G.T.R., Pittsburg, Pa.

**W. R. Devenish,** Superintendent, Canadian National Rys., Moncton, N.B., is spending a month's vacation at Shelburne and other Nova Scotia points.

**Mrs. Dickson,** widow of M. C. Dickson, at one time District Passenger Agent, G.T.R., Toronto, died at Hamilton, Ont., July 14.

**James Dunsmuir,** formerly owner of the Esquimalt & Nanaimo Ry., the Wellington collieries, etc., and formerly Lieutenant Governor of British Columbia, and for some time a director of the C.P.R., who died at Victoria, B.C., June 6, bequeathed his entire estate, of which no estimate is made in the will, to his wife, and the hope is expressed that at her death, she will divide the property among the nine children, consideration being given to about $10,000,000 of Canadian Northern Ry. 3% debentures guaranteed by the Dominion Government, which had been distributed to some of the children prior to his death.

**R. H. Foster,** formerly agent, C.P.R., Fort William, Ont., who died there recently, was buried at Montreal. He had been in C.P.R. service since a boy, and was the son of the late Wm. Foster, a former C.P.R. employe at Montreal.

**Mrs. D. E. Galloway,** wife of the Assistant to the President, Grand Trunk Ry., Montreal, has taken a cottage at Little Metis Beach, Que., for the summer.

**U. E. Gillen,** General Manager, Toronto Terminals Ry., Toronto, has been appointed chairman of the board of conciliation, dealing with the Toronto & Niagara Power Co.'s electrical workers' demands at Toronto and Niagara Falls, Ont.

**Henry Goldmark,** who was engaged by the C.P.R. in connection with the Angus shops construction in Montreal some years ago, is Vice President of the new engineering firm, Goethals, Wells & Co. Inc., which has been established in New York, N.Y., with Major General Goethals as President.

**D. B. Hanna,** President, Canadian National Rys., was on a C.N.R. train which was derailed near Gonor, Man., July 13, it being stated that the derailment was caused by a switch having been tampered with.

**J. H. Hanna,** who has been appointed Secretary of the Board of Trade, Calgary, Alta., was in G.T.R. service for about 30 years before going to Calgary in 1903, resigning at that time as District Freight Agent, Hamiton. Ont. During the construction of the Grand Trunk Pacific Ry. he was engaged in making certain right of way purchases.

**Lieut. Col. Thos. A. Hiam** has been appointed Railway Expert, to the permanent Commission on Communication and Transit, under the League of Nations. He is expected to arrive in Toronto, from Stewart, early in August, and to sail from New York on Aug. 21, and proceed to Geneva. He was in the Canadian Northern Ry. service for some years prior to the war, and during the latter part of the time as private secretary to Sir Donald Mann. He went overseas with the Canadian Buffs in the autumn of 1916 as a lieutenant, and was at Witley Camp, Eng., for nearly a year, while the Buffs formed part of the 5th Canadian Division, and during which time he was promoted to captain and made assistant quartermaster. On the Buffs being broken up, for reinforcing purposes, he transferred to the Imperial Railway Troops, going to France in Feb. 1918, at captain, and was engaged for some time in railway operating work. He returned to England in Oct., 1918, on leave, and was sent almost immediately to Salonica, as railway transportation officer, and after being there a very short time, was transferred to Constantinople, promoted to major and made Deputy Assistant Director of Railway Transport, which department had charge of the Orient Ry. in European Turkey (Compagnie d'Exploitation des Chemins de Fer Orientaux) and also the Bagdad Line, which commences on the Bosphorus and extends to Bagdad, with a break from Nissibin to Samara, which is still under construction. This line is operated by the Societe Imperiale Ottomane de Chemin de Fer de Baghdad. From Constantinople he was transferred to Haidar Pasha as Assistant Director of Railways, and was promoted to lieutenant colonel. On his return to Canada at the close of the war he was appointed Vice President, Canadian North Eastern Ry. Co., and Vice President, Pacific Coast Exploration Co., at Stewart, B.C., of both of which companies Sir Donald Mann is President. It is said that there will be a conference in January to discuss the freedom of communications and transit, to which Canada and other members of the League of Nations are expected to send delegates.

**Lady Hickson,** widow of Sir Joseph Hickson, at one time General Manager G.T.R., is spending the summer at Murray Bay, Que.

**E. J. Hilliard,** who has been appointed Division Freight Agent, Canadian National Rys.-Grand Trunk Ry., Ottawa, Ont., was born at Montreal, Apr. 14, 1870, and entered G.T.R. service in 1886, since when he has been consecutively, to June, 1904, clerk, Passenger Department; in Chief Accountant's office; stenographer, General Manager's office and Division Freight Agent's office; Contracting Freight Agent, Montreal; Contracting Freight Agent, New York; Travelling Freight Agent, Montreal; chief clerk, Division Freight Agent's office, Montreal; Travelling Freight Agent, Moncton, N.B.; June, 1904, to June, 1919, Commercial Agent, Buffalo, N.Y.; June, 1919, to June, 1920, Division Freight Agent, G.T.R., Ottawa, Ont.

**Charles Ketchum Howard,** who has been appointed General Tourist Agent, Canadian National Rys., Toronto, was born at St. Andrews, N.B., Aug. 28, 1877, and entered railway service April, 1893, since when he has been, to 1900, operator and agent at various points, Atlantic Division, C.P.R.; 1900 to 1901, agent, C.P. R., Brownville Jct., Me.; 1901 to 1906, agent, C.P.R., McAdam Jct., N.B.; 1906 to 1910, agent, C.P.R., Fredericton, N.B.; 1910 to 1911, Superintendent, Aroostook Valley Rd., Presque Isle, Me.; 1911 to 1912, Travelling Freight Agent, C.P.R., St. John, N.B.; 1912 to 1915, Right af Way Agent, St. John and Quebec Ry., Fredericton, N.B.; 1915 to Mar., 1916, agent, Canadian Government Railways, Woodstock, N.B.; Mar., 1916, to Sept. 1, 1917, Commercial Agent, Canadian Government Railways, Boston, Mass.; Sept. 1, 1917, to July 1, 1920, General Agent, Traffic Department, Canadian Government Rys., latterly Canadian National Rys., Boston, Mass.

**H. G. Kelley,** President, G.T.R. and Grand Trunk Pacific Ry., attended the Association of Railway Executives annual meeting in New York in the early part of July.

**E. R. Lenoir,** a freight claims adjuster on the C.P.R., died suddenly at his home at Montreal July 17, following paralysis.

He was 61 years old, and had been in railway service for 47 years, and with the C.P.R. from its inception. One son is in the Stores Department, Angus shops, C.P.R., and a daughter is wife of L. Brosseau, District Engineer, Canadian National Rys., Quebec, Que.

**W. Marchbank**, formerly of the Export Department, C.P.R., Montreal, who retired on superannuation in the spring, died at Montreal recently, aged 70, after a few days illness from pneumonia.

**Sapper J. L. B. Murdock**, son of Jas. Murdock, Vice President Brotherhood of Railroad Trainmen, and until recently a member of the Dominion Board of Commerce, died in Toronto July 24, aged 22.

**Lt. Col. R. L. Nelles**, formerly Local Freight Agent, G.T.R., Toronto, now on the pension list, was entertained at dinner, by Freemasons recently, at Caledonia, Ont., and made an honorary member of St. Andrew's Lodge, which he joined 50 years ago.

**H. E. W. Nicholson**, for 43 years station agent on the G.T.R., during the last 30 years of which he was at Kingston Jct., Ont., died there recently. He was a brother of Capt. C. H. Nicholson, Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.

**M. T. Pearson**, Travelling Passenger Agent, C.P.R., St. John, N.B., died at Houlton, Me., June 29, following an operation for appendicitis.

**Hon. J. D. Reid**, Minister of Railways and Canals, which position was vacated by Sir Robert Borden's resignation of the Premiership, was re-appointed in Hon. Arthur Meighen's administration, and sworn in at Ottawa July 13. He left the same day for the Pacific coast, to look over the Canadian National and Grand Trunk Pacific Railways.

**L. J. Rouleau**, who has been appointed Commercial Agent, Canadian National and Grand Trunk Rys., Sherbrooke, Que., was born at Montreal, Jan. 6, 1879, and entered G.T.R. service, Apr. 1, 1899, since when he has been, to Mar., 1903, clerk and timekeeper, Local Freight Department, Montreal; Mar. 1903, to Nov. 1905, claims investigator, Freight Claims Department, Montreal; Nov. 1905, to Apr. 1907, rate clerk, Division Freight Office, Montreal; Apr. 1907, to Apr. 1909, Soliciting Freight Agent, Montreal; Apr. 1909 to Dec. 30, 1916, Travelling Freight Agent, G.T.R., and Agent, National Despatch-Great Eastern Line, Montreal; Dec. 30, 1916, to July, 1920, Commercial Agent, G.T.R., Quebec, Que.

**H. R. Safford**, at one time Chief Engineer, Grand Trunk Ry., and who, since the return of United States railways to corporate control, has been Assistant to President, Chicago, Burlington & Quincy Rd., at Chicago, has been given the degree of Doctor of Engineering by Purdue University.

**H. C. Taylor**, whose appointment as Superintendent of Car Service, Eastern Lines, C.P.R., Montreal, was announced in our last issue, was born at Wingham, Ont., Nov. 5, 1887, and entered railway service in 1905, since when he has been, to 1906, operator, G.T.R.; 1906 to 1908, agent and operator, Timiskaming & Northern Ontario Ry.; 1908 to 1910, agent and operator, Lake Superior Division, C.P.R.; 1910 to 1917, dispatcher, Lake Superior Division, C.P.R.; Feb., 1917, to Nov., 1918, night chief dispatcher, and chief dispatcher, C.P.R., Smiths Falls, Ont.; Nov., 1918, to May, 1920, Car Service Agent, C.P.R., Toronto.

**George Mitchell Thomas**, who has been appointed Commercial Agent, Canadian National and Grand Trunk Rys., Windsor, Ont., was born at Dundas, Ont., Apr. 21, 1876, and entered transportation service in Aug., 1898, since when he has been, to 1903, in office, chief clerk, on the road, and Soliciting Agent, for Beaver Line Steamships, afterwards owned by Elder, Dempster & Co., and in 1903, taken over by the C.P.R. as the nucleus of its Atlantic steamship service; Apr., 1903, to Feb. 1, 1919, travelling Freight Agent, Canadian Government Rys., all at Toronto; Feb. 1, 1919, to July, 1920, District Freight Agent, Canadian National Rys., Hamilton, Ont.

**Guy Tombs**, Traffic Manager, Canadian Export Paper Co., Montreal, formerly Assistant Freight Traffic Manager, Canadian National Rys. there, Mrs. Tombs and Laurence Tombs, left Montreal at the end of June, to spend July at the Pacific Coast.

**F. W. Wanklyn**, son of F. L. Wanklyn, General Executive Assistant, C.P.R., Montreal, was accidentally shot at Banff, Alta., July 8, while examining a gun. He was removed to a Calgary hospital, where an operation was performed, and he is reported to be progressing satisfactorily. His father left Montreal immediately on being notified of the accident, to be with him.

**Robert James Scott Weatherston**, who has been appointed Division Freight Agent, Canadian National Rys.-Grand Trunk Ry., Hamilton, Ont., was born at St. Thomas, Ont., Jan. 27, 1878, and entered G.T.R. service July 4, 1893, since when he has been, to Dec. 31, 1901, clerk in Transportation Department, Hamilton, Ont.; Jan. 1 to July 22, 1902, clerk in Traffic Department, Hamilton, Ont.; July 23, 1902, to May 10, 1903, Soliciting Freight Agent, Hamilton, Ont.; May 11, 1903, to June 17, 1906, Soliciting Freight Agent, Toronto; June 18, 1906, to May 31, 1907, Travelling Freight Agent, Ottawa, Ont.; June 1, 1907, to Oct. 31, 1911, chief clerk to Division Freight Agent, Hamilton, Ont.; Nov. 1, 1911, to Jan. 31, 1919, Division Freight Agent, Stratford, Ont.; Jan. 31 to June, 1919, Division Freight Agent, Ottawa, Ont.; June, 1919, to June, 1920, Division Freight Agent, G.T.R., Hamilton, Ont.

## Edward N. Hurley on Business Papers.

Edward N. Hurley, President, Hurley Manufacturing Co., Chicago, founder of the Standard Pneumatic Tool Co., now the Independent Pneumatic Tool Co., Chicago, formerly Chairman of the United States Federal Trade Commission, and Chairman of the U.S. Shipping Board, in addressing the Associated Advertising Clubs of the World at Indianapolis, Ind., recently, said:—"I am fearful that our manufacturers, merchants, and advertising men do not appreciate the trade publications, which are doing so much from a scientific, as well as a practical, standpoint in stabilizing conditions and working out the many problems existing in their respective fields. When I was Chairman of the Federal Trade Commission I made it a point to have the principal trade papers in the United States sent to me regularly. These were read, not only my me, but by the entire staff, so that we might have a finger on the pulse of the country's industry. Advertising agencies placing national and international advertising could well insist on every man in their employ reading the trade journals of the industries of their clients, so that they may keep themselves currently informed on the conditions in the businesses for which they are writing copy. I believe in the business journals. I have been closely associated with the work of many and have made a study of them, and I am firmly convinced of the editorial strength and value of many of these publications."

## Railway Department's Supplementary Estimates.

The further supplementary estimates for the year ending Mar. 31, 1921, passed at the Dominion Parliament's recent session, contain the following items:—

**Chargeable to Capital.**

| | |
|---|---|
| Canadian Government Railways—Construction and betterments — Additional amount required | $290,430 |
| To provide for the purchase, at prices not exceeding the amounts herein specified, of the fellowing railways (the debts of each railway to the Canadian Government Rys. to be cancelled): interest on the purchase price of each to be payable at the rate of 5% per annum from the date of taking possession to the date of transfer of title: (Such of the said railways as are within the jurisdiction of the Parliament of Canada are hereby authorized to sell their respective assets and undertakings accordingly): | |
| York & Carleton Ry., $18,000, Revote | $ 4,500 |
| St. Martins Ry., $65,000, Revote | 16,250 |
| Moncton & Buctouche Ry., $70,000, Revote | 70,000 |
| Elgin & Havelock Ry., $30,000, Revote | 30,000 |
| Salisbury & Albert Ry., $75,000, Revote | 75,000 |
| Caraquet & Gulf Shore Ry., $200,000, Revote | 200,000 |
| Cape Breton Ry., $100,000, Revote | 100,000 |
| Interest estimated, from date of taking possession to March 31, 1921, not exceeding (including revote $34,000) | 58,000 |
| | $553,750 |
| To provide for the purchase of the Lotbiniere & Megantic Ry. under authority of Chapter 22, Statutes of Canada, 1916, together with interest at 5% from April 1, 1920 | $336,875 |
| To pay claims for right of way, Revote (1919-1920) | 50,000 |

**Chargeable to Income.**

| | |
|---|---|
| Canadian Government Railways—To provide for payment of expenses in connection with acquisition of the Grand Trunk and associated railway systems, additional amount required | $400,000 |
| Governor General's cars, attendance, repairs and alterations, additional required | $12,000 |

Loan not exceeding $25,000,000 to be made to the Grand Trunk Ry. Co. of Canada, or made in part to any company comprised in the G.T.R. System, to be used for any or all of the following purposes in connection with such companies or any of them, viz., in meeting expenditures made, or indebtedness incurred or payable in respect of deficits in operating expenses, interest on securities, maturing loans, construction, equipment, renewals and betterments; such loan or loans to be secured by mortgages approved by the Governor in council in favor of the King on the undertaking of each company participating therein to the extent of such participation, and in each case to be repayable on demand with interest at 6%, per annum, payable half yearly, or the loan or any part of it may be made to the managing committee of the G.T.R. System in accordance with the provisions of clause 4 of the agreement hereinafter mentioned. And for the purpose of retiring maturing secured loans or other funded indebtedness, and interest thereon of any such company or companies, which loans or indebtedness were in existence on or before the date of the agreement between the King and the G.T.R. Co. of Canada, viz., Mar. 8, 1920, the Minister of Finance instead of applying toward the retirement thereof portions of the loan above authorized, may, with the approval of the Governor in council, guarantee the principal and interest of securities of the G.T.R. Co. of Canada or of any such company or companies in such form and on such terms as the Governor in council may determine. $25,000,000

**Chargeable to Collection of Revenue.**

| | |
|---|---|
| Canadian Government Railways — To pay deficit of working expenditure for year ended Mar. 31, 1920, authority being hereby given to apply toward payment of the total amount of the said working expenditure the amount of the receipts and revenues for the said year; additional amount required | $1,000,000 |

# The Board of Railway Commissioners Empowered to deal with Coal Situation.

The Minister of Railways, Hon. J. D. Reid, and the Minister of Labor, Hon. G. D. Robertson, made the following report June 28:—"The undersigned, having been delegated by the Governor in council to give special attention to the coal situation and alleged shortage in coal supply, have the honor to report that: From Jan. 1 to June 1, 1920, the importations of both anthracite and bituminous coal from the United States exceeded the quantity received during the same period in 1919, but, because of the reserves being low, was scarcely sufficient to supply the normal requirements. Since April 15, 1920, and particularly June 1, receipts of coal have been very irregular and unsatisfactory.

"Ontario and Quebec are wholly dependent upon outside sources for their supply of coal. Ontario alone requires 3,500,000 tons of anthracite a year, or approximately 64,500 cars, which means an average shipment of about 200 cars a day for each day in the year. Since April 1 we were short on our daily receipts 125 cars a day. Ontario requires 11,000,000 tons of bituminous coal annually, equivalent to 220,000 cars of 50 tons each, or a daily shipment of 600 cars. From April 1 to June 15, 28,930 cars, or 380 cars a day were received, leaving a shortage in daily receipts of bituminous coal of 220 cars a day. The situation in Quebec is much similar, though accurate figures are not at the moment available.

"Our investigations clearly indicate a most serious situation so far as transportation in the United States is concerned, inadequate car supply and strikes of railway employes largely contributing to the serious congestion. Industries in the U.S. are, in many instances, curtailing their output or closing down for lack of fuel, and the government of that country has placed the control of the distribution of coal in the hands of the Interstate Commerce Commission, who have, we are informed, made three orders which have a bearing on the situation here, i.s., (1) Embargoed the exportation of coal from the Atlantic ports to outside countries; (2) Fixed priorities; (3) Are permitting only such cars to come to Canada as they are assured will be unloaded within 24 hours from the time they are placed, and, further, that the cars will be returned direct for re-loading. It is further apparent that this pooling arrangement and distribution through the commission in order of priority is having the effect of sending many Canadian coal cars to other destinations, rendering the car situation still more difficult.

"It is to be further observed that there were exported from Canada, between Jan. 1 and June 1, 1920, approximately 160,000 tons of coal from Nova Scotia to European ports, principally Holland and France. Prior to the war approximately 2,000,000 tons a year were brought from the Nova Scotia fields up the St. Lawrence, principally to Montreal, which supply has been almost entirely cut off. In view of the United States having embargoed the exported coal to foreign countries, because of the serious shortage at home, it will be difficult for Canada to consistently contend for increased supply from the U.S. unless an embargo is also placed upon the exportation of Canadian coal overseas.

"The provincial fuel commissioners find their task rendered more difficult as a result of the order in council 3004, of Dec. 1918, becoming inoperative. In view of all the foregoing facts the undersigned recommend that the fuel control such as existed under order in council 3004 should again be made effective and that a fuel controller, or some board with the necessary power, should be established, with a view of making an agreement with the Interstate Commerce Commission of the U.S. to ensure a permanent and steady delivery such as will meet the Canadian requirement as far as is reasonably consistent, and to enable the provincial fuel commissioners to effectively direct and control distribution equitably."

Acting on the above recommendations, Sir Robert Borden introduced a bill in the House of Commons, which was amended, and finally passed as follows:

1. The Railway Act, 1919, chapter 68 of the statutes of 1919, is amended by inserting the following section as section 71a, immediately after section 71 thereof:—

"71a. (1) The Board shall have power to do and authorize such acts and things and to make from time to time such orders and regulations as the Board, by reason of real or apprehended scarcity of coal or other fuel supplies in Canada, may deem necessary or advisable for the provision of such supplies and for the distribution, control and disposition thereof.

"(2) Without restricting the generality of the foregoing terms, it is declared that the powers hereinbefore conferred upon the Board shall extend to the trading in and to the exportation, importation, production and manufacture of coal and other fuel supplies.

"(3) All orders and regulations made under this section by the Board shall have the force of law, and may be varied, extended, or revoked by any subsequent order or regulation; but if any order or regulation is varied, extended, or revoked, neither the previous operation thereof nor anything duly done thereunder, shall be affected thereby, nor shall any right, privilege, obligation, or liability acquired accruing, or incurred thereunder be affected by such variation, extension, or revocation.

"(4) This section shall continue in force until the last day of the next succeeding session of Parliament and no longer."

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**Protection of Maintenance of Way Employes.**—The Railway Association of Canada has been giving consideration to the possibility of providing further protection for maintenance of way department employes, against accidents resulting from being struck by trains, and has recommended to member lines that the following instructions be issued to locomotive crews:—"Engineers on all trains shall sound whistle signal 14(L) when approaching curves where view of track is obscured."

**Victoria Bridge, Montreal.**—The sixtieth anniversary of the completion of the G.T.R. Victoria bridge over the St. Lawrence River at Montreal will occur Aug. 25. The original tubular bridge was opened for traffic by King Edward VII., then Prince of Wales, Aug. 25, 1860, and this was replaced by the present Diamond Jubilee bridge, which was completed in 1898.

## The Great Northern Railway's Canadian Lines.

The annual report of the Great Northern Ry. Co. for the year ended Dec. 31, 1919, contains the following information regarding its Canadian lines:—"The company's investment in Canadian companies, on account of advances made to pay for property, construction, additions and betterments, has been increased during the year as follows:—

| | |
|---|---|
| Manitoba Great Northern Ry. | $1,486.10 |
| Brandon, Saskatchewan & Hudson's Bay Ry. | 894.09 |
| Nelson & Fort Sheppard Ry. | 2,370.79 |
| Red Mountain Ry. | Credit 72.06 |
| Crow's Nest Southern Ry. | 5,991.34 |
| Total . . | $10,670.26" |

The President's report as to betterments during 1919 states that a half interlocking plant, with 6 levers, was installed at the crossing of the British Columbia Electric Ry. at Georgia St., Vancouver, B.C. The amount actually expended during the year on additions to Canadian lines was $116,240.02 (credit), and the amount expended in betterments on the same lines was $66,443.15. It was explained that the credit to additions for the Canadian lines occasioned by the removal of 7.8 miles of track of the New Westminster & Southern Ry.

## Intensive Use of Railway Equipment.

At a meeting of the Association of Railway Executive in New York, July 16, a resolution was adopted, calling upon the member companies to devote their engineering energies to the more intensive use of existing equipment. The following programme was outlined:—

An average daily minimum movement of freight cars of not less than 30 miles a day. (The average daily movement now is 23 9-10 miles and the highest ever attained by the railways was 26 miles a day during the war period from Apr. to Dec., 1917).

An average loading of 30 tons a car.

Reduction of bad order cars to a maximum of 4% on the total owned.

An early and substantial reduction in the number of locomotives now unfit for service, and,

Use of more effective efforts to bring about the return of cars to the owner roads.

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**Kettle River Valley Ry. Construction Financing.**—An action has been brought in an Ontario court in the name of the Dominion Permanent Loan Co. against the Columbia & Western Ry. Co., the Kettle Valley Ry. Co., and the C.P.R. Co., to recover $200,328 and interest under the terms of an agreement dated May 26, 1910, or in the alternative the like sum for breach of contract. It is claimed that under the agreement the loan company agreed to sell to the Columbia & Western Ry. 40% of the capital stock of the Kettle River Valley Ry. (now the Kettle Valley Ry. and a C.P.R. undertaking) and the defendant companies undertook to pay to the loan company 40% of the subsidies received from the Dominion Government for a railway from Midway to Merrit, B.C. It is further alleged that the defendants contracted to pay the loan company 40% of a British Columbia Government grant in respect of the construction of 150 miles of line. It is admitted that the defendants have paid various sums, but it is alleged by the loan company's liquidator that the amount claimed is still due.

# The Express Service.

By T. E. McDonnell, Vice President and General Manager, Dominion Express Co.

I received a call recently from a real old time expressman, and we had a real old fashioned visit about old times and old timers, and about new times, and, as he put it, "clock timers". At the end of this visit I had a subject to write something on and here it is:—Old time expressmen, those who did the work a quarter of a century ago, and there are many of them still active in the business, are frequently heard discussing the relative efficiency and loyalty of the rank and file today, as compared with earlier times.

The old timers have in mind the days when hours were long and pay was short; when there was overtime a plenty, but when nobody thought of pay for it; when the "split shift" was popular and some went to work several times a day to earn a day's pay; the days when there were no vacations, no workmen's compensation; when everybody put in some time every Sunday; when everybody "checked his freight"; when the loss and damage account was so small that a magnifying glass was needed to find it; when the despicable pilferer was so scarce that the finding of one was a sensation in the business; when a serious street accident was considered a disgrace, and yet in those days everybody was fairly happy and contented and anxious to hold his job until promoted. Each man took his job seriously, and intended to make his future in the business. He wasn't working on an hourly basis, and looking for his pay every night. In those days it did not require the services of an army of clerks to do nothing more than keep record of the changing employes. Every man knew the "boss" and the "boss" called almost everybody by his first name. The men were so well satisfied that when a vacancy occurred they always had some friend who was anxious to get the job.

As the old timer sees things today, with the shorter hours, higher pay, overtime pay and all the other inducements, he wonders at the change, and at what he considers the indifference and the lack of pride of service which was so noticeable in the older times. He wonders all the more, because never before in the history of the business was it so easy for a man to make good, and land one of the better jobs, because he has so little competition. The old timers who make these observations are not by any means "on the shelf," but are actively on the job, and pretty well up to date on all things affecting the business. They are able to do, and are doing, every day a good honest day's work, not limited by any number of hours, because they like their jobs and want to hold them. It may be that is the whole point of difference, liking one's job.

It has been my privilege to keep in close touch with express matters in both Canada and the United States, and at the risk which always attends the making of comparisons, I venture the opinion that in the express service in Canada today, there is more of the old time efficiency and loyalty than is apparent elsewhere, and constant improvement in that direction is quite noticeable. There is "pride of service" and we "like our jobs". The labor turnover (the number of changes in the various positions) since the close of the war has been small by comparison, and is improving. It begins to look as if the old timer in Canada would soon have little to complain of. If this observation be correctly made, and if in Canada expressmen are getting back to first principles more rapidly than their neighbors, the reason may be found in the fact that in Canada the status of the express service was more clearly defined and more generally accepted during the war; that it held a larger percentage of its experienced staff, who by their skill and good example have shown the newcomers what real expressmen stand for; they were sufficiently strong in numbers and in character to compel the newcomer to adopt their standards. With the stabilizing of express matters in the United States, surely the real expressmen are numerous enough and strong enough to win over the newcomers who are worth making into expressmen.

The old timers feel that expressmen are a fraternity with high standards and high ideals; that the business, though not ancient, is an honorable one, and desirable for the welfare of the community; that anything tending to discredit the business also tends to discredit the staff. That is why they are concerned about the attitude of the newcomer and that is why they will convince the newcomer he must become a real expressman. When the old timer hears the excuse offered for unthinking men, that they are easily led, he replies that it should then be easy to lead them in the right direction, and it's up to the old timers to do the leading. There is some good in the worst of us, it's up to the old timers to locate the good and develop it.

The expressmen of Canada are staunch members of the express fraternity, they have the welfare of all expressmen at heart and are doing their best to get all expressmen thinking and acting along right lines.

## The Edmonton, Dunvegan & British Columbia Ry.'s Future.

An Edmonton, Alta., press dispatch of July 20 stated that J. D. McArthur, President E., D. & B. C. R., and its allied companies—the Central Canada Ry., and the Alberta & Great Waterways Ry.—had advised the local management of the lines that an operating agreement had been arranged with the C.P.R. and that the agreement would go into effect at oonce. A Victoria, B.C., press dispatch of July 21 quoted D. C. Coleman, Vice President Western Lines, C.P.R., as stating that the C.P.R. had made an agreement to operate the system for a term of years on account of the owners, and that full information as to the agreement would probably be given out by the Premier of Alberta, on his return to Edmonton from Montreal, where he had been in connection with the negotiations.

The three McArthur lines are the Edmonton, Dunvegan & British Columbia Ry., running from Edmonton to Spirit River, 360.8 miles, with a branch from Spirit River to Grande Prairie, 54.8 mlies; the Central Canada Ry., from McLennan to Peace River, 49.8 miles; and the Alberta & Great Waterways Ry., in regular operation from Carbondale to Lac la Biche, 131.4 miles, and practically completed to McMurray, a further distance of about 160 miles.

An Edmonton press dispatch says that Premier Stewart of Saskatchewan, on returning there on July 26 from Montreal, stated that the C.P.R. will operate the E., D. & B. C. Ry. for five years, with an option to buy it at any time during that period. The Saskatchewan Legislature, at its last session, appropriated $1,000,000 for improving the line, which will be done by the C.P.R., subject to the Saskatchewan Minister of Railways' approval. The dispatch also states that J. D. McArthur and his associates have withdrawn from the directorate and that D. C. Coleman, Vice President, Western Lines, C.P.R., has been elected President, and C. Murphy, General Manager, Western Lines, C.P.R., Vice President, other new directors being Major W. M. Kirkpatrick, M.C., Assistant Freight Traffic Manager, Western Lines, C.P.R., Winnipeg; G. A. Walker, Calgary, and Premier Stewart, the latter representing the province. It is also stated that Mr. Coleman announced the appointment of J. A. MacGregor, heretofore Superintendent, Edmonton Division, C.P.R., as Manager E., D. & B. C. Ry., with office at Edmonton.

## Two Per Cent. Sales Tax Applied to Transportation Companies.

The Act to amend the Special War Revenue Act, 1915, passed at the Dominion Parliament's recent session, provides in sec 2, sub.sec. BBB as follows:—"In addition to the present duty of excise and customs, a tax of 1% shall be imposed, levied and collected on sales and deliveries by manufacturers and wholesalers, or jobbers, and on the duly paid value of importations, but in respect of sales by manufacturers to retailers or consumers, or on importations by retailers or consumers, the tax payable shall be 2%."

A large deputation from Montreal waited on the Finance Minister in Ottawa to protest against the 2% tax being applied to purchases made by public utility companies, Senator Beaubien and F. L. Wanklyn, General Executive Assistant C.P.R., being the principal speakers, but they were unsuccessful, and the following ruling was given by the Inland Revenue Department:—

"Sales tax of 2% applicable on sales by manufacturers to railways, power companies, municipalities, public utilities and steamship lines. Sales tax of 1% applicable on sales by wholesaler to such corporations. Sales tax not applicable as respects material for construction of ships licensed to engage in Canadian coasting trade."

The Inland Revenue Department holds that the companies referred to are consumers.

C.P.R. Information Bureaus.—The C. P.R. Colonization and Development Department has established three information bureaus at London, Eng., New York, N.Y., and Chicago, Ill., with headquarters at Montreal. Well equipped reference libraries, containing the fullest information about Canada, are attached to each of the bureaus, and are kept supplied with the latest information regarding new developments or opportunities, through the main reference library at the department's headquarters at Montreal and also through the medium of a C.P.R. news service, which has been obtained through the co-operation of the various branches of the company's service. The London branch is in charge of Major E. A. Moore, Manager, Colonization and Development Department organization overseas.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Merchant Marine Ltd.**—W. B. FINGLASS has been appointed Assistant Marine Superintendent, Vancouver, B.C.

B. C. KEELEY has been appointed General Agent, Vancouver, B.C.

T. LOUDEN has been appointed Assistant Superintendent Engineer, Vancouver, B.C.

**Canadian National Rys.**—C. BOVARD, Terminal Agent, is acting as Assistant Superintendent, Moncton, N.B., while W. A. Fitch is acting as Superintendent.

S. C. COATES, who resigned as City Ticket Agent, Toronto, June 30, has entered C.P.R. service as a sleeping car conductor.

GEO. COLLINS, Special Representative, who has also been acting as Division Freight Agent at Ottawa for some time, now has his office at Trenton, Ont., the position of Division Freight Agent at Ottawa having been abolished.

W. A. FITCH, Assistant Superintendent, is acting as Superintendent, Moncton, N.B., during the absence of W. R. Devenish, on holidays.

H. S. HEAD has been appointed Foreign Freight Agent, New York, U.Y. Office, Woolworth, Bldg.

C. K. HOWARD, heretofore General Agent, Traffic Department, Boston, Mass., has been appointed General Tourist Agent. Office, Toronto.

S. E. LEGER, heretofore City Freight Agent, Montreal, has been assigned to special duties there.

M. McCARRON, heretofore chief dispatcher, Newcastle, N.B., has been appointed chief dispatcher, Moncton, N.B., vice B. S. Ward, deceased.

T. S. TOZER, heretofore dispatcher, has been appointed chief dispatcher, Newcastle, N.B., vice M. McCarron, transferred.

**Canadian National-Grand Trunk Rys.** J. O. ADAMS, General Eastern Freight Agent, G.T.R., New York, N.Y., will also act in the same capacity for C.N.R., vice F. A. Young, General Agent, C.N.R., transferred.

W. J. BURR, General Agent, Passenger Department, G.T.R., Pittsburg, Pa., will also act in the same capacity for C. N.R., vice F. G. Wood, General Agent, C.N.R., transferred.

H. A. CARSON, City Freight Agent, G.T.R., Montreal, will also act in the same capacity for C.N.R., vice S. E. Leger, promoted.

A. B. CHOWN, General Agent, Passenger Department, G.T.R., New York, N.Y., will also act in the same capacity for C.N.R., vice F. A. Young, General Freight Agent, C.N.R., transferred.

D. M. CRAWFORD, heretofore Commercial Agent, G.T.R., Pittsburg, Pa., has been appointed General Agent, C.N. R. and G.T.R., Cleveland, Ohio.

W. R. EASTMAN, heretofore General Agent, Passenger Department, G.T. R., Boston, Mass., will act in the same capacity for C.N.R., vice C. K. Howard, General Agent, C.N.R., promoted.

W. K. EVANS, Commercial Agent, G. T.R., Cincinnati, Ohio, will also act in the same capacity for C.N.R.

I. W. GANTT, Assistant General Freight Agent, G.T.R., Buffalo, N.Y., will also act in the same capacity for C. N.R., with supervision of traffic through the Niagara frontier and also of traffic under the jurisdiction of the freight offices at New York, N.Y., Philadelphia, Pa., Buffalo, N.Y., Pittsburg, Pa., Toledo, Cleveland and Cincinnati, Ohio.

A. H. GOW, heretofore in Division Freight Agent's office, G.T.R., Ottawa, Ont., has been appointed City Freight Agent, C.N.R. and G.T.R. there.

C. J. HAIGH, Commercial Agent, G. T.R., Philadelphia, Pa., will also act in the same capacity for C.N.R.

E. J. HILLIARD, Division Freight Agent, G.T.R., Ottawa, Ont., will also act in the same capacity for C.N.R. with territory east of North Bay to Hawkesbury, Ont., also Kingston-Harrowsmith, Ont., and east. The position of acting Division Freight Agent at Ottawa, held by Geo. Collins, is abolished.

E. LABREQUE, City Freight Agent, C.N.R., Quebec, Que., will also act in the same capacity for the G.T.R.

G. A. McGUIRE, Commercial Agent, G.T.R., Buffalo, N.Y., will also act in the same capacity for C.N.R.

F. P. NELSON, heretofore in Division Freight Agent's office, G.T.R., Hamilton, Ont., has been appointed City Freight Agent, C.N.R. and G.T.R., there.

C. J. PIERCE, General Agent, G.T.R., Boston, Mass., will also act in the same capacity for C.N.R. in New England territory, vice C. K. Howard, General Agent, C.N.R., transferred.

L. J. ROULEAU, heretofore Commercial Agent, G.T.R., Quebec, Que., has been appointed Commercial Agent, C.N. R. and G.T.R., Sherbrooke, Que.

G. M. THOMAS, heretofore Division Freight Agent, C.N.R., Hamilton, Ont., has been appointed Commercial Agent, C.N.R. and G.T.R., Windsor, Ont.

S. G. WAGSTAFF, Commercial Agent, G.T.R., Toledo, Ohio, will also act in the same capacity for C.N.R.

R. J. S. WEATHERSTON, Division Freight Agent, G.T.R., Hamilton, Ont., will also act in the same capacity for C.N.R., vice G. M. Thomas, District Freight Agent, G.T.R., transferred.

F. G. WOOD, heretofore General Agent, C.N.R., Pittsburg, Pa., has been appointed General Agent, Freight Department, C.N.R. and G.T.R., there.

**Canadian Pacific Ocean Services Ltd.**—Major D. DRUMMOND, heretofore secretary to General Manager, Atlantic Lines, London, Eng., has been appointed General Freight Agent, Liverpool, Eng., vice A. H. Allan, Freight Traffic Manager, resigned to enter another company's service.

**Canadian Pacific Ry.**—J. S. ALLEN, heretofore Master Mechanic, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Master Mechanic, Schreiber Division, Algoma District, ivce E. Freeman, transferred. Office, Schreiber, Ont.

G. M. BAILLIE, heretofore Agent, Fairville, N.B., has been appointed Assistant Superintendent, London Division, Ontario District, Windsor, Ont. This is a new position.

C. FRANCIS, heretofore Roadmaster, Newport and Orford Subdivisions, Quebec District, Farnham, Que., has been appointed Roadmaster, Chapleau, Ont., vice L. Hebert. transferred.

E. FREEMAN, heretofore Master Mechanic, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Locomotive Foreman, Cartier, Ont.

L. HEBERT, heretofore Roadmaster, Chapleau, Ont., has been appointed Roadmaster, Newport and Orford Subdivisions, Quebec District, vice C. Francis, transferred. Office, Farnham, Que.

J. L. JAMIESON, heretofore Superintendent, Vancouver Division, British Columbia District, Vancouver, has been appointed Superintendent Edmonton Division, Alberta District, with office at Edmontain, vice J. A. Macgregor, appointed Manager, Edmonton, Dunvegan & British Columbia Ry.

F. S. ROSSETER, Assistant Superintendent, Toronto Terminals Division, Ontario District, Toronto, was, on July 1, appointed acting Superintendent, Sudbury Division, Algoma District, Sudbury, Ont., T. A. Wilson, Superintendent, having been granted leave of absence for one month. Effective Aug. 1, he was appointed acting Superintendent, Chapleau Division, Algoma District, Chapleau, Ont., during the absence of W. R. Boucher, Superintendent, on holidays.

LEONARD H. SOLLY, Land Agent, Esquimalt & Nanaimo Ry., has been appointed to fill the vacancy in the C.P.R. Natural Resources Department's subcommittee in Vancouver, caused by the death of R. Marpole, who was chairman of that sub-committee.

C. A. WHEELER, heretofore Master Mechanic, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Master Mechanic, Sudbury Division, Algoma District, vice J. S. Allen, transferred. Office, Sudbury, Ont.

**Edmonton, Dunvegan & British Columbia Ry.**—J. A. MACGREGOR, heretofore Superintendent, Edmonton Division, Alberta District, C.P.R., is reported to have been appointed Manager, Edmonton, Dunvegan & British Columbia Ry. on its transfer to the C.P.R. for operation, with office at Edmonton, Alta.

**Grand Trunk Pacific Ry.** — A. D. CAREY, heretofore Assistant Superintendent, Smithers, B.C., has been appointed Superintendent, Edson, Alta., vice R. M. Halpenny, resigned.

F. W. HOPPER has been appointed General Agent, Passenger Department, G.T.P.R. and Grand Trunk Pacific Coast Steamship Co., San Francisco, Cal.

J. P. KIRKPATRICK has been appointed Assistant Superintendent, Smithers, B.C., vice A. D. Carey, promoted.

**Grand Trunk Ry.**—W. BIBBY, heretofore Supervisor of Track, Montreal, has been appointed Supervisor of Track, Cornwall, Ont.

A. A. SNYDER has been appointed Supervisor of Track, Montreal, vice W. Bibby, transferred.

H. C. SWARTS, bridge master, St. Thomas, Ont., is reported to have been appointed Superintendent of Bridges and Buildings, Eastern Lines, with office at Montreal.

**Railways and Canals Department.**—G. W. YATES, heretofore private secretary to the Prime Minister, and formerly private secretary to the Minister of Railways and Canals, has been appointed Assistant Deputy Minister of Railways and Canals, Ottawa.

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Canadian National Rys. has put on a new local service between Stellarton and Mulgrave, N.S., leaving Stellarton, 4.30 p.m.; arriving Mulgrave, 8.10 p.m.; leaving Mulgrave, 7.30 a.m.; arriving Stellarton, 11.10 a.m.

# The Reid Newfoundland Railway's Condition to be Improved.

The Newfoundland Legislature passed, on July 11, an act providing for raising $1,000,000 for the Reid Newfoundland Ry., for the improvement of the railway, the provision of additional terminal accommodation and the purchase of additional rolling stock. The resolutions on which the act was based were to have been introduced July 8, but were not presented by the Premier until the following day. In the course of his speech he said it was the last thing in the world he ever expected to have to do, to introduce resolutions that favored the Reid Newfoundland Co. by granting it, by way of loan or by favoring it in any other way. It was impossible for the company to procure the necessary rolling stock; impossible for it to erect freight terminals at Port aux Basques and at St. John's, and impossible for it to carry on the railway because it did not have the money necessary for these purposes. The company filed a memorandum with the government on June 30, giving reasons why money should be granted to put the road in repair, and showing the losses sustained by the company since the railway had been operated. The statements contained in the memorandum were not guaranteed by the government. The time had arrived to consider whether the railway was to be operated or not. In his opinion, and in that of his party it should be operated and $1,000,000 must be borrowed to enable the railway to be run efficiently. This money would be expended as follows:—$300,000 for purchase of new fish plates to connect the rails; $250,000 for terminals at St. John's and Port aux Basques, and $450,000 to be paid over to the company to buy 6 locomotives, 50 box cars and 50 flat cars. The fish plates would be bought by the Government, and the company would put them in position on the railway. The money to be spent on terminals at St. John's would provide, among other things, a large freight shed above the Long Bridge; and general betterments would be carried out at Port aux Basques. The cost of the fish plates would be provided by the government, the Attorney General having advised that it was responsible for the same. The remainder of the sum voted would be a charge against the company, repayable with interest, out of any claim which the company might have against the government in 1957. Negotiations would be entered into with the company to have joint control of the railway by a commission from July 1, of this year, to June 30, 1921, the company to appoint three members, and the government three and a chairman. The government appointees would include an outside railway engineer, and an auditor. The resolutions were considered in committee July 10, and passed. The bill based on them was introduced and put through all its stages at the same sitting, the final reading being given to it at 1.20 a.m. (new time) Sunday, July 11.

The company's memorandum referred to in the Premier's speech points out that the railway was built according to the government specifications to meet the then (1890) requirements of the colony, the only change being that 50 lb. rails were used instead of 35 lb., and 65 lb. at the lower end of the Placentia line. No provision was made in the contracts for improvements over and above the specifications of 1890. The company since the signing of the 1901 contract (under which the title to the railway passed from the Reids to the government at cost, and the Reids received a contract for the operation of the railway for 50 years from Aug. 1, 1901, on certain terms) have improved the rolling stock and equipment to meet the increasing traffic on the line. The company has been unable to increase the rolling stock in sufficient quantities since 1915 to meet the extra demands, caused by the sale and loss of local shipping during the war. The loss in operation during the six years preceding the war was $363,057.12, while the loss in the years 1914 to 1919, inclusive, was $1,544,429.13, the loss in 1919 alone being $645,549.02. The total loss for 20 years operation up to the end of 1919 was $3,263,116.34, all of which had fallen directly on the shareholders. The company states that the reason for the roadbed being in an unsatisfactory condition is that the standard laid down in the original specifications was not sufficiently high for a main line, and that, with the government's consent, heavier rolling stock was used than the standard of the road warranted, in order to endeavor to meet the traffic necessities. The total increased revenue for 1919 over 1914 was $645,051.86, while the increase in operating expenses was $1,159,813.75.

## Application for Increase in Freight Rates.

The Railway Association of Canada sent the following application to the Board of Railway Commissioners on July 9, over the signatures of its President, H. G. Kelley, President, G.T.R. and G.T.P.R., and its Secretary, C. P. Riddell:—

"The Railway Association of Canada, on behalf of the railway companies, members thereof, and of all other railway companies within the Board's jurisdiction, hereby applies to the Board under sec. 325 of the Railway Act, and such other sections thereof as may be applicable, for authority to make a general advance of 30% in the tolls at present charged for the carriage of freight by the said companies. In support of such application the applicant respectfully states:—

"1. During the period since the outbreak of the war, the scale of expenditure of the said railway companies on capital, maintenance and operating accounts has increased to an extent unprecedented, which has greatly exceeded aggregate increases in freight and passenger revenues granted during such period.

"2. As a concrete example of the great burdens under which the railway companies are laboring, reference may be made to the result of the wage increase granted in 1918. The so called 25% advance in freight rates, granted under order in council 1863, effective Aug. 12, 1918, was intended to reimburse the railway companies for increased wage expense to which it was then estimated they would be put through the application of the rates of wages and working conditions which had then recently been fixed for the railways of the United States under the so called McAdoo award and supplements thereto, and which has been made applicable to Canada by order in council 1768, effective Aug. 1, 1918. Contrary to all expectations, such increase in revenue proved far from satisfactory to accomplish the purpose for which it was intended. During 1919 the increase in wages, granted as above mentioned, amounted on Canadian railways to more than $80,000,000, while the increase in revenue derived from the advance intended as aforesaid to provide therefor, amounted to only approximately $43,000,000, a shortage of at least $37,000,000. Apart from the increase in wages, the prices of the principal supplies and materials in use on the railways, have increased more than 100% since the beginning of the war period.

"3. In order that the railway companies may maintain their systems in such a state of efficiency as to enable them to serve the interests of the public in a proper manner, it is essential that they be accorded an advance in tolls of at least the extent applied for herein.

"4. The increase in rates sought by this application is based entirely on present costs, and does not take into consideration any increase in wages or costs which may occur hereafter."

As the application is a request for a straight percentage increase based upon the costs of wages and material, which are of general application, the Board has decided that the case can best be heard at one sitting rather than at different places throughout the country, and the hearing will open at Ottawa Aug. 10.

## Windsor-Detroit Railway and General Traffic Bridge.

At a meeting of the Detroit, Mich., Board of Commerce, July 15, at which a number of Windsor, Ont., people were present, steps were taken, according to a press report, for the construction of a press report, for the construction of a railway end general traffic bridge between Windsor and Detroit. This matter has been under discussion for some time; engineers have been making surveys, and tests of the river bed and of both the Canadian and the United States shores, and plans have been prepared for a bridge of the suspension type.

The report states that the approach to the bridge on the Detroit side would be located just above 24th St., and that the Canadian end would be near the easterly limit of Sandwich. The plans contemplate a suspension bridge of 1,770 ft. span, carrying two 28 ft. roadways, two 7 ft. sidewalks, two electric car tracks and four steam railway tracks. The estimated cost of the bridge suggested is $28,000,000, including railway approaches of about a mile, on a gradient of about 1.5%. The bridge would have a height above water of 100 ft. at the harbor lines and 110 ft. at the center, in order to permit the free passage of ships. C. E. Fowler and G. Lindenthal are the engineers, under whose charge the surveys were made and the plans prepared.

**C.P.R. Employes' Passes.**—A Winnipeg report says:—"More than 5,000 annual long service passes have been distributed to employes of the Canadian Pacific Railway Western Lines. The pass is a permanent annual one, which includes the wife of a married man, and is for employes in the service for 10 years or more, covering the district in which they are employed. For employes in the service 20 years or over the pass extends over the whole Western Lines."

# Traffic Orders by Board of Railway Commissioners.

**Contract for Live Stock Transportation.**

General order 300. June 30.—Re consideration of special form of contract for transportation of live stock, to be used by railway companies, and general order 298, June 2, 1920, approving forms of Live Stock Contract and Special Contract with Attendants in charge of stock, marked schedules A and B respectively: It is ordered that the date upon which the said forms of Live Stock Contract and the Special Contract with Attendants in Charge of Stock, marked schedules A and B respectively, on file with the board, shall become effective, be postponed from July 1, 1920, as provided for in general order 298, dated June 2, 1920, to July 15, 1920.

**Cumberland Railway & Coal Co.'s Tariffs.**

29,813. June 28.—Re application of Cumberland Ry. & Coal Co., under sec. 334 of the Railway Act, 1919, for approval of its Standard Passenger Tariff, C. R.C. 5: Upon the report and recommendation of the board's Chief Traffic Officer it is ordered that the said tariff be approved; the said tariff, with reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

29,814. June 28.—Re application of Cumberland Railway & Coal Co., under sec. 331 of the Railway Act, 1919, for approval of its Standard Freight Mileage Tariff C.R.C. 10: Upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that the said tariff be approved; the said tariff, with reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

**Classification of Snow Melters.**

On the application for a ruling of the board in the matter of proper classification of snow melters, in connection with claims of Freeland Steel Tank Co., Winnipeg, against the C.P.R. for freight overcharges, Assistant Chief Commissioner McLean gave the following judgment June 30:—This matter has been conducted by correspondence. After some preliminary correspondence, the applicant was advised that the matter would be set down for hearing at Winnipeg. He, however, informed the board that he did not see the need to have it set down for hearing; and he further stated that if his complaint could not be settled by correspondence, he wished the board to withdraw the complaint as he had no further data to submit. Thereafter the matter was taken off the list. On consideration of the material before the board, it appears that what the applicant is interested in is the classification, not for the future, but as to past transactions. His contention is, in substance, that the articles should, by analogy, have been classed with a second-class rating, and that claims arising in 1918 should have been settled on the basis of second-class. The railway, in dealing with the matter from the standpoint of commodities which it regards as analogous, assessed freight charges on the basis of 1½ times first-class. The submissions made have been carefully considered by the board's traffic department, which reports that it considers the rating proposed by the railways on these articles, which hithereto have not been specifically classified, viz., 1½ times 1st class, L.C.L., is reasonable, having regard to the classification of other articles most nearly analogous as to bulk, weight and structure. Since the date of the application, the railways have proposed a specific rating of 1½ times 1st class for the commodities in question, which it is proposed to incorporate in a supplement to the classification. No further action in the matter is necessary."

**Hamilton Students' Passenger Fares.**

Commissioner Boyce gave the following judgment July 3 on the complaint of the Canada, Park and Central Business Colleges, Hamilton, Ont., against proposed increases by the Hamilton Radial Electric and the Brantford & Hamilton Electric Railways in fares for stuuents attending business colleges in Hamilton:—"The complain was originally from the Canada Business College, of Hamilton, latterly supported by the Park and Central Business Colleges of Hamilton, that as regards students, or scholars, commutation tickets on the Hamilton Radial Electric Railway, and the Brantford & Hamilton Railway (subject to this board's jurisdiction), the railways were improperly restricting the use of such tickets to students attending the public and high schools in Hamilton, and, as a consequence, were discriminating against such students, resident in the suburbs or places on the railways outside of Hamilton, as were habitually attending business colleges and other institutions of learning, training or instruction in Hamilton. In other words, that the railways interpreted the term 'student' in the issue of these tickets, only to those students of the class mentioned, excluding from their benefit, students generally. The board is asked to exercise its jurisdiction to relieve against the alleged discrimination. The railways concerned contend that they are not bound to extend the privileges of these tickets to any except students attending public and high schools; that the business colleges, being purely business enterprises and operated for private gain, do not come within the railways interpretation of 'schools' and their students are not, therefore, entitled to the benefit of the rates referred to. The Hamilton Radial, on Sept. 26, 1919, filed Supplement 1 to O.R.C. 7 (effective Sept. 29, 1919), showing special reduced rates for public and high school students, as follows, in either direction, tickets being limited to one month.

| "From. | To. | Miles. | No. trips. | Price. |
|---|---|---|---|---|
| Hamilton | Kenilworth | 3.95 | 46 | $1.85 |
| " | Ghents | 5.10 | 46 | 1.85 |
| " | Canal | 8.49 | 46 | 1.85 |
| " | Burlington | 10.65 | 46 | 1.85 |
| " | Pine Cove | 12.51 | 46 | 2.25 |
| " | Bronte | 16.73 | 46 | 3.00 |
| " | Oakville | 21.22 | 46 | 3.00 |
| Oakville | Bronte | 4.49 | 46 | 1.85 |
| " | Burlington | 10.57 | 46 | 1.85" |

" 'Note.—School tickets are issued only on presentation of certificate from principal, stating that student is attending school, and are good only on cars arriving at school district at 9 a.m. and returning on 4 p.m. and 5 p.m. cars. Not good on Saturdays, Sundays, or public holidays.'

"Prior to this tariff being filed, the railways extended their students rates to students generally, including students attending business colleges. The new tariff imposes a very substantial increase of rate over former rate enjoyed by students attending business colleges, and all students except those classed in the tariff; the difference to the students unfavorably classed varying from 11 to 360% increase as shown by the statement filed by Mr. Kerr on behalf of complainants at the hearing. I am unable to find in anything urged at the hearing, by the railways, any justification for the distinction between 'students' sought to be imposed by the tariff. Students are to be regarded as a class, and, as a class, they ought to be dealt with as regards rail fares. For the railway to say that privileges shall be extended to certain members of that class and denied to all others falling within the definition is, in my opinion, unfair treatment, amounting to unjust discrimination. Any commutation students rates ought to be made applicable to all students. There ought to be no more difficulty for the railways concerned to interpret the meaning of the word 'student' so as to apply the rates in a comprehensive manner than for the other railways who issue commutation rates to students. I do not think that the supplement filed ought to be permitted to remain in ofrce. It is unsatisfactory and discriminatory in its application and works injustice. The complaints against it are, I think, well founded.

"By sec. 345, ss. 2 of the Railway Act the board is empowered to require the railways subject to its jurisdiction, whenever it sees fit, to grant and issue commutation tickets at such rates and on such terms as the board may order. This is not a case where the board is asked to create a new commutation area. Were it so, different considerations would govern the exercise of the statutory discretion vested in the board by the section cited. The railways have established the system and area; they applied it first generally to all students, the students attending the business colleges of complainants participating in the privilege as members of that class. The railways then, by the supplement complained of, sought to restrict that class, and continue the privilege of cheap rates to one section of it, and deny it to the others, and it is to remedy and equalize that condition of things that the board's jurisdistion is appealed to.

"By the board's order 29,512 of April 1, 1920, in the Commutation Rate Case, the tariff there settled by the board for scholars (or students) commutation passenger traffic was as follows:—

" '(b) 40 trip tickets (scholars' tickets) good for 30 days on the basis of 4¼ mills per mile of travel, subject ot a minimum charge per ride of 7½c.'

"The commutation tariffs filed, pursuant to this order, restrict the age of the scholar to 18 years and under. I think it would be a satisfactory adjustment of this complaint to direct the railways to substitute for the tariff now in force, a tariff of students (or scholars) commutation rates on the basis of the board's order above quoted, and applicable, as in the case of the tariffs filed by railways pursuant to the board's order, within the age limit, to all persons falling within the designation of students or scholars. These rates should be made effective Sept. 1, 1920, next. Order will go accordingly.

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**Railway from Victoriaville to Arthabasca.**—The Minister of Railways gave a negative answer in the House of Commons recently, to the question, "Is it the intention of the government to build a branch line on the Grand Trunk Ry. from Victoriaville to Arthabasca, Que., 3 miles, so that the railway will reach the chief town of the Arthabasca district?"

# Canadian National Railways Construction, Betterments, Etc.

**Halifax Ocean Terminals.**—A press report states that the train shed adjoining the passenger station at the new south terminals, for which the Shearer Co. had the contract, has been completed. This is part of the work of the new freight and passenger terminals which have been under construction for some years.

**Coaling Plants for Eastern Lines.** — Tenders were received to July 24 for the erection of a 250 ton capacity coaling plant at Truro, N.S., and for 100 ton coaling plants at Pirate Harbour, N.S.; Point Tupper, N.S., and Newcastle, N.B.

**St. John Station.**—A. P. Barnhill, K.C., of St. John, N.B., who is a C.N.R. director, is reported to have stated that the erection of the new station there will be proceeded with this year. Preliminary plans for the overhead crossing on Mill St. are said to have been submitted to the C.P.R., and similar plans will also be submitted to the city for approval.

Work on the demolition of the passenger train shed the roof of which collapsed recently, is reported to be progressing. Material for the erection of butterfly roofs is reported to be in course of delivery, and it is said that the erection will be gone on with at once.

**St. John Improvements.**—Following a conference with C.N.R. officials, the St. John, N.B., city council has authorized the laying of three additional tracks on Water St., the work to be done to the city engineer's satisfaction, and the placing and moving of cars thereon be under the harbor master's supervision. It is expected that this work will be done at once in preparation for the winter traffic.

In connection with this work, it was stated in the course of the negotiations that the C.N.R. intends tto build a bulkhead parallel with Charlotte St. extension and on a line with Sydney Market to provide a reclamation area for new trackage; and to straighten out the trestle leading from Reid's Point to the ballast wharf, but it is said that nothing will be done on this work this year.

**McGivney Jct.-Fredericton Revision.**— We are officially advised that a contract has been let to R. B. Stewart, Perth, N.B., for grading for changes in alignment mile 89.94 to 92.30, near Taymouth, and mile 95.32 to 96.51 near Durham on the Fredericton Subdivision. These revisions will make a very great reduction in curvature and gradients, but the difference in distance will be negligible. The new track will conform with National Transcontinental Ry. standards regarding grade and alignment. The two sections referred to are part of the old Canada Eastern Ry., between McGivney Jct. and Fredericton, which will connect the National Transcontinental Ry. at McGivney Jct., with the St. John Valley & Quebec Ry. in Fredericton, and so form part of the through route put in operation recently between St. John, N.B., and the National Transcontinental line.

**Meductic, N.B., to Bancroft, Me.**—A press report states that the Dominion Government is being urged to authorize the construction of a 22 mile line from Meductic, N.B., to Bancroft, Me., to connect the St. John & Quebec Ry. with the Maine Central Rd.

**St. Charles River Bridge, Quebec.** — The further supplementary estimates for the year ending Mar. 31, 1921, passed at the Dominion Parliament's recent session, contain an item of $80,365.48, to pay the Railways and Canals Department, towards the construction of the substructure of the C.N.R. bridge over the St. Charles River, Quebec harbor.

**Harrowsmith to G.T.R.**—A press report of July 14 stated that surveys were being made for a line from about a mile east of Harrowsmith, Ont., along the valley of Mud Creek, to a connection with the G.T.R. main line a short distance west of Collins Bay.

**Western Lines Betterments.**—Tenders were received recently for the construction of the following works:—

Ellis, Ont.—One triple 7 x 12 ft. reinforced concrete box culvert, 238 ft. long overall, at mileage 36.4, Lake Superior Subdivision.

Glenwater, Ont.—One 14 ft. slab top open box culvert, at mileage 44, Port Arthur Subdivision.

Fort Frances, Ont.—A 5-stall locomotive shed and boiler room, and foundation work for a turntable.

Emerson and Gladstone Subdivision, Man.—Fencing. Victoria Beach Branch, Man.—Fencing on 29 miles.

Eaton, Sask.—A 5-stall locomotive shed and boiler house; foundation for a turntable, and labor for a 60,000 gall. water tank.

**Neepawa, Man., Signalling.**—The C.N.R. has ordered a 16-lever Saxby & Farmer interlocking machine, with 13 working levers and 3 spare spaces, and other attendant mechanical materials, for Neepawa, Man., to be installed by the company's own forces.

**Prince Albert Northeasterly.**—We were officially advised in Nov., 1919, that surveys had been completed in Sept., 1919, for a line from Prince Albert, Sask., northeasterly for about 40 miles, to serve the Paddock Wood district, but that construction would not then be gone on with. Early in June tenders were called for construction on this line, and we are now officially advised that a contract had been let to Hebb & Sibbald for grading and culverts on the first 22 miles of the line out from Prince Albert.

**Acadia Valley Branch.**—We are officially advised that the contract for grading and culverts, on the extension of this branch, from mile 25 to 43, has been let to John Timothy, Winnipeg.

**Turtleford Extension.**—As stated in Canadian Railway and Marine World for July, a contract for grading on this extension was let recently to the Western Construction Co., North Battleford, Sask. We have since been advised that the contract is for 23 miles, commencing at Turtleford, Sask., and running southeasterly.

**Kamloops - Vernon - Lumby - Kelowna Line.**—At a recent meeting of the Kelowna, B.C., Board of Trade, letters were read from Hon. Martin Burrell and Senator Bostock relative to construction on this line, which stated that it had been thought possible to get the line completed by August, but that, although construction had been pushed forward with all possible dispatch, there was still much heavy work to be done, and D. B. Hanna, President, advised that he could not give a definite date as to when the line would be ready for traffic. (July, pg. 387.)

## Grand Trunk Railway Construction, Betterments, Etc.

**Toronto to Hamilton**—A press report states that the company's officials are figuring on a four track line between Toronto and Hamilton, Ont. When the work of track elevation from near Dufferin St., Toronto, to Mimico was done some years ago, that section was made into a four track one.

**London Track Elevation.**—A press report states that City Engineer's report on the G.T.R. track elevation problem in London, Ont., is ready for presentation to the city council. A report is also, it is said, being prepared by G.T.R. engineers. The City Engineer's report will, it is stated, deal with subways, at Rectory and Waterloo streets, and an overhead bridge at Egerton St., to take care of the eastern section of the city; a subway at Rideout St., to give uninterrupted communication between north and south London; while questions connected with the crossings at Richmond, Clarence and Wellington Streets are held over, pending further development of plans for a union station. July, pg. 388.)

## Information Badly Mixed Up.

Some of our United States contemporaries, and even a few Canadian ones, get hopelessly astray very often in respect to Canadian railway matters. The following, which appeared in the Engineering News-Record, New York, recently, under "Railways, Proposed Work," is a sample:—

"British Columbia—Until July 2, by Dept. Railways and Canals, Western Blk., Ottawa, building 50 mi. line north from Prince Albert and 60 mi. line from that point east along Saskatoon River, for Canadian Natl. Ry., 34 Sparks St., Ottawa. C. B. Brown, Moncton, N.B., ch. engr."

The work referred to is not in British Columbia, but Alberta. Tenders were not asked for by the Railways and Canals Department, but by the Canadian National Rys., the headquarters of which are not at 34 Sparks St., Ottawa, which is merely a ticket office, but at Toronto. C. B. Brown, Moncton, N.B., is Chief Engineer of the old Canadian Government Rys. and some additional mileage, now forming part of the Canadian National Rys., but has nothing to do with the Western Lines, of which H. A. Dixon is Chief Engineer.

**Official Trip Over Canadian National Rys. Western Lines.**—D. B. Hanna, President, C.N.R., left Toronto early in July for a trip over the lines to the Pacific Coast, accompanied by A. J. Mitichell, Vice President. S. J. Hungerford, Assistant Vice President, went as far as Winnipeg with him, and A. E. Warren, General Manager, Western Lines, met him at Port Arthur. On July 14 he visited Grand Beach on Lake Winnipeg, and on the return trip to Winnipeg four cars of the train he was on were derailed at Gonor, through a defect in, or tampering with a switch, but no one was hurt. On July 16 Mr. Hanna was joined at Winnipeg by Hon. J. D. Reid, Minister of Railways, and a few days later, accompanied by a number of C.N.R. officials, they proceeded via Prince Rupert to Vancouver and Victoria, and are expected to return to the east early in August.

**Montreal Incline Ry.** — The Montreal City Council has ordered the immediate removal of the debris of the dismantled incline railway up the mountain.

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TORONTO, CANADA, AUGUST, 1920.

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# The Canadian Pacific Railway's War Veterans.

Up to June 30 the C.P.R. has given employment to 18,330 returned soldiers. When any C.P.R. man sailed for voluntary service overseas, he carried with him not only credit for six months pay, but also the promise of a position awaiting his return, of equal value to the one he left. That promise was more than kept, for the C.P.R. scale of pay was raised during the war to correspond with the increased cost of living, and re-employment in the same position in most cases meant re-employment at higher pay. Not only was the door thrown wide open to C.P.R. returned men, but for all new openings preference has been given to returned men in general, so that whereas the company's moral obligation covered only the 7,000 who applied for reinstatement, its actual record has been the employment of over 18,000 ex-service men—or more than 20% of the total payroll. The actual figures up to June 30 are as follows:—

| | |
|---|---|
| Total reported as joining the army..... | 11,602 |
| Dead . . ..... | 1,100 |
| Wounded . . ..... | 2,088 |
| Re-employed in the service ..... | 7,008 |
| Other soldiers given employment ..... | 11,322 |
| Total soldiers given employment ..... | 18,330 |

Army service naturally upset the old order of life, and a percentage of those who might have come back to railway service in Canada drifted elsewhere. Of the various types of railway employe the trainmen and locomotive men appear to have remained most true to their old love, as the following figures show:—

| | Enlisted. | Killed or died on active service. | Re-employed. |
|---|---|---|---|
| Train and locomotive men | 1,880 | 201 | 1,338 |
| Shop men ..... | 2,737 | 270 | 1,813 |
| Clerical . . ..... | 3,077 | 280 | 1,820 |
| Miscellaneous . . ..... | 2,860 | 313 | 1,789 |
| Maintenance of way employes . . ..... | 508 | 32 | 248 |
| Total . . ..... | 11,062 | 1,100 | 7,008 |

Of the C.P.R. men re-employed, 370, or over 5%, won special distinction, including two V.C.'s; 2 C.M.G.'s; 17 D.S.O.'s; 3 with bar to D.S.O.'s; 3 D.S.C.'s; 54 M.C.'s; 47 D.C.M.'s; 180 M.M.'s; 13 with bar to M.M.; 17 M.S.M.'s; 13 Croix de Guerre, and one Legion of Honour. Particulars of some of these follow:—

**Victoria Cross.**—Robertson, John Peter, locomotive man, Medicine Hat; Stuart, R. N., officer, Atlantic Service.

**Companion of Order of St. Michael and St. George.**—Hesketh, J. A., D.S.O., D. C.M., Asst. Engineer, Winnipeg; Ramsey, C. W. P., Engineer of Construction, Montreal.

**Distinguished Service Order.**—Barber, H. G., Resident Engineer, Nelson; Bliss, R. H., clerk, Smiths Falls; Cantlie, G. S., Gen. Supt., Car Service, Montreal; Carmichael, John, engineer, B. C. C. Service; Coppock, R. C., officer, Atlantic Service; Cox, H. W. D., fitter, Medicine Hat; Doughty, E. S., Land Agent, Calgary; Gascoigne, F. A., Supt. Car Service, Montreal; Hesketh, J. A., Asst. Engineer, Winnipeg; Hillman, D., Div. Engineer, Sudbury; Flint, Chas., Resident Engineer, Edmonton; Leask, Thos. McCrae, Surgeon, Moose Jaw; Maitland, Oliver Mowat, clerk, Moose Jaw; Quine, J., engineer, B. C. C. Service; Ripley, B., civil engineer, Toronto; Stuart, R. N., officer, Atlantic Service; Wilson, R. (with bar), engineer, Atlantic Service.

**Distinguished Service Cross.** — Ferguson, Herbert J., officer, Atlantic Service; Haines, W. P., officer, Atlantic Service; Outram, Edmund, officer, Atlantic Service.

**Legion of Honour.**—Chalus, C., chauffeur, Brooks.

**Officials Re-instated.**—The C.P.R. policy of finding a position at least as good as the position given up was carried out in the higher ranks of the service, as well as in the lower. Thus for instance:

T. S. Acheson, who was employed, before joining the army, as General Agricultural Agent, Winnipeg, was re-employed in same capacity.

G. W. Curtis, who was employed as Industrial Agent, Montreal, was re-employed in same capacity.

M. L. Duffy, who was chief clerk, Freight Department, London, Eng., was re-employed as Agent at Glasgow.

F. A. Gascoigne, who was Superintendent Car Service, Montreal, resumed duty as Secretary-Treasurer Canadian Pacific Ocean Services Ltd., Montreal.

Gerald Hiam, who was District Freight Agent at Fort William, returned to duty as District Freight Agent, at Cleveland.

W. M. Kirkpatrick, who was Assistant Freight Traffic Manager, at Montreal, resumed duty as Assistant Freight Traffic Manager at Winnipeg.

T. M. Leask, who was Chief Surgeon at Moose Jaw, resumed duty as Chief Medical Officer there.

B. H. Muckleston, who was Division Engineer, Natural Resources Department, Calgary, resumed duty as Division Engineer.

G. G. Ommanney, who was Special Assistant Engineer, Montreal, resumed duty as Assistant Engineer in Chief Engineer's Department, Montreal.

L. C. Ord, who was Assistant Works Manager, Angus shops, Montreal, resumed duty in same capacity.

C. W. P. Ramsey, who was Engineer of Construction, Montreal, and who took command of the Canadian Overseas Railway Construction Corps, resumed duty as Relieving Superintendent on Eastern Lines.

M. J. Robertson, who was Assistant to Manager, Real Estate Department, Montreal, returned to duty in his former position.

H. B. Yewdall, who was Purchasing Agent, Right of Way Department, Winnipeg, resumed his former position.

James Duff, who was General Townsite Agent at Calgary, was re-employed as Superintendent of Townsites, at Calgary.

G. E. Hall, who was Assistant General Storekeeper, Montreal, was, re-employed in same capacity.

A. H. Kendall, who was Master Mechanic at Toronto, was re-employed as Master Mechanic, Quebec District.

Robt. McKillop, who was Superintendent, Montreal, was re-employed as acting Superintendent at Chapleau, and is now Superintendent at London.

---

A press report states that it is expected that early in August all freight trains operated by the Canadian National Rys. into and out of Quebec will be run over the Quebec bridge, and that the present car ferry service between Levis and Quebec will be abandoned, the car ferry, however, being held for use in emergencies. It is not expected that anything will be done in the way of taking Grand Trunk passenger cars into Quebec over the bridge until the autumn.

# Railway Windbreaks for Snow and Sand.

By B. M. Winegar, Forestry Inspector, Canadian Pacific Ry.

Railways use two kinds of fences for snow, a portable one which can be shifted any distance from track, and a permanent one, which is established on the right of way line. The former fence is taken down in the spring and piled up until the autumn. The advantage of this type of fence is obvious, being built in 12-14 and 16 ft. panels, it is easily handled. The maintenance, however, is very high, and the expense necessary in moving considerable. The temporary fence, however, is unsightly. Tree fences recommend themselves on account of their original cost, the small maintenance expense involved after plantations have been established several years, and because of their appearance. Their disadvantage is their liability to fire. Extra precautions are necessary on the part of the track forces to keep fire from getting into the plantation.

There are some fine examples of tree fences in the Ontario orchard belt. Some of these fences have evidently been located at least 50 years. On the windswept prairies, too, settlers have found trees an excellent protection both in winter and in summer. Railway officers have been aware of the practicability of this type of fence for some time, but the price of lumber and posts, until recently, has not made tree planting very attractive. However, tree planting today, in eastern Canada, can be done for less than one half the cost of wooden fences. Live fences are effective and economical. After the third and fourth year, no maintenance is required. They are decorative and do much to make the right of way attractive.

Planting has been done very successfully by the Intercolonial Ry. in northern New Brunswick, since 1887. Here the local red spruce has been dug up from nearby fields and transplanted. This work is still being carried on. When the trees reach a height of 9 to 10 ft., the tops are trimmed. Trees from 18 to 36 in. high have been planted in two rows. From time to time any failures have been taken out and replacements made. This is perhaps the most striking example of just what can be done along this line.

The Canadian Pacific and the Minneapolis, St. Paul & Sault Ste. Marie railways have been planting for a number of years in the prairie country. Moisture conditions limit the varieties to deciduous shrubs and trees. From six to eight rows of shrubs and trees are required. Locust, carragana, willow and poplar are the species used. An attempt is being made, after the plantations have been several years located, to interplant with spruce.

The ideal snow fence appears to be the white or red spruce of this country, or the Norway spruce, planted two or three rows staggered. The trees hold their foliage well to the ground. They grow rapidly, making from 10 to 16 in. annually, after having become established. They make an excellent snow barricade, and are striking in appearance.

Balsam, though of a more rapid growth than spruce, is subject to more enemies, is considerably more brittle, and is not so satisfactory in holding its lower branches. It should do well, however, in mixture.

Cedar is used extensively, and although of slower growth than any of the other species planted, when once established, does extremely well. It makes an even more artistic show that perhaps any of the other species. North of Lake Superior, and west to the prairies, where jack pine predominates, the use of this tree is to be recommended. It is of quick growth, but has the drawback of losing its lower branches quickly, especially when planted close. It should be used in mixture with spruce, balsam or cedar. Norway pine has the same growing characteristics, but, like the jack pine, it will probably do well in the mixture. Use of hemlock has been recommended, but it would appear the least satisfactory of all trees mentioned.

A factor which affects the cost of planting trees and on which success of the plantations depends is the distance which trees have to be hauled. If it were possible to lift trees only a short distance, say within half a mile, the loss would be greatly reduced. It is obvious, however, that where trees are transported from wagons to cars and then taken to destination, drying out of the roots occurs, and the loss is greatly increased. Proper weather conditions are necessary for this work. Trees which are handled in cool, damp weather have a much better chance than if transplanted when weather is dry and hot.

There has been much discussion as to the time when trees should be planted. Successful work has been done in the spring, and again from the middle of September till heavy frost sets in. Where the soil is very heavy and difficult to work, and where heavy boulders are found, the expense is greater and the difficulty of establishing plantations much increased. If it is necessary to use a spade to work the ground, the roots of the trees are much more likely to get insufficient space that where ploughing is done. The following methods have been suggested for establishing tree fences. Trees are planted from 2 to 2½ ft. apart in rows. These rows are from 2 to 3 ft. apart. Two to three rows are necessary.

Nursery stock being impossible to obtain at reasonable figures, we are forced to depend largely on trees dug from the wood. Greater loss is anticipated from this class of material.

The smaller the trees planted, the greater the chance for success. The cost of lifting smaller trees and planting them is much less than the expense involved in lifting bigger stock. It is not practical, however, to use large trees. The expense would be too great, and handling and loss very high. Even nurseries do not handle large conifers, except at a prohibitive rate. Nursery stock is, of course, much more easily handled than wild grown trees. It appears to be good practice when natural grown stock is used to plant trees from 18 to 36 in. high.

The ground to be planted is prepared in the spring or autumn preceding the planting. Ploughing is done and a disc is used. If trees are to be planted in the autumn, the ground should be cultivated during the summer to keep down the weeds. It appears to be good practice to plough a strip about 12 ft. wide, 3 ft. of the plantation on either side being left for fire breaks. It is necessary to keep these fire breaks maintained for several years. Cultivation should be done for at least three or four years. Extra precaution should be taken to see that grass fires are not let run close to trees.

## Quebec Public Service Commission Legislation.

The Quebec Legislature at its last session passed an act repealing of the Revised Statutes of 1909, chap. 3, sec. 3, dealing with the organization of the Quebec Public Utilities Commission, and replacing it by a new section. The title of the commission is changed to that of the Quebec Public Service Commission, and the words 'public service" are defined to mean "every corporation, other than a municipal or school corporation, firm, person or association of persons subject to the legislative authority of the province, or any lessee, trustee, liquidator or receiver thereof, that owns, operates, manages or controls any system, works, plant or equipment for the conveyance of telegraph or telephone messages, or for the conveyance of passengers or goods over a railway or tramway, or upon any lake, river or stream, or for the production, transmission, delivery or sale of heat, light, water or power." If a municipal or school corporation carries on any of these operations, outside of its own territorial limits, it is brought under the commission's control to that extent.

The commission is to consist of a President, Assistant President and one other member, to be appointed by the government for 10 years, subject to removal for cause. Two commissioners shall form a quorum, and the President's decision as to matters of law shall prevail. In unopposed matters, one comissioner may act. The government may appoint a substitute for any commissioner to act on any matter in which it appears any of the commissioners may be interested. The commissioners may engage in any other occupation not inconsistent with the performance of his duties as a commissioner, but may not hold any shares, or other security of any public service, or have any interest in any patented device which may be used for the purposes of a business of public service. There shall be a Secretary of the commission, and expert and technical assistants shall be appointed from time to time as occasion may arise. The commission shall arrange its own laws of practice. Following are the salaries fixed in the act: President, $7,000 a year; commissioners, $3,500 each; Secretary, $2,400.

The commission shall have jurisdiction in all matters under the control of the Executive Committee's Railway Committee, in all questions relating to the transportation of goods on the line of any tramway company; in all matters under the control of the Minister of of Public Works and Labor as set out the civil code articles 6592 to 6596 inclusive, and in other matters dealing with public service, rendered by corporations other than transportation companies.

Other sections of the act deal with the manner in which the commission shall exercise its powers. The orders of the commission may be appealed against to the Court of King's Bench appeal side. A report upon the company's work for each year ending June 30, is to be made to the Attorney General.

The commissioners are F. W. Hibbard, K.C., President; Sir George Garneau and F. C. Labuge, C.E. The Secretary is Jos. Ahern, K.C.

# Toronto, Hamilton and Buffalo Railway Co's Annual Report.

Following are extracts from the report for the calendar year 1919. The report covers the operation of mileage as follows: main line, 79.88 miles; branches, 20.07 miles; lines operated under trackage rights, 4.36 miles; total road operated, 104.31 miles.

There was no change in the capital stock during the year, the amount authorized being $5,500,000 and the amount outstanding remaining at $4,512,500.

The funded debt Dec. 31, 1918, was $5,955,000. It has been decreased by payments. Feb. 1, and Aug. 1, of 12th and 13th installments, respectively, on equipment trust notes, $150,000. Total funded debt Dec. 31, 1919, $5,805,000.

**Summary of Financial Operations Affecting Income.**

| | 1919 | 1918 |
|---|---|---|
| Railway operating income— | | |
| Rail operations— | | |
| Revenues | $2,500,916.78 | $3,045,481.67 |
| Expenses | 2,006,997.76 | 1,874,356.13 |
| Net revenue from rail operations | $ 493,919.02 | $1,171,125.54 |
| Percentages of expenses to revenues | (80.25) | (61.55) |
| Railway tax accruals | $72,000.00 | $61,801.23 |
| Railway operating income | $421,919.02 | $1,109,324.31 |
| Other income— | | |
| Joint facility rent | $44,677.64 | $43,604.96 |
| Miscellaneous rent | 25,640.49 | 24,239.90 |
| Income from unfunded securities and accounts | 2,008.86 | 4,973.42 |
| Hire of equipment—credit balance | 105,421.99 | 31,649.89 |
| Income from lease of road | 26,734.08 | 2,036.22 |
| Income from funded securities | 1,795.70 | 6,545.21 |
| Net other income | $206,278.76 | $113,049.60 |
| Gross income | $628,197.78 | $1,222,373.91 |
| Deductions from gross income— | | |
| Joint facility rent | $10,559.81 | $10,569.18 |
| Interest on unfunded debt | 32,041.57 | 29,949.73 |
| Interest on funded debt | 221,200.00 | 221,200.00 |
| Interest on equipment trust notes | 25,875.00 | 32,625.00 |
| Hire of equipment—debit balance | ..... | 25,522.84 |
| Total deductions from gross income | $289,676.38 | $319,866.75 |
| Net income | $338,521.40 | $902,507.16 |
| Dividends (6% in 1919, 5% in 1918) | 270,750.00 | 225,625.00 |
| Surplus transferred to credit of profit & loss | $67,771.40 | $676,882.16 |
| Amount at credit of profit and loss Dec. 31, 1918 | | $2,458,736.94 |
| Add— | | |
| Surplus for 1919 | $67,771.40 | |
| Sundry adjustments | 11,209.94 | 78,981.34 |
| Balance at credit of profit and loss Dec. 31, 1919 | | $2,537,718.28 |

During the year covered by this report the total operating revenues were $2,500,916.78, a decrease from the previous year of $544,564.89. Freight revenue was $1,739,637.63, a decrease of $568,173.34, due to a general falling off of business, largely attributable to the fact that in the previous year a considerable amount of war material was carried. Passenger revenue was $581,430.11, an increase of $148,903.56, due to the cessation of the war and the demobilization of the troops, permitting the resumption of regular passenger travel. Express revenue was $28,310.00, a decrease of $34,428.20. This decrease was caused by the fact that during the war period much heavy material was shipped by express to expedite its manufacture. Switching revenue was $94,159.24, a decrease of $26,602.77, which naturally follows the falling off of freight revenue. Demurrage revenue was $18,233.00, a decrease of $71,400.50, due to the decrease in volume of business. Dining and buffet revenue was $29,853.96, an increase of $7,439.94, due to increase in passenger travel. Operating expenses were $2,006,997.76, an increase of $132,641.63, and equals 80.25% of operating revenues. This is 18.70% greater than the operating ratio of the previous year.

The fluctuations in operating expenses by groups were as follows:

| | |
|---|---|
| Maintenance of way and structures, increase | $ 78,262.81 |
| Maintenance of equipment, increase | 27,572.32 |
| Traffic expenses, increase | 3,483.74 |
| Transportation expenses, decrease | 46,121.56 |
| Miscellaneous operations, increase | 6,215.01 |
| General expenses, increase | 63,229.31 |
| Net increase | $132.641.63 |

The increase in operating expenses, excepting the general expenses group, is due to the various increases in the rates of pay granted practically all classes of labor during 1919 and to the fact that the increases granted in 1918 in accordance with U.S. Railroad Administration general order 27 were effective only during the last four months of 1918, and to the considerable increase in the cost of material.

The increase in expenses in the general expenses group is due entirely to the adverse exchange situation that obtained in the United States against Canada during the entire year. Much of our material is purchased and considerable miscellaneous expenses are incurred in the U.S., necessitating payment in U.S. currency, while the major portion of our revenues are paid to us in Canadian currency. The conversion of Canadian funds during the year cost the company $76,495.18, and this has been charged to general expenses—other expenses.

After providing for dividends at the rate of 6% on outstanding capital stock, a surplus of $67,771.40 was carried to profit and loss. The charges to road and equipment to Dec. 31, 1918, were $12,818,467.09; net additions during 1919 were $132,641.94. Total amount carried to Dec. 31, 1919, $12,951,109.03.

The steel car ferry steamship Maitland No. 1, owned and operated by The Toronto, Hamilton & Buffalo Navigation Co., was continued in operation during practically the entire year, the mild weather experienced during January, February and March enabling the ship to remain in operation throughout the winter, it being necessary to tie up for a few days during March for repairs. The Maitland was then continuously operated until Dec. 23, 1919, on which date, while approaching Port Maitland in a dense fog, she ran on to a reef and could not be hauled off until a considerable portion of the cargo had been thrown overboard. The ship was placed in dry dock at Buffalo, overhauled and completely restored. The total loss due to the disaster, all covered by insurance, is estimated at $80,000. After the completion of the necessary repairs the ship will be as good as new and will be placed in regular car ferry service at the opening of the navigation season of 1920. The net income for 1919 was $6,418.21, a decrease of $13,301.61 from the previous year, being 1.60% on the capital stock of the navigation company, all of which is owned by the T., H. & B. Ry. Co. This, in view of the general decline in freight business that occurred, is a very satisfactory showing. The operating income of the branch line extending to Port Maitland was $95,519.82. After deducting interest and other fixed charges the net surplus from the handling of traffic over this branch line was $55,025.95. The revenue accruing to this company on business originated on or in connection with the Port Maitland line over and above the earnings on traffic handled over the branch itself amounted in the year to $188,259.85, an increase of $6,135.92 over the previous year.

## Results of Government Control of British Railways.

A statement issued recently by the British Ministry of Transport shows that during the year ended Mar. 31, 1920, the controlled railways of the United Kingdom earned from passenger train traffic, £94,818,686; from goods train traffic, £89,485,894, and from government traffic, £18,264,182, a total of £202,568,762. This has to be reduced by £11,007,656 to cover cost of collection and delivery, £5,956 added for mileage demurrage and wagon hire, and £1,840,901 added under miscellaneous headings. Total revenue is, therefore, brought to £193,407,963, against which must be set an expenditure of £185,819,213, leaving a balance of £7,588,750. This is reduced by £447,680 by the loss on "Other businesses"—passenger road vehicles, steamboats, canals, docks, harbors and wharves, hotels, refreshment rooms and cars, etc.—to £7,141,070, to meet a total to be made up by the government guarantee of £48,490,600. This includes £47,440,000 as the standard year proportion of net receipts; while £1,050,600 has to be added to cover interest on capital works brought into use, bringing the net government liability to £41,349,530. This total does not represent the whole of the charge falling on the exchequer, since no account is taken of the liabilities which may attach to the government in respect of replacement of stock of stores and materials; abnormal wear and tear, and arrears of maintenance other than permanent way and rolling stock.—Railway Magazine, London, Eng.

## Training of Future Railway Officials.

Sir Henry W. Thornton, General Manager Great Eastern Ry. of England, in addressing the Institute of Transport recently, said:—"Training and education of future railway officers will not be confined to specialization in a single subject. Education and training of competent officers of the railway is a matter in which the Institute of Transport can, and I have no doubt will, play a large part. The high railway officer of the future can no longer be exclusively skilled in the movement of traffic, or be a brilliant engineer or a great accountant. He will have to be all of these in a degree. An analyst primarily, with the ability to appreciate the full effect of such movements as we have lately passed through, the economic side of the problem and to foresee the future. There must be a call for men of better general education, of studious and scholarly habits of mind and judicial tendencies of thought. The day of the railway officer who follows precedent, merely because it is such, and is complacent in establishing practices, or dwells within the narrow confines of the department in which he was educated, is past."

# Birthdays of Transportation Men in August.

Many happy returns of the day to,—

V. T. Bartram, ex-Purchasing Agent, Timiskaming & Northern Ontario Ry., now railway contractor, etc., Toronto, born at Ottawa, Aug. 2, 1880.

J. C. Beckwith, ex-District Engineer, Levis, Edmundston and St. Maurice Division, Quebec District, Canadian National Rys., Quebec, Que., now engaged on G.T.R. valuation on behalf of the Dominion Government, born at Fredericton, N.B., Aug. 1, 1875.

C. B. Brown, Chief Engineer, Eastern Lines, Canadian National Rys., Moncton, N.B., born at Ithaca, N.Y., Aug. 27, 1879.

J. S. Carter, District Passenger Agent, C.P.R., Nelson, B.C., born at Aurora, Ill., Aug. 14, 1864.

Hon. F. B. Carvell, K.C., Chief Commissioner Board of Railway Commissioners, Ottawa, Ont., born at Bloomfield, N.B., Aug. 14, 1862.

A. E. H. Chesley, General Accountant, Dominion Atlantic Ry., Kentville, N.S., born near Annapolis Royal, N.S., Aug. 27, 1877.

A. B. Chown, General Agent, Passenger Department, Canadian National-Grand Trunk Rys., New York, born at Belleville, Ont., Aug. 4, 1887.

C. H. N. Connell, District Engineer, Montreal and Saguenay Divisions, Quebec District, Canadian National Rys., Quebec, born at Woodstock, N.B., Aug. 26, 1876.

H. W. Crawford, ex-General Agent, Canada Steamship Lines, Ltd., now of the U.S. Shipping Board, Emergency Fleet Corporation, Cleveland, Ohio, born at Bowmanville, Ont., Aug. 24, 1887.

E. L. Desjardins, Superintendent, Division 1, Quebec District, Canadian National Rys., Levis, Que., born at St. Jean Port Joli, Que., Aug. 1, 1859.

A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry., Kingsville, Ont., and Honorary Secretary-Treasurer, pro tem, Canadian Electric Railway Association, born in Bosanquet Tp., Ont., Aug. 21, 1870.

J. V. Foy, General Passenger Agent, Canada Steamship Lines, Ltd., Toronto, born there Aug. 27, 1882.

Geo. H. Ham, Head Office Department, C.P.R., Montreal, born at Trenton, Ont., Aug. 23, 1847.

W. B. Harper, Resident Engineer, Laurentian Division, Quebec District, C.P.R., Montreal, born at Baie Verte, N.B., Aug. 15, 1882.

W. P. Hinton, Vice President and General Manager, Grand Trunk Pacific Ry. Co., and Grand Trunk Pacific Coast Steamship Co., and General Manager for the Receiver, Winnipeg, born at Hintonburg, Ont., Aug. 30, 1871.

F. S. Isard, Director of Finance, Canada Steamship Lines, Ltd., Montreal, born at Hamilton, Ont., Aug. 14, 1888.

F. L. Lamplough, Superintendent, Ottawa Division, G.T.R., Ottawa, born at Cambridge, Vt., Aug. 15, 1867.

J. D. McDonald, General Passenger Agent, Western Lines, Grand Trunk Ry., Chicago, Ill., born at Toronto, Aug. 27, 1855.

M. K. McQuarrie, Engineer, Dominion Atlantic Ry., Kentville, N.S., born at Sault Ste. Marie, Ont., Aug. 17, 1884.

A. H. Mahon, District Master Mechanic, Grand Trunk Pacific Ry., Edson, Alta., born near Ottawa, Ont., Aug. 27, 1874.

W. J. Meakin, Locomotive and Car Foreman, C.P.R., Wetaskiwin, Alta., born near London, Ont., Aug. 29, 1860.

C. Montgomery, Master Mechanic, Pere Marquette Rd., St. Thomas, Ont., born near London, Ont., Aug. 29, 1860.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver, B.C., born at Greenwich, Eng., Aug. 27, 1875.

L. Palk, Assistant to General Manager and Assistant Secretary, Winnipeg Electric Ry., and Secretary, Winnipeg, Selkirk & Lake Winnipeg Ry., Winnipeg, born there, Aug. 14, 1885.

Lt. Col. Blair Ripley, C.B.E., D.S.O., Engineer, Ontario District, C.P.R., Toronto, born at Oxford, N.S., Aug. 29, 1880.

Hon. Gideon Robertson, Minister of Labor, born at Welland, Ont., Aug. 26, 1874.

J. M. Rosevear, Comptroller, G.T.R., Montreal, born at St. Lambert, Que., Aug. 9, 1869.

W. G. Ross, President, Montreal Harbor Commissioners, born at Montreal, Aug. 6, 1873.

W. LeB. Ross, Local Treasurer, G.T. Pacific Ry., Winnipeg, born at Ottawa, Ont., Aug. 9, 1868.

F. C. Salter, European Traffic Manager, G.T.R., and Canadian Express Co., London, Eng., born at Sarnia, Ont., Aug. 31, 1863.

W. H. Sample, General Superintendent of Motive Power and Car Departments, Grand Trunk Ry., Montreal, born at Altona, N.Y., Aug. 20, 1864.

A. O. Seymour, General Tourist Agent, C.P.R., Montreal, born at Ogdensburg, N.Y., Aug. 14, 1887.

S. A. Simpson, Superintendent, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Winnipeg, born at Toronto, Aug. 22, 1880.

J. F. Sweeting, Industrial Agent, Natural Resources Department, C.P.R., Winnipeg, born at Worthing, Eng., Aug. 20, 1872.

W. J. Sturges, acting Assistant Purchasing Agent, Grand Trunk Pacific Ry., Winnipeg, born at Fairfield, Vt., Aug. 28, 1877.

L. Tait, Secretary-Treasurer, London St. Ry., London, Ont., born at Hamilton, Ont., Aug. 9, 1882.

W. D. Waddell, Chief Accountant, Canadian Northern Ry. System, Toronto, born at Waterford, Ireland, Aug. 7, 1877.

F. E. Warren, General Car Foreman, C.P.R., Winnipeg, born at Chelsea, Que., Aug. 29, 1872.

W. B. Way, Superintendent, Division 1, Central District, Canadian National Rys., Cochrane, Ont., born at Bowmanville, Ont., Aug. 22, 1867.

H. E. Weyman, Manager, Levis County Ry., Levis, Que., born at Guildford, Eng., Aug. 27, 1883.

# Grain in Store at Elevators.

Grain in store at public terminal elevators, interior terminal elevators, country elevators in Western Division, and public elevators in east, also at U.S. Atlantic ports. Prepared by the Dominion Bureau of Statistics, Internal Trade Division.

| Week ending July 9th, 1920: | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William | | | | | | |
| C.P.R. | 27,010 | 11,615 | 25,576 | ..... | 14,873 | 79,074 |
| Empire Elevator Co. | 54,292 | 4,772 | 46,022 | 16,283 | 5,169 | 126,538 |
| Consolidated Elevator Co. | 63,414 | 6,288 | 19,810 | 70,431 | 1,980 | 161,923 |
| Ogilvie Flour Mills Co. | 341,036 | 25,654 | 12,079 | ..... | 4,264 | 383,033 |
| Western Terminal Elevator Co. | 20,645 | 2,182 | 105,127 | 25,658 | 1,046 | 154,658 |
| G. T. Pacific | 48,048 | 45,487 | 23,473 | 35,254 | 3,192 | 155,454 |
| Grain Growers' Grain Co. | 100,257 | 49,815 | 45,741 | ..... | 6,914 | 202,727 |
| Fort William Elevator Co. | 21,838 | 30,710 | 4,169 | 18,975 | 6,253 | 81,945 |
| Northwestern Elevator Co. | 144,015 | 30,424 | 24,323 | 43 | 2,136 | 200,941 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 168,812 | 40,019 | 24,787 | 1,047 | 16,451 | 251,116 |
| Sask. Co-op. Elevator Co. | 190,534 | 69,940 | 58,527 | 115,622 | 4,387 | 439,010 |
| Canadian Government Elevator | 194,734 | 44,682 | 39,279 | 91,082 | 6,503 | 376,280 |
| Thunder Bay | 142,083 | 68,812 | 15,350 | 19,414 | 1,910 | 247,569 |
| Davidson and Smith | 31,852 | 6,145 | 7,693 | ..... | 222 | 45,912 |
| Eastern-Richardson | 59,848 | 20,332 | 36,071 | 17,541 | 798 | 134,590 |
| Total Public Terminal Elevators | 1,608,418 | 456,877 | 488,027 | 411,350 | 76,098 | 3,040,770 |
| Total Private Terminal Elevators | 401,061 | 94,437 | 32,203 | 82 | ..... | 527,783 |
| Saskatoon Can. Gov't. Elevator | 1,409,428 | 24,808 | 325 | 19,241 | ..... | 1,453,802 |
| Moose Jaw Can. Gov't. Elevator | 1,246,758 | 14,996 | 1,503 | 13,358 | ..... | 1,276,615 |
| Calgary Can. Gov't. Elevator | 914,695 | 267,783 | 18,412 | 68 | 7,006 | 1,207,964 |
| Vancouver, B.C. | 7,590 | ..... | ..... | ..... | ..... | 7,590 |
| *Total Interior Terminal Elevators | 3,578,471 | 307,587 | 20,240 | 32,667 | 7,006 | 3,945,971 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 22,500 | ..... | 50,674 | ..... | ..... | 73,174 |
| Midland Elevator Co. | 798,239 | 4,416 | ..... | ..... | ..... | 802,655 |
| Tiffin, G.T.P. | 153,440 | 40,198 | ..... | ..... | ..... | 193,638 |
| Port McNicoll | 289,490 | 3,232 | 123,535 | ..... | ..... | 416,257 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 701,781 | 94,228 | 33,667 | ..... | ..... | 829,676 |
| West Can. Flour Mills Co., Ltd. | 189,798 | ..... | ..... | ..... | ..... | 189,795 |
| Toronto Campbell Flour Mills Co. | 54,392 | 5,495 | 4,265 | ..... | ..... | 64,152 |
| Kingston— | | | | | | |
| *Maple Leaf Milling Co., Ltd. | 883,683 | ..... | ..... | ..... | ..... | 883,683 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 1,776,016 | 433,743 | 651,110 | ..... | 16,889 | 2,877,758 |
| Montreal Warehousing Co. | 745,224 | 5,727 | 45,759 | ..... | ..... | 796,710 |
| Ogilvie Flour Mills Co. | 25,488 | ..... | ..... | ..... | ..... | 25,488 |
| Quebec Harbor Commissioners | ..... | 13,382 | ..... | ..... | ..... | 13,382 |
| Total Public Elevators | 5,640,051 | 600,421 | 909,010 | ..... | 16,889 | 7,166,371 |
| *Total Country Elevators | 3,255,415 | 2,055,339 | 1,040,468 | 381,291 | ..... | 6,732,513 |
| U.S. Atlantic Seaboard ports— | | | | | | |
| *Portland, Me. | 10,330 | 573,446 | 34,657 | ..... | 36,286 | 654,719 |
| Baltimore, Md. | ..... | ..... | ..... | ..... | 3,488 | 3,488 |
| Total U.S. Atlantic Seaboard Ports | 10,330 | 573,446 | 34,657 | ..... | 37,774 | 658,207 |
| Total Quantity in Store | 14,493,746 | 4,088,107 | 2,524,605 | 825,390 | 139,767 | 22,071,615 |

*Quantity for each individual interior terminal elevator not received.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the board are given in full on another page of this issue.

General order 300. June 30.—Ordering that date on which forms of Live Stock Contracts and the Special Contract with Attendants in Charge of Stock, Schedules A and B respectively, to general order 298, June 2, shall become effective, be postponed from July 1 to July 15.

29,768. June 18.—Approving agreement, June 5, between Bell Telephone Co. and Osprey Tp., Grey County, Ont.

29,769. June 21.—Rescinding order 28,804, Sept. 12, 1919, re G.T.R. siding on Lot 22, Con. 1, Elizabethtown Tp., Que.

29,770. June 21.—Authorizing C.P.R. to build spur for Fraser Valley Milk Producers Association, in Sumas municipality, New Westminster District, B.C.

29,771. June 22.—Relieving Grand Trunk Pacific Branch Lines Co. and C.P.R. from maintaining signalman at crossing on Sundays, at Druid, Sask.

29,772. June 22.—Extending to Aug. 3, time within which G.T.R. may complete extension of siding for Christie Henderson Co., Puslinch Tp., Ont.

29,773. June 22.—Authorizing Canadian National Rys. to build spur for Imperial Oil Ltd. at Melfort, Sask.

29,774. June 17.—Amending order 26,031, Apr. 17, 1917, re G.T.R. subway and road diversions at Lyn Road, Elizabethtown Tp., Que., to provide that 25% of the cost, not to exceed in all $15,000, be paid out of railway grade crossing fund.

29,775. June 17.—Authorizing Canadian Northern Pacific Ry. to cross and divert highway at mile 32 on its Vernon-Kelowna Branch, B.C.

29,776. June 17.—Authorizing Canadian Northern Pacific Ry. to cross and divert highway on Okanagan Branch at mile 26.4 from Kamloops Jct., in s.w. ¼ Sec. 4, Tp. 19, Range 14, B.C.

29,777. June 22.—Authorizing G.T.R. to build spur from corner of Rebecca St., and Ferguson Ave., Hamilton, Ont.

29,778. June 17.—Apportioning cost of transfer track between Canadian Northern Saskatchewan Ry. and C.P.R. at Yorkton, Sask.; 25% to be paid by C.P.R. and 75% by C.N.S.R.

29,779. June 17.—Authorizing diversion of Rosebud River and filling in of two bridges by C.P.R. in s.w. ¼ Sec. 30, Tp. 27, Range 20, west 4th meridian.

29,780 to 29,782. June 17.—Authorizing Canadian Northern Pacific Ry. to cross highway at miles 14.9, 11 and 2, Vernon-Kelowna line, Okanagan Branch, B.C.

29,783. June 17.—Approving Central Vermont Ry. bylaw authorizing Vice President, General Freight and Passenger Agent, General Freight Agent or Assistant General Freight Agent, to issue tariffs of tolls, and rescinding order 27,451, July 19, 1918.

29,784. June 17.—Approving Marconi Wireless Telegraph Co. bylaw under sec. 323 of the Railway Act, 1919, authorizing A. H. Morse, Managing Director, to issue tariffs of tolls, and rescinding order 17,943, Nov. 9, 1912.

29,785. June 22.—Authorizing Canadian National Rys. to remove south distant signal of Timiskaming & Northern Ontario Ry. to 660 ft. from home signal, at Nortb Bay, Ont.

29,786, 29,787. June 24.—Approving Bell Telephone Co. agreements, June 10, with Lanark & Carleton Counties Telephone Co., Lanark and Carleton Counties; and June 8, with Excelsior Telephone Co., Oxford County, Ont.

29,788. June 22.—Approving Michigan Central Rd. bylaw authorizing either Carl Howe, Traffic Manager, or A. Johnson, Chief of Traffic Bureau, in respect of passenger and freight traffic; L. W. Landman, Passenger Traffic Manager, or C. R. Clark, General Passenger Agent, in respect of passenger traffic, and O. R. Bromley, General Freight Agent, to issue tariffs of tolls.

29,789. June 24.—Authorizing C.P.R. to relocate its station at Islington, at mile 8.61 Galt Subdivision, Ont., providing that Board shall be at liberty to relocate same if it develops that traffic on the highway is blocked for more than 5 minutes at any one time by reason of the location.

29,790, 29,791. June 24.—Approving Bell Telephone Co. agreements, June 4, with Mapleshade Telepbone Co., Oxford County, and June 7, with Goodwood Rural Telephone Co., Lanark and Carleton Counties.

29,792. June 24.—Authorizing C.P.R. to rebuild bridge 60.13, Cartier Subdivision, Algoma District, Ont.

29,793. June 15.—Approving location of portions of C.P.R. Bassano Easterly Branch, Empress to Milden, from mile 172.76 to 217.45, and authorizing the crossing at grade of 54 highways.

29,794. June 24.—Authorizing G.T.R. to build spur for Lever Bros. Ltd., Toronto.

29,795. June 22.—Authorizing C.P.R. to alter location of its main line between Bay St. and Parrack St., Kingston, Ont., to build across Place d'Armes St., at grade, and to close portions of Eay St. and King St.

29,796. June 24.—Approving work to be done on Hanna drain under G.T.R. on Lot 10, Con. 8, Elma Tp., Ont.

29,797. June 25.—Approving Western Union Telegraph Co.'s tariff C.R.C. 8, effective June 28.

29,798. June 25.—Amending order 2,327, Nov. 20, 1906, re operation of drawbridge at Nominingue, Que., by C.P.R.

29,799. June 25.—Authorizing C.P.R. and G.T.R. to operate over crossing at Tilsonburg, Ont., without first stopping trains.

29,800. June 25.—Authorizing C.P.R. to divert road allowance on south boundary of s.w. ¼ Sec. 4, Tp. 27, Range 5, west 2nd meridian; to build same across its tracks at mile 36.8, Wynward Subdivision, and to close diverted portion within its right of way.

29,801. June 25.—Authorizing Canadian National Rys. to rebuild bridge over Wallace cut, Medora Tp., at mile 115.4 from Toronto.

29,802. June 25.—Authorizing Michigan Central Rd., to operate freight traffic over spur on Leamington Branch, 11.72 miles west of Comber, Ont., for 16,500 ft.

29,803. June 25.—Amending order 29,655, May 19, re C.P.R. crossing of Sherbrooke St. Ry. at Sherbrooke, Que.

29,804. June 24.—Suspending order 28,166, Mar. 19, re Canadian National Rys. train service at Newburgh, Ont.

29,805. June 24.—Suspending order 28,858, Oct. 6, 1919, re Canadian National Rys. train service at Fallowfield, Ont.

29,806. June 24.—Approving Northern Pacific Ry. supplement 2 to tariff C.R.C. S-6.

29,807. June 24.—Suspending order 27,296, June 8, 1918, re Canadian National Rys. train service at Camden East, Ont.

29,808. June 22.—Ordering G.T.R., in addition to protection provided at crossing of William and Maitland Sts., London, Ont., to maintain watchmen there between 7 p.m. and 7 a.m. daily, wages to be paid, 60% by G.T.R. and 40% by the city.

29,809. June 29.—Authorizing Canadian National Rys. to build spur for Newcastle Junior Mining Co., Drumheller, Alta. See order 29,812.

29,810. June 26.—Authorizing C.P.R. to divert road on east boundary of s.e. ¼ Sec. 25, Tp. 21, Range 23, west 2nd meridian, to carry it across its track at mile 36.5, Colonsay Subdivision, and to close diverted portion within its right of way.

29,811. June 26.—Approving agreement, June 7, between Bell Telephone Co. and North Renfrew Telephone Co., Renfrew County, Ont.

29,812, June 29.—Ordering Canadian National Rys. to build spur for Elgin Coal Co., from Newcastle Junior Mining Co.'s spur, in s.e. ¼ Sec. 10 and s.w. ¼ Sec. 2, Tp. 29, Range 20, west 4th meridian, Alta. See order 29,810.

29,813, 29,814. June 28.—Approving Cumberland Ry. & Coal Co.'s Standard Passenger Tariff C.R.C. 5, and Standard Freight Tariff, C.R.C. 10.

29,815. June 30.—Authorizing Saskatchewan Government to build highway crossing over Canadian National Rys. west of the station grounds at Ritchie, Sask.

29,816. June 29.—Authorizing C.P.R. to build spur for Rock Creek Lumber Co., in Lot 4588, Group 1, East Kootenay District, B.C.

29,817. June 29.—Approving agreement, May 18, between Bell Telephone Co., and Fairview Telephone Co., in Oxford County, Ont.

29,818. June 29.—Authorizing Canadian National Rys. to build spur for J. I. Case Threshing Machine Co., Winnipeg.

29,819. June 30.—Approving location and details of Canadian Express Co.'s building at Bracebridge station, Ont.

29,820. June 30.—Extending to Oct. 1, time within which Kettle Valley Ry. may open for freight traffic, portion of its line from mile 13.6, Princeton, B.C., south to mile 8.

29,821. June 30.—Approving addition to G.T.R. station at Atherley Jct., Ont.

29,822. June 30.—Approving location and details of Canadian Express Co.'s building at Huntsville, Ont.

29,823. July 2.—Extending to Jan. 1, 1921, time within which L'Air Liquide Society may use cylinders in transportation of compressed acetylene gas.

29,824. June 2.—Ordering Canadian National Rys. to build a third class station at Redland, Alta.

29,825. July 2.—Authorizing C.P.R. to rebuild bridge 9.2 over Bull River, Lake Windermere Subdivision, B.C.

29,826. July 2.—Ordering Esquimalt & Nanaimo Ry. to build highway crossing at Cobble Hill, Vancouver Island, B.C.; B.C. Government to do the grading on both approaches, in accordance with the Board's Standard Regulations affecting Highway Crossings, as amended May 4, 1910; and ordering that the road west of the railway be closed.

29,827. June 26.—Ordering Grand Trunk Pacific Ry. to build loading platform, extend freight shed and build stock yard at Telkwa, B.C.

29,828. June 29.—Authorizing Grand Trunk Pacific Ry. to build siding and coal bunker plant at Telkwa, B.C., approving clearances there, and rescinding orders 20,857, 21,344 and 29,617, Nov. 19, 1913, Feb. 11, 1914, and May 6, 1920, respectively.

29,829. July 6.—Authorizing Grand Trunk Pacific Ry. to make highway crossing over and divert road in s.e. ¼ Sec. 17, Tp. 44, Range 5, at mile 658.4, Gilt Edge municipality no. 422, North Alberta District.

29,830. July 6.—Authorizing G.T.R. to build spur, and two extensions to existing sidings, for Wood Sales Co., Strong Tp., Ont.

29,831. July 3.—Authorizing Canadian Northern Ry. to open for traffic its connection with G.T.R. at Pembroke, Ont.

29,832. July 5.—Authorizing G.T.R. to build sidings for Canada Crushed Stone Corporation, Flamboro West Tp., Ont.

29,833. July 5.—Authorizing Canadian National Rys. to build spur for Lindsay & Hill Lumber Co., in n.e. ¼ Sec. 30, Tp. 44, Range 27, west principal meridian, Man.

29,834. July 5.—Authorizing Canadian National Rys. to make highway crossing over its track at Winchester Ave., Fort Garry, Man.

29,835. July 5.—Authorizing Canadian National Rys. to carry traffic over portion of its line from Dunblane to Lucky Lake, Sask., 19.75 miles; speed of trains not to exceed 15 miles an hour.

29,836. July 5.—Extending to Aug. 15 time within which G.T.R. may complete changes in its locomotive house at London, Ont.

29,837. July 7.—Authorizing G.T.R., for purpose of removing obstructions to view at highway west of Niagara Falls, Ont., to enter lands of T. Morrison and remove trees; should parties fail to agree upon amount of compensation payable, same shall be decided by the Board and paid by G.T.R. to the owner.

29,838. July 5.—Authorizing C.P.R. to change location of its tracks, at mileage 37.2, Hamilton Jct., Ont.

29,839 to 29,842. July 9.—Extending to Aug. 31, time within which Canadian National Rys. may install bell at crossing of main road to Red River, St. Jean Baptiste, Man.; wigwags and automatic bell at Brock St., Fort William, Ont.; bell at Amelia St., Fort William, Ont., and wigwags and automatic bell at Francis St., Fort William, Ont.

29,843. July 9.—Authorizing J. C. Willever, Vice President, Western Union Telegraph Co., to prepare tariffs of tolls.

29,844. July 9.—Authorizing C.P.R. to divert road allowance on west boundary of n.w. ¼ Sec. 16, Tp. 13, Range 20, west principal meridian, and to close same within limits of its right of way.

29,845. July 8.—Ordering Grand Trunk Pacific Ry. to erect fences along its right of way from mileage 1170.67 to 1171.3; from mile 1171.7 to 1173.6, and from mile 1170.57 to 1174, in British Columbia.

29,846. July 10.—Extending to Sept. 1 time within which Ottawa and New York Ry. may appoint caretaker at Northfield, Ont.

29,847. July 13.—Authorizing C.P.R. to rebuild bridge 80, Shaunavon Subdivision, Sask.

29,848. July 13.—Authorizing C.P.R. to rebuild bridge 59.61, Cartier Subdivision, Algoma District.

29,849. June 30.—Approving agreement May 7, between Bell Telephone Co. and Hogg & Lytle, Ltd., Victoria County, Ont., and rescinding order 6,138, Jan. 21, 1910.

29,850. July 13.—Relieving Pere Marquette Rd. from providing further protection at Gravel Road crossing, near Blenheim, Ont.

29,851. July 12.—Authorizing C.P.R. to divert surveyed roadway in north half of Sec. 22, Tp. 17, Range 32, west principal meridian, to carry same across its tracks, and to close same within limits of its right of way.

29,852. July 13.—Approving agreement, June 16, between Bell Telephone Co. and Birch Lake Telephone Co., Sudbury, Ont.

29,853. July 12.—Dismissing application of Victor Flink, Lucky Lake, Sask., for order directing Canadian National Rys. to build cattle pass through his property.

29,854, 29,855. July 13.—Approving Bell Telephone Co. agreement, June 25, with Desboro Telephone Co., Grey County, Ont.; and June 19, with Oro Telephone Co., Simcoe County, Ont., and rescinding orders 7,703, Aug. 5, 1909, and 28,007, Jan. 11, 1919, respectively.

29,856. July 16.—Rescinding order 29,050, Nov. 17, 1919, re building of farm crossing, by G.T.R. for A. McGuinness, Marysville, Ont., without prejudice to applicant to renew application for same.

29,857. July 15.—Authorizing Toronto, Hamilton & Buffalo Ry. to operate trains over crossing on Aberdeen Ave., Hamilton, Ont.

29,858. July 14.—Relieving G.T.R. from providing further protection at crossing of Victoria Park Ave., East Toronto, Ont.

29,859, 29,860. July 15.—Authorizing St. Thomas Municipal Ry. for three months from date to operate pay as you enter one-man cars across London & Port Stanley Ry. on Wellington St., and Talbot St., St. Thomas, Ont.; in addition to watchmen already provided by L. & P. S. Ry., applicant to provide watchmen between 6 and 12 p.m.; watchmen to have charge of railway and street traffic; cars of both companies to stop before crossing, and railway em-

ployes to be governed by signals from watchmen before crossing; wages to be paid half each by city and railway company.

29,861, 29,862. July 14.—Authorizing Canadian National Rys. to close its stations at Napanee and Grafton, Ont.

29,863. July 15.—Relieving C.P.R. from providing further protection at the crossing of the highway 2.5 miles west of Strathmore, Alta.

29,864. July 17.—Approving Toronto Suburban Ry. Standard Passenger Tariff C.R.C. 1, same to be published in two consecutive weekly issues of Canada Gazette.

29,865. July 10.—Ordering Hamilton Radial Electric Ry. and Brantford & Hamilton Electric Ry. to substitute for their tariffs of students' or scholars' commutation rates a tariff to apply to scholars 18 years old or under on the following basis, 40-trip tickets, good for 30 days, on basis of 4¼ mills a mile of travel, subject to a minimum of 7½c.; effective Sept. 1.

29,866. July 19.—Authorizing Canadian National Rys. to open for traffic the diversion of line from mile 139.7, Muskoka Subdivision, for 6,799.6 ft., in Foley Tp., Ont.

29,867. July 19.—Authorizing C.P.R. to operate signals at crossing of Canadian Northern Ontario Ry. at Bonarlaw, Ont.

29,868. July 17.—Dismissing application of town of Laval, Que., for order requiring Canadian National Rys. to change location of station so that the two stations, one each end of the town, be brought to one point.

29,869. July 17.—Authorizing C.P.R. to build three tracks at grade, across Mackenzie Ave., Edmonton, Alta.

29,870. July 17.—Authorizing C.P.R. to rebuild bridge 32.49, over Mississippi River, on Chalk River Subdivision, Quebec District.

29,871. July 17.—Authorizing C.P.R. to divert road allowance on south boundary of Sec. 30, Tp. 23, Range 15, west 3rd meridian; to build, at grade, its tracks across same at mile 46.5, Rosetown Southeasterly Branch, and to close, within its right of way, the diverted portion of said road allowance.

29,872. July 17.—Ordering Canadian National Rys. to erect one-pen stock yard at Meanock, Alta.; to be completed by Sept. 15.

29,873. July 19.—Authorizing C.P.R. to build spur for Manitoba Rolling Mill Co. at mile 20, Winnipeg Beach Subdivision, Man.

## The Railway Situation in the Gaspe Peninsula.

In connection with the railway situation in the Gaspe Peninsula of Quebec, to which considerable attention has been attracted recently by questions in Parliament, and by an investigation of the condition of the Atlantic, Quebec & Western Ry., and the Quebec Oriental Ry., and the services given by them, conducted by the Board of Railway Commissioners, a petition has been forwarded to the Dominion Government asking that these lines be taken over and consolidated as a branch of the Canadian National Rys. The petition is reported to have been largely signed in all the parishes lying between Matapedia and Gaspe, along the route of the two lines, a distance of 202 miles. C. Marcil, M.P. for Bonaventure County, has written D. B. Hanna, President, Canadian National Rys., calling attention to what has been done, and claiming advantages that would accrue to the C.N.R. through the development of the country through which the lines pass, were they efficiently operated. He also points out that by the construction of a railway bridge across the Restigouche River between Cross Point, Que., and Campbellton, N.B., connection would be afforded with the Intercolonial Ry. and the International Ry. of New Brunswick. The construction of the bridge referred to was a work in which the late Thos. Malcolm, who built the International Ry. of N.B., was greatly interested, and endeavored to carry through, but without success.

A cablegram states that at a meeting of Atlantic, Quebec & Western Ry. shareholders in London, Eng., the chairman referred to correspondence and interviews with members of the Dominion Government regarding the sale of the line, but that no decision had then been reached in regard to it.

## Among the Express Companies.

G. Allen has been appointed agent, Dominion Ex. Co., Kingston, Ont., vice F. W. Carr, transferred.

J. D. McLaren, heretofore agent, Dominion Ex. Co., Macleod, Alta., has been appointed agent, Banff, Alta.

W. Kelly, heretofore cashier, Dominion Ex. Co., Swift Current, Sask., has been appointed cashier, Moose Jaw, Sask.

D. F. Martin, heretofore route agent, Dominion Ex. Co., North Bay, Ont., has been appointed route agent, Toronto.

C. R. Fitzsimmons, heretofore agent, Dominion Ex. Co., McAdam, N.B., has been appointed agent, Woodstock, N.B.

J. H. Whitehouse has been appointed agent, Dominion Ex. Co., Kamloops, B.C., vice H. L. Maltby, transferred to Macleod, Alta.

R. Murray has been appointed acting route agent, Dominion Ex. Co., North Bay, Ont., vice D. F. Martin, transferred to Toronto.

C. H. Badendick has been appointed cashier, Dominion Ex. Co., Swift Current, Sask., vice W. Kelly, transferred to Moose Jaw, Sask.

The Canadian National Ex. Co. has opened offices at Perthius, Que., and Cameron Falls, Ont., and has closed its office at Cronyn, Ont.

A. T. Grimmer, St. Stephen, N.B., has been appointed agent, Dominion Ex. Co., McAdam, N.B., vice C. R. Fitzsimmons, transferred to Woodstock, N.B.

H. L. Maltby, heretofore agent, Dominion Ex. Co., Kamloops, B.C., has been appointed agent, Macleod, Alta., vice J. D. McLaren, transferred to Banff, Alta.

W. J. Malcolm, heretofore chief bill clerk, Dominion Ex. Co., Toronto, has been appointed agent, Galt, Ont., vice E. Anderson, transferred to Windsor, Ont.

J. I. M. Grant, heretofore cashier, Canadian Ex. Co., St. Catharines, Ont., has been appointed agent, Bradford, Ont., vice G. A. Oliver, resigned from the service.

E. Anderson, heretofore agent, Dominion Ex. Co., Galt., Ont., has been appointed acting agent, Windsor, Ont., vice W. Aitchison, agent, resigned from the service.

W. J. Gasper, heretofore messenger, Dominion Ex. Co., Halifax to Sydney, N.S., has been appointed agent, Dartmouth, N.S., vice T. B. Spencer, resigned from the service.

The Board of Railway Commissioners has approved location and details of express buildings to be built for Canadian Ex. Co. at G.T.R. stations at Bracebridge and Huntsville, Ont.

The agreement arrived at between the Canadian National Ex. Co. and its employes, at the end of June, provides for wage increases averaging approximately 25%. It is stated that the annual increase to the company's wage bill will be about $200,000, the increases covering about 600 employes at various points between the Atlantic and Pacific Oceans.

The Association of Railway Executives decided at New York, July 16, according to a press report, to recommend to all railways that U.S. express business continue to be handled under Federal control, as it was during the war, by one agency, the American Railway Ex. Co. The reason for this recommendation is stated to be, that the four original express companies have practically ceased to exist. A standard form of contract between the individual railway companies and the American Railway Ex. Co. is to be prepared and submitted to the Interstate Commerce Commission for approval.

Justice Masten, of the Ontario Supreme Court, gave judgment recently that express companies must accept consignments of intoxicating liquor made to them by dealers in Ontario, despite the action of the Ontario License Board in forbidding them to accept liquor consignments from the firms concerned. This judgment was given on an application of a firm of liquor dealers at Kenora, Ont., for a mandamus to compel the Dominion Ex. Co. to accept shipments of liquor for export out of Ontario to foreign countries. A similar judgment was given in Calgary, Alta., July 6, where a test case against the Dominion Ex. Co. was tried, the judgment declaring that the company is bound to receive and carry any liquor tendered to it by dealers.

## The Dominion Express Co.'s London-Paris Air Service.

A distinctly novel attraction was provided recently in the Canadian Pacific Ry. office windows at Charing Cross, London, Eng., viz., an excellent model aerodrome of the Aircraft Transport & Travel, Ltd., at Hendon, together with scientifically accurate models of various types of aeroplanes and airships. Such a display in a railway and shipping office is a sign of the times, also marking much enterprise on the part of the Dominion Express Co., Ltd. Realizing the importance of maintaining a really "express" service, if its name is still to be justified, the Dominion Express Co. made arrangements to act as passenger and parcels agents for the Aircraft Transport & Travel, Ltd., on its London-Paris daily air service. It is thus possible for either passengers or parcels to be booked for conveyance by aeroplane to or from London and Paris through any of the Dominion Express Co.'s offices in Europe, and these, in addition to London, are to be found in important cities such as Liverpool, Glasgow, Manchester, Birmingham, Bristol and Paris. The Dominion Express Co., holding, as it does, the exclusive right of shipping express parcels over the entire C.P.R. system, as agents for the aeroplane service can ensure that an express package scheduled to go on a certain ship actually reaches its destination in Canada in the shortest possible space of time. The timetable shows that only 2¼ hours is occupied on the journey to or from London and Paris—urgent letters are carried at 2s. 6d. an ounce over the ordinary letter rates. Parcels for delivery in Paris on the same day have to be handed in at 62 Charing Cross, London, S.W.1, before 10.30 a.m. The parcels rates range from 1s. 6d. to 2s. 6d. a pound, according to quantity, while special rates are quoted for large and regular consignments. The single fare for passengers is 15 guineas, which includes a car to convey the passenger to Hounslow, the starting point.—Railway Magazine, London, Eng.

**Canadian National Rys. Rolling Stock.** There has been deposited with the Secretary of State at Ottawa, duplicate and original of a lease and agreement dated May 1, made by the Canadian National Rolling Stock Ltd. to the Canadian Northern Ry. Co., covering certain rolling stock, attached to which is an assignment to the Girard Trust Co.

# Electric Railway Department

## The Hydro Electric Railway Situation in Ontario.

Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario, issued the following statement on June 29:—

"Subsequent to the Dominion Government acquiring the Canadian Northern Ry. and the various electric lines, viz., the Toronto Eastern, the Toronto Suburban and the Niagara, St. Catharines & Toronto Railways, the Chairman of the Hydro Electric Power Commission approached the Minister of Railways and Canals to determine what arrangement might be made to acquire these electric railway lines from the Dominion Government, thus avoiding the duplication and paralleling of electric railways in the districts in which the municipalities had already voted in favor of radial railways, as well as in those districts in which the municipalities contemplated constructing electric railways. The Minister of Railways and Canals was in full accord with such a policy, and gave an option to the Commission for the sale of the Toronto Eastern Railway, partly constructed, in the district between Toronto and Bowmanville, upon which the municipalities subsequently voted and carried by large majorities.

"When the vote was taken from Port Credit to St. Catharines as a part of the line between Toronto and Niagara Falls, the submission of the bylaws for the construction of the section from St. Catharines to Niagara Falls was delayed, the Commission contemplating the acquiring of the Niagara, St. Catharines & Toronto Ry. as a part of this system, thus saving duplication and paralleling of existing lines in the Niagara district.

"At a subsequent conference with the Minister of Railways and Canals, and a sub-committee of the Privy Council appointed for this purpose, an agreement was reached which the Chairman of the Hydro Electric Power Commission was prepared to recommend to the Commission, that the municipalities submit bylaws and agreements for the acquiring and operation of the Toronto Eastern, Toronto Suburban, and Niagara, St. Catharines & Toronto Rys., which recommendation and agreement was subsequently approved by the Dominion Cabinet. The offer agreed upon and the recommendation of the Chairman are as follows, contained in a memorandum to Hon. J. D. Reid, Minister of Railways, dated June 22, 1920:—

### Offer for Electric Lines.

"'I have discussed with the members of the Ontario Government the question of purchasing the three electric railways in Ontario owned by the Canadian National Rys., viz., the Toronto Eastern Ry., the Toronto Suburban Ry., and the Niagara, St. Catharines & Toronto Ry. I informed them of the discussion with the sub-committee of the Dominion Cabinet when last in Ottawa, and advised them that I was prepared to recommend the taking over of the said electric railways on the following terms:—

"'Toronto Eastern Ry.—Price, $706,000, payable by Hydro Power Commission 4½% 50-year bonds, guaranteed by Province of Ontario.

"'Toronto Suburban Ry.—On this railway there are $2,628,000 of outstanding 4½% bonds due 1961. This is to be taken over by the Hydro Power Commission, the Commission to assume the bonds.

"'Niagara, St. Catharines & Toronto Ry.—Price for this railway to be $3,544,374.10. On this road there are $1,098,000 5% bonds due 1929. The Hydro Power Commission will assume these bonds, and give Hydro Power Commission bonds guaranteed by the Province of Ontario, 4½% 50-year bonds for the difference between $1,098,000 and $3,544,374.10.

"'It was understood in the discussion with the sub-committee of the Dominion Cabinet that the Toronto Suburban Ry. and the Niagara, St. Catharines & Toronto Ry. must be taken together.

"'I understand a meeting of the Ontario Government will be held tomorrow, and may I ask that you authorize me to say the Dominion Government are prepared to accept this offer?

"'It is understood if the Hydro Power Commission take over these radials railways on behalf of the municipalities it is one of the conditions, in view of the above agreement as to price, that an exclusive traffic agreement will be made for all traffic between the above electric railways and the Canadian National Government-owned railways.'"

Following is the balance of Sir Adam Beck's statement to the public in this connection:—

"In the case of the Toronto Eastern Ry., the municipalities voted in favor of acquiring and extending the railway in the fall of 1919, and have executed their agreements for the acquiring and extension of this property. It covers the district between Toronto and Bowmanville, 45 miles in length.

"The Toronto Suburban Ry. is constructed and operated in the district between Toronto and Georgetown, Guelph, Toronto, Weston and Woodbridge, and within the limits of the city of Toronto, and is 64 miles in length. The municipality of Brampton, in this district, has expressed its desire for a connection with the Toronto Suburban and Toronto. The acquiring of the Toronto Suburban will eliminate the necessity of constructing the line between Port Credit and Guelph, as a part of the Toronto-to-London line, as the Toronto Suburban will provide the service to Guelph and will connect with the Toronto and Hamilton line at or near the Humber.

"The Niagara, St. Catharines & Toronto Ry. operate approximately 81 miles of railway in the Niagara Peninsula, between St. Catharines and Niagara Falls; St. Catharines, Thorold, Welland and Port Colborne; St. Catharines and Niagara-on-the-Lake, and St. Catharines and Port Dalhousie.

"Under the proposed agreement and recommendation for the acquiring of the above electric railways from the Dominion Government the arrangement for financing is similar to that adopted by the Commission in the acquiring of the Sandwich, Windsor & Amherstburg Ry. from the Detroit United Rys. and the Guelph Radial Ry. from the city of Guelph.

"The only money required by the Commission for the equipment, construction and operation of electric railways under contemplation for 1920 will be approximately $1,000,000, and for 1921, $2,500,000, as the Commission does not intend to make any unnecessary expenditure on account of radial railway construction until the cost of labor and material will warrant.

"The Hydro Electric Power Commission at its meeting today approved the recommendations and offer of the Dominion Government, and issued instructions that application be made to the Ontario Government for an order in council authorizing the submission of agreements and bylaws by the municipalities interested in the districts covered by the above mentioned lines.

"The municipalities interested are as follows:—

"Toronto Suburban Ry.—Townships of Etobicoke, Vaughan, Toronto, Chinguacousy, Esquesing, Nassagaweya, Eramosa, Puslinch, Guelph; villages of Woodbridge, Georgetown, Acton; towns of Weston, Brampton; cities of Toronto, Guelph.

"Niagara, St. Catharines & Toronto Ry.—Townships of Niagara, Grantham, Stamford, Louth, Thorold, Pelham, Crowland, Humberstone; villages of Port Dalhousie, Humberstone; towns of Niagara, Merritton, Thorold, Port Colborne; cities of St. Catharines, Niagara Falls, Welland."

### The Ontario Government Refuses the Commission's Request.

Hon. E. C. Drury, Premier of Ontario, wrote Sir Adam Beck on July 6 as follows:—"In reply to the communication from the Hydro Electric Commission regarding the Toronto Suburban Ry. and the acquiring of the Niagara, St. Catharines & Toronto Ry., I beg to say, that the Government has given this matter its very full and careful consideration, and has decided, for the reasons set forth in the accompanying memorandum, to defer action in regard to the acquisition of these roads until such time as we have

### Canadian Electric Railway Association.

**Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.**

**Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.**

**President, A. Gaboury, Superintendent, Montreal Tramways Co.**

**Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.**

**Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.**

**Executive Committee, The President, Vice President, and F. D. Burpee, Manager, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.**

**Official Organ—Canadian Railway and Marine World, Toronto.**

satisfied ourselves by means of a thorough enquiry, as to the advisability of going on with this project. Meanwhile, we would request that pending the result of such enquiries further expenditure on these roads be not gone on with. This action is taken, I beg to assure you, not because of any feeling of lack of confidence in either hydro electric projects in general or in the Hydro Electric Commission, but because the Government, being responsible to the people of Ontario, feels that it should employ every means to fully inform itself of the feasibility and advisability of these great projects. The enquiry will be pushed with all possible speed so as to avoid every unnecessary delay should the Government finally decide to proceed with the project."

The following memorandum accompanied Mr. Drury's letter to Sir Adam Beck:—"While the Government realizes the importance of rapid and economic transportation and is much impressed by the case presented by Sir Adam Beck and the municipalities, it cannot disregard the many and serious problems involved in the proposals now presented for the purchase and construction of hydro radial railways under government guarantees, and having now reached a conclusion as to the action it ought to take in the matter, it conceives it to be its duty to give reasons for the course it proposes to follow.

"Under the provisions of the Hydro Electric Railway Act, 1914, and amendments thereto, the Commission is authorized to enter upon the construction (or purchase) and operation of electric railway lines when the municipalities interested shall, in respect of any proposed line, have signed agreements containing terms and conditions laid down by the act, and deposited with the Commission debentures as to the amount of their respective shares of the costs of construction and equipment of the line. The Commission then issues its own bonds, guaranteed by the Lieutenant-Governor in council. The bonds thus issued and sold are to all intents and purposes the bonds of the province.

**Lines Under Commission's Operation.** "The only railways now being operated under this legislation are the Sandwich, Windsor & Amherstburg Ry. and the Windsor & Tecumseh Ry. These railways run from Tecumseh to Amherstburg, through Ford City, Walkerville, Windsor, Ojibway and Sandwich, about 25 miles. They were acquired early this year by the Hydro Electric Power Commission for $2,039,000, which was paid by the issue of 40-year bonds of the Commission guaranteed by the province. The report of the Commission for 1919, referring to these lines, states that 'the estimates indicate that some $250,000 will have to be spent to bring them into fair operating shape.'

"The Hydro Electric Power Commission is also operating the Peterborough St. Ry., which was purchased by the province in 1916 along with the Seymour Power System. In the report of the Hydro Electric Power Commission for 1919 there is this statement: 'It was found that the service given was much better than supplied any other city of corresponding size, and that the revenue was really not sufficient to cover all legitimate charges.' In his report of last March respecting the Hydro Electric Power Commission, Mr. Clarkson states that this road showed losses in 1918 and 1919. These are the only street railways at present operated by the Commission. The London & Port Stanley line is owned by the City of London and operated by a local commission..

**Lines Proposed To Be Bought.**—"The scheme now submitted for the approval of the Government covers the following lines to be built or acquired from the Dominion Government:—

"1. Toronto, Port Credit, St. Catharines line—Estimated cost of construction as revised by W. S. Murray, consulting engineer, New York, and brought down to date, $22,298,635.

"2. Toronto Eastern Ry., Toronto to Pickering, Whitby, Oshawa and Bowmanville—Estimated cost of construction, including right of way and partial grading to be acquired from Dominion Government at a cost of $706,000 (estimates made in Sept., 1919), $8,360,794.

"3. Hamilton, Galt, Guelph, Elmira Line—Estimated cost of construction, esmates made Nov., 1919, $6,530,659.

"4. Port Credit to London line—Estimated cost of construction, estimates made in 1916, $8,499,769.

"5. Toronto Suburban line, Toronto to Woodbridge and Toronto to Guelph.

"6. Niagara and St. Catharines line, Niagara Falls, St. Catharines and Port Colborne.

"These two systems to be acquired from the Dominion Government at a cost of $6,170,374.

"This makes a total of $51,780,231.

"It is suggesated that the Toronto to Guelph link of the Toronto Suburban system may be substituted for the Port Credit to Guelph link of the Port Credit to London line, and that this would mean a saving of about $2,000,000 for construction expense, so that approximately the estimated cost of the proposed lines to be built or purchased is, in round figures, $50,000,000.

"Sir Adam Beck has furnished to the Government the following memorandum with reference to the proposals now under consideration:—

" 'Toronto-Port Credit-St. Catharines Ry.—Reports and estimates were submitted in 1915 to the municipalities between Toronto and Port Credit re the construction and operation of this section as a part of the Toronto to London line; bylaws were submitted in Jan., 1916, and for the section between Port Credit and St. Catharines, in 1917 and 1919, and were passed by large majorities. Fifteen municipalities have executed agreements with the Commission, authorizing the procedure with this work, and assuming the responsibility for the railway and its operation between Port Credit and St. Catharines, and have deposited with the Commission debentures for the full amount; the Commission has issued bonds to the extent of $11,360,363, all of which have been guaranteed by the province. A great part of the engineering work has been completed in the final survey of these sections of the Toronto-Port Credit-St. Catharines Ry. and right of way purchased between Toronto and St. Catharines to the value of $800,000.

" 'Toronto Eastern Railway. — In May, 1919, some 10 municipalities in this district passed resolutions, requesting the Commission to negotiate on their behalf for the acquiring of the properties owned by the Toronto Eastern Ry., and to prepare reports on the completion of its construction and its extension to Toronto. An option on the property was obtained by the Commission; bylaws were submitted to 10 municipalities from Oct. 1919, to Jan. 1, 1920, under the Hydro Electric Railway Act, all passing with large majorities, for the acquiring and completion of construction of this section of the hydro electric railways. The municipalities have all executed agreements, authorizing the Commission to proceed with this work. A number of municipalities have passed the necessary bylaws for the issue of debentures to be deposited with the Commission.

" 'Hamilton-Galt-Elmira - Guelph Electric Ry.—On Jan. 1, 1920, bylaws under the Hydro Electric Railway Act were submitted to 14 out of 17 municipalities in this district, and, of those, 13 municipalities carried with large majorities, while 3 have still to be submitted to the electors. The Commission has been able to obtain a credit of $1,000,000 in the bank by placing some of its bonds of the Toronto-Port Credit-St. Catharines line as collateral, and this amount it is believed will be sufficient for the present year in the purchasing of right of way, the engineering and the preparation of the right of way, for commencement of operations when conditions warrant.

" 'The contemplated work for 1921, provided conditions remain as at present, will require an expenditure of approximately $2,500,000. It is the intention of the Commission to proceed with the work of constructing electric railways only to such extent and as rapidly as conditions as to revenues and the cost of materials and labor will warrant.

" 'With reference to the negotiations of the Commission with the Dominion Government, the Commission has an option on the Toronto Eastern Ry. for $706,000, for which amount the Government is prepared to accept the bonds of the Commission, for 50 years, at 4½%.

" 'The Commission has also received an offer from the Minister of Railways and Canals for the sale of the Toronto Suburban Ry., at present operating between Toronto and Guelph, and the Niagara, St. Catharines & Toronto Ry., operating in the district between St. Catharines to Niagara Falls, St. Catharines to Welland and Port Colborne, Port Dalhousie and Niagara-on-the-Lake, for which the Minister of Railways and Canals is prepared to recommend to the Dominion Government the acceptance, in payment therefor, of the Commission's bonds for 50 years at 4%.'

"Sir Adam has also furnished the following memorandum (condensed), which gives further useful information with respect to the lines which it is proposed to acquire from the Dominion Government:—

" 'The Toronto Eastern Ry. was designed to give a passenger and express service between Toronto and towns east thereof as far as Bowmanville, together with a freight service, working in conjunction with the Canadian Northern (now Canadian National) service. Owing to the physical characteristics of the district, the G.T.R. runs about two miles south of Whitby, Oshawa, and Bowmanville, while the Canadian Northern is, generally speaking, about the same distance north. These three towns are developing industries of importance; especially is this true of Oshawa, which is now the largest shipping point between Montreal and Toronto. With an hourly passenger service on a line of this nature, the traffic would naturally go to the electric line, on account of the frequency of service, just in the same manner as the Metropolitan Division of the Toronto & York Radial Ry. eliminated the passenger service on the G.T.R. between Toronto and towns as far north as Newmarket. There would be considerable intertown traffic due to the indus-

trial growth of Oshawa. The growth of the city eastward would be facilitated and encouraged by such a service. Unquestionably there would be a suburban business develop eastward that does not now exist, and steam lines would be largely relieved of local traffic within this zone.

" 'The eastern terminus of this line is the eastern boundary of the town of Bowmanville. It runs through the town along Wellington St., a short block north of the main business street (Kingston Road). The line from Bowmanville to Oshawa, nine miles, is almost a straight line, keeping close to the Kingston Road, as this is the principal highway along which traffic passes in the district. The line passes through Oshawa along Bond St., again a short block north of the Kingston Road. From Oshawa to Whitby, 4½ miles, the line keeps as close as possible to the Kingston Road, and passes through Whitby along Mary St., a block north of the Kingston Road. From Whitby to Pickering, six miles, the line is still adjacent to the Kingston Road. From this point to the Scarboro Golf Club, eight miles, the line goes south of the Kingston Road and, at some points, is adjacent to the G.T.R. From this point a location was proposed westward to a junction with the Canadian Northern tracks near the Kennedy Road, and from there down the East Don to a terminal at Queen St.

" 'The work completed consists of a portion from the eastern limit of the town of Bowmanville, through Bowmanville, Oshawa and Whitby. The portion on the streets through these towns is laid with 80 lb. steel, and between towns 60 lb., with continuous angle bars. This track is all ballasted and was left in first class shape. From the western limit of Whitby to Pickering the line was graded, but no track was done. From Pickering to the Scarboro Golf Club the major portion of the right of way was acquired, but nothing further was done between these points.

" 'The Niagara, St. Catharines & Toronto Ry. consists of the following lines: Main line, Port Dalhousie to Niagara Falls, 16.74 miles; Welland Division, Thorold to Port Colborne, 18.53 miles; Lake Shore Division, St. Catharines to Niagara-on-the-Lake, 12.18 miles; St. Catharines local lines, 9.59 miles; Niagara Falls local lines, 4.63 miles. Total, 61.67 miles. The line operates both a freight and passenger business, the latter consisting of a regular interurban service, together with a local street railway service in the cities of St. Catharines and Niagara Falls. The district served is a very important one industrially, as it has many large pulp and paper plants. Steel, electrical and chemical plants of magnitude are also located there. The Niagara, St. Catharines & Toronto Ry. serves almost all the industries of the district—a very large proportion exclusively. Following are operating statistics:—

| Year. | Gross revenue. | Expenses. | Net revenue. |
|---|---|---|---|
| 1918 ..... | $ 940,407.21 | $699,380.87 | $241,026.34 |
| 1919 ..... | 1,030,756.32 | 796,349.83 | 234,306.49 |

" 'The **Toronto Suburban Ry.** consists of the following:—Main line, local city line, 10.45 miles; Weston to Woodbridge, 7.50 miles; Lambton to Guelph, 46.325 miles. Following are the operating statistics:—

| | Fiscal 1918. | Calendar 1918. | Calendar 1919. | Calendar Est. 1920. |
|---|---|---|---|---|
| Revenue— | $277,413 | $314,167 | $394,514 | $545,000 |
| Expenses— | 224,213 | 276,107 | 352,472 | 392,000 |
| Net earnings— | 53,200 | 36,050 | 42,042 | 153,000 |

" 'The estimates for 1920 conditions are based on increasing (1) service on Guelph Division from three to eight round trips a day; (2) passenger rates, from 2 to 2⅞c. a mile; (3) wage schedule, to pay from 46 to 50c. per hour; (4) increase equipment for local and through service and to prepare for freight which is not being handled at present.'

**The Government's Pronouncement.** — The Government's memorandum contains:—"The broad question of policy is now up for determination. Shall this Government adopt the principle of publicly-owned and operated radial railway systems for the province as a whole, and proceed energetically through the Hydro Electric Power Commission, as conditions may warrant, with the construction (or acquisition) and operation of such a system? The answer involves many considerations. In 1908, before hydro development started, the direct debt of the province was $17,250,000, with an indirect liability on guaranteed bonds to the amount of approximately $8,250,000, making a total debt, direct and indirect, of between $25,000,000 and $26,000,000. Today the direct debt of the province amounts to $104,000,000, while its indirect debts amount to about $21,000,000. The credit of the province, therefore, stands pledged at present for the repayment of $125,000,000.

"To date the province has advanced approximately $56,750,000 to the Hydro Electric Commission, and in connection with the Central Ontario system, owned by the province. In addition to such advances, it has guaranteed bonds for $8,326,000 in connection with the purchase by the Commission of the Ontario power system and certain minor systems. This means that of the obligations of the province now outstanding approximately $65,000,000, or 52% of its present debt, is represented by assistance to the Hydro Electric Commission. The obligations of the province are not, however, limited to the moneys and guarantees which it has already given, but, so far as can be estimated, it will in the near future have to supply between $32,000,000 and $33,000,000 more in cash to complete the Chippawa, Nipigon and other electrical power work in process of construction; $3,000,000 to $4,000,000 may also have to be advanced for the proposed auxiliary steam plant authorized at the last session of the Legislature. In 1921 bonds of the Ontario Power Co. (owned by the Commission) to the amount of about $2,500,000 will fall due, and the province will undoubtedly have to render assistance by way of cash or guarantees to meet them. In this way the province is practically committed to advance between $37,000,000 and $40,000,000 more to the Commission in connection with its power projects within the next year or two, and if the cost of completing the Chippawa works should exceed the present estimate of $45,000,000 the amount will have to be still further increased.

"From the above it will be seen that with the completion of the Chippawa works and the construction of the proposed auxiliary steam plant the advances already made by the province, those which will have to be made in the near future, and the guarantees given and to be given, will amount to between $103,000,000 and $104,000,000, all in connection with the power development, transmission and distribution systems controlled and operated by the Commission. These amounts the province and the municipalities are bound to repay. The outcome of the Chippawa projects is awaited with deep interest and much expectation by the people of Ontario, for the scheme has become so extensive and costly that the Province, providing as it is doing, all the moneys for its construction, is most vitally interested in its successful completion and operation. The exact effect of the Chippawa development, in so far as the cost of power developed by it and the burden to be assumed by the municipalities in connection with it are concerned, cannot be definitely determined until the works are completed, but the Government rests confident in the belief that the municipalities will continue to be able to pay, with advantage and without embarrassment to them, such prices for hydro as will permit repayment of the $104,000,000 before mentioned to be made over the sinking fund period. The necessity of raising $38,000,000 to complete the works and for other purposes of the Commission, is so far as the province is concerned, however, a very heavy burden, particularly when the province has to raise other large amounts of money in connection with its highway development and other requirements.

"**Hydro radial projects**, while they may to some degree facilitate the distribution of power as incidental to the operation of the railways, are entirely new and separate from the main object and scheme of the Commission and with the enormous amounts involved in their construction must be considered on their merits and to a large extent independently and separately from the hydro electric power project. Radial railway projects with high power and high speed lines are, so far as Canada is concerned, practically a new field of enterprise. It is true that there are certain radial lines in the province, but it would hardly be fair to judge the merits of the projected new scheme on the basis of the experience of the lines now in operation. If that were done, the outlook would not be encouraging. On the other hand, there are many high speed lines in operation in the United States, constructed at much less cost than is possible at present, and if current report is to be accepted, many of them are now meeting difficulties in continuing their operation, by reason of greatly increased costs. The experience of these lines, if fully investigated, would undoubtedly furnish some basis for measuring the probable revenue and costs of operation of the projected hydro radials.

"There has been a considerable amount of general discussion on the subject of radials, and municipalities, which the suggested lines are proposed to serve, have considered the matter and signified their wishes in respect thereto. There has, however, been practically no publicity given to the exact details of construction costs, operating expenses and expected revenue, or as to the fares or rates to be charged in the light of increased costs and other changes since the termination of war. Since estimates were presented for the consideration of the municipalities, the Dominion has taken over the Grand Trunk Ry. and the Canadian Northern Ry., and these railways, being now owned by the Dominion Government, their cost of operation has to be paid by the public. The effect of this situation was not before the municipalities at the time when several of the radial projects were voted upon. Neither had the present system of public highways for the province been adopted at the time when the municipalities voted on the bylaws and the effect of these highways when constructed when the expected revenues of the radials has not been publicly investigated or discussed.

"So far as the Government is concerned no information has been put before it which is at all sufficient to permit it to form any reasonable opinion as to the correctness of the estimates put before the municipalities or the probability that the projected railways will have earnings sufficient to make them self supporting. Some of the estimates, moreover, were not made very recently and it is beyond question that they would have to be increased if construction were proceeded with at once. This view is borne out by the report of W. S. Murray, consulting engineer, New York, who was employed by the Hydro Electric Commission to report on the present proposals, in which he gives the revised up to date estimated costs of the Toronto-St. Catharines Ry.—with added equipment and possibly some extensions—as $22,298,635, as compared with (so far as can be figured) $16,594,749, reported to the municipalities, an increase of about 33 1/3%.

Ontario's Obligations. — "With the debt of the province now $104,000,000 and the Government under obligation to raise $37,000,000 to $40,000,000 more to complete the power development works now under construction, it is estimated by Government auditors that with its other obligations and commitments the debt of the province will within two years amount to $160,000,000 or more. If the radial scheme is gone on with, and kept strictly limited (which would be practically impossible) to the lines above mentioned the obligations of the province will approximate $210,000,000. Should the radial scheme be extended, say from London to Sarnia and Windsor and from Bowmanville to Kingston, and otherwise as municipalities from time to time request, and as is to be expected—once the scheme is fairly started, the debt would, it is estimated, be still further increased by at least $50,000,000, or to a sum more than ten times the whole debt of the province in 1908. The Government is further advised that there is no certainty that the province could raise the moneys necessary to finance such a scheme. But assuming that the money could be borrowed, it is pointed out that the annual interest charges would be almost equal to the total direct debt of the province in 1908, and that the finances of the province would be seriously crippled, and great confusion and hardship created for the municipalities if the scheme were not to meet the expectations of its promoters.

"The province must not, of course, come into competition with the Canadian National Ry. System. That system showed a deficit last year of $47,000,000, and it is estimated that for some years to come deficits on railway operation by the Dominion will run from $30,000,000 to $50,000,000. These deficits must be provided by taxation, of which the Province of Ontario will pay somewhere between one-third and one-half. Moreover, there is the general question of the national debt of Canada, and of the taxes which must be raised for Dominion purposes. The debt of Canada is now $2,000,000,000, or six times what it was in 1914. The annual expenditure of Canada before the war was between $170,000,000 and $175,000,000. The main estimates for this year total $500,000,000, not including any allowance for demobilization, and independent of supplementary estimates, which will increase the amount. In other words, Canada's expenditure this year will be more than one-third more than the entire national debt of 1914. This Government is satisfied that the Dominion has resources abundantly ample to take care of every obligation, but the magnitude of the debt, and the vast amount that must be annually raised in Ontario to take care of its proportion of Dominion taxation, are elements in the situation that cannot be overlooked when the province is asked to take on further burdens. The province must be assured that the new scheme will be at least self supporting.

"It is contended by representatives of certain of the municipalities to be served by the projected roads, that the covenant of the municipality relieves the Government of responsibility. If the municipalities were required to furnish the moneys for the construction of the roads this might to a large degree be true, but the fact is that the municipalities look to the province to supply all the money required. This being the case, it will be realized that the Government has a responsibility not only to the municipalities to be served, but to the people of the province at large whose credit must be pledged for every dollar that is advanced to the Commission.

"Under the above circumstances and in view of the serious results to the province, no less than to the municipalities, which would follow if the radial scheme after adoption and the assumption of a liability of many millions of dollars were to fail to be self supporting, the Government is clearly of the opinion that it would be doing less than its duty to the people if it were to sanction the scheme until such time as it has been fully and completely investigated in a thorough and public manner and careful consideration given to all the facts of the case.

Objections to Hydro Radials. — "Besides the points already discussed the following objections to the policy involved in the proposals appear to be worthy of careful consideration:—

"1. In the districts served by hydro electric power there is now a considerable shortage of power for industrial purposes. This is an especially serious matter for the province. The completion of the Chippawa development, and the installation of an auxiliary steam plant, will no doubt relieve this situation, but the date of the completion of the Chippawa works is uncertain and the surplus of power that will then be available above industrial needs is a matter of conjecture.

"2. The present radials in Canada were practically all constructed when the cost of construction was very much lower than it is at present. It would appear from the statistics that many of these radials have failed to pay. It would seem probable that it will be much more difficult to make the proposed hydro radials pay with their much higher cost of construction.

"3. It is said that the experience in electric railways in the United States has been for several years financially unsatisfactory and that the municipalities would find it difficult, if not impossible to float bonds for the projected roads, unless with the guarantee of the Government.

"4. For all medium and short distances it is alleged that a system of good roads, upon which motor trucks could carry freight, will serve the public better than electric railways, because the truck is not limited to a fixed immovable track and definite stations for receiving and delivery but can go wherever the business requires. The province is already committed to a good roads policy involving a large expenditure.

"5. It is probable that every few years new bond issues would have to be made to pay for additional rolling stock, new sidings, double tracks and many other betterments. This would mean in the case of the present proposals additional financing on a considerable scale from time to time in the early future. The roads, which it is proposed to acquire from the Dominion Government are said to be in great need of betterments at the present moment.

"6. It is fairly open to question whether to the great responsibilities now carried by the Hydro Electric Power Commission in connection with the production and distribution of electric power (including the Chippawa scheme) there ought to be added the responsibilities and the great burden of detail of a province-wide system of radial railways.

"The attention of the Government is also directed to certain details of the specific proposals as follows:—

"1. As regard the proposed purchase from the Dominion Government of the Toronto Suburban Ry., and the Niagara, St. Catharines & Toronto Ry., it is to be noted that the various municipalities along the route of these railways have not yet passed bylaws to guarantee their respective shares of the necessary debentures.

"2. The estimates for the projected radials in each case show a small surplus on a year's operation. The attention of the Government is, however, called to the fact that interest on the necessary debentures is calculated at 5%. It is clear that such debentures will have to bear an interest rate of at least 6%. This increase in the interest rate alone turns every estimated surplus, except one, into a deficit. In the one exception the estimated surplus is reduced to $11,038.

"3. It is proposed to issue the debentures for the cost of construction for 50 years. There is no allowance in the estimates for depreciation, renewals or sinking fund, except in the case of the Toronto, Port Credit & London Ry., where $137,342 is allowed for sinking fund. The rolling stock, electric equipment and tracks would have to be renewed at least once within the 50 years, and some parts perhaps twice. Making the proper allowance for sinking fund and depreciation will also turn the small estimated surpluses into large deficits. In any event it is not good financing to make no allowance for sinking fund renewals or depreciation.

"4. It is said that the estimated operating expenses are calculated on a low basis. The percentage of the operating expenses to earnings per mile of all the other radials in Ontario, including the London & Port Stanley Ry., is, however, considerably greater than the estimated operating expenses of the proposed lines.

"5. The estimated earnings of two of the proposed radials, taken on a mileage basis, are also greatly in excess of those of any existing radial in Ontario, including the London & Port Stanley Ry.

"6. The estimates given for all the proposed radials are in bulk, that is to say, a lump sum is given in each case as the cost of construction, a lump sum as the annual cost of operation, and a lump sum as the annual earnings. It would be most desirable to have all these estimates in detail. Many questions arise which cannot be determined when the estimates are given in bulk. For instance, how many employes is it estimated will be required, and what is the rate of wage in each classification proposed to be paid them? Also, what rates for passengers

and freight are proposed to be charged? Under the Ontario Railway Act 2c. a mile is the maximum passenger rate, but it would appear that the estimated earnings for the proposed radials are based on a higher rate than this.

"7. With reference to the railways which it is proposed to purchase from the Government, it would not appear to be wise to complete such purchase without first having had a thorough examination and valuation by some independent person or body.

**Commission to be Appointed.**—"Some of the foregoing arguments may not be valid and none of them may be conclusive against the ultimate adoption of the proposals. They are, however, as it appears to the Government, conclusive against their adoption at the present time and until the whole subject has been fully and exhaustively examined, because, if and when the Government goes ahead, the province will be committed not only to the present proposals but to a province-wide, publicly owned radial electric scheme operated by the Hydro Electric Power Commission, involving an ultimate mortgage of the province and of the municipalities interested of scores of millions of dollars. The matter is of far too great importance to be dealt with hastily or lightly. The Government has therefore decided to appoint a commission to go into the whole problem from every point of view and present a report for its information and guidance. The commission will be requested to proceed immediately with its task, to hold public enquiries and to report without unnecessary delay. In the meantime all action in the direction of further outlays or the assumption of further responsibilities in radial matters by the Hydro Electric Commission will be stayed."

### Sir Adam Beck's Rejoinder.

In making public the Premier's letter and memorandum, which he said would be of interest to the municipalities concerned, Sir Adam Beck added:—"It is necessary, to a proper understanding of the present situation, and of the need for the speedy decision promised by the Prime Minister, to remember that important commitments have already been made on behalf of the Government and the municipalities, whose debentures are on deposit with the Hydro Power Commission, to the extent of almost $13,500,000. These debentures are a guarantee against bonds issued by the Commission for municipal radial railway purposes. Work inaugurated includes extensive acquisition of right of way costing over a million dollars. The commitments made by the present Government embrace the following:—

"1. The Government validated and made legal and binding on the Commission the agreements for the construction and operation of electric railways and guaranteed the bonds on the Sandwich, Amherstburg and Essex district railway to the amount of $2,100,000.

"2. Validated agreements and made them legal and binding on the Commission and municipalities for the construction and operation of the Toronto Eastern Ry. to the amount of $8,360,736.

"3. Endorsed the bonds of the Port Credit to St. Catharines section to the extent of $11,360,000.

"4. Enacted legislation legalizing the construction of the Toronto and Port Credit section to the extent of $7,536,000.

"In all, it has dealt with expenditures on account of hydro electric railways to the extent of $29,446,736. The Hydro Electric Power Commission has made application for the following additional commitments on behalf of the municipalities interested:—

"1. Order in council for authority for municipalities in the Niagara, St. Catharines & Toronto Ry. district to submit bylaws and guarantee bonds for $2,862,000."

"2. Order in council for authority for municipalities in Toronto Suburban Ry. district to submit bylaws and guarantee of bonds for $197,000.

"3. Guarantee of bonds to be handed the Dominion Government for acquiring the Toronto Eastern Ry. properties for $706,000.

"This makes a total of $3,915,000. The Commission has committed itself to expend not more than $1,000,000 in 1920, and $2,500,000 in 1921 on improvements and equipment and the purchase of additional right of way.

"The Sandwich, Windsor & Amherstburg Ry., comprising 48 miles, is already under successful operation by officers of the Commission on behalf of the municipalities interested. The right of way for the Toronto-St. Catharines line has been acquired to the extent of 80% of its total length."

### Appointment of Investigating Commission.

On July 15 it was announced that the government had appointed a commission, its duties being defined as follows:

1. To enquire into and report upon the whole question of hydro electric railways and all matters which in the opinion of the commissioners are relevant thereto, with particular reference to the matters that are raised by and discussed in the government's statement issued on July 9.

2. To make such suggestions and recommendations in connection with or arising out of any of the subjects thus indicated as in the opinion of the said commission may be desirable.

That for such purposes the said commissioners be authorized and instructed to take such steps for the acquirement of information as may be in their opinion necessary.

The commission as appointed originally consisted of Hon. Justice R. Y. Sutherland of the Ontario Supreme Court's High Court Division; W. A. Amos, Vice President United Farmers of Ontario, Palmerston; Fred. Bancroft, who is a member of the Pattern Makers Union, and a reporter on the Toronto Star; A. F. Macallum, B.A.Sc., C.E., City Commissioner of Works, Ottawa, and T. A. Russell, President Russell Motor Car Co., Toronto. A few days later Mr. Russell declined to act, owing to his position as a motor manufacturer having been criticised, and Brig. General C. H. Mitchell, C.M.G., D.S.O., Dean of Toronto University's Applied Science Faculty, was appointed in his place. At a preliminary meeting of the commissioners June 19, at which only three were present, it was stated that the Attorney General had authorized the Hydro Electric Power Commission and the Hydro Electric Railway Association to engage counsel at the government's expense.

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The Montreal Tramways Co. has not, according to a press report, paid anything to the city on account of the $500,000 a year which it was to pay out of its gross revenues under the contract of Jan. 1918. The amount now owing is $1,250,000, on which the company pays interest. It is reported that the Montreal Administrative Commission is not insisting on payment, fearing that if it did a further increase in fares might result.

## Toronto Railway Asks Postponement of Payment of City Percentage.

The Toronto Railway's General Manager wrote the Mayor of Toronto July 13, as follows:—"Under the street railway agreement the company pays the city a graded scale of percentage on its gross earnings, which is paid in monthly instalments on the first of each month, and which have been regularly paid by the company during the term of its franchise. Owing to the excessive increases in wages and material, the company now finds that under the present rates of fare it cannot meet its obligations promptly and pay the percentages monthly as in the past, and respectfully requests the indulgence of the city to allow the payments, or such part of them as the company may require, to be deferred until the end of the franchise, so as to enable the company to meet the pay rolls, ordinary expenses of the company and other obligations, on the understanding that the accumulated percentages owing to the city will be a first charge on the company's assets, to be deducted out of the award of the arbitrators when the company is being taken over by the city on Sept. 1, 1921. Perhaps it would simplify the proposition were the company to meet its monthly obligations by giving notes, payable at such dates as would be agreeable to the city. In this connection, whatever will meet the approval of the City Solicitor would be satisfactory to the company. This request would not be made were it not for the fact that the company's pay rolls, commencing July 1, will be about $2,000,000 a year more than the pay rolls of 13 months ago, this being the increase in wages during that time. I sincerely hope the council will see its way clear to comply with the company's wish in the above request, and by doing so the city will not be running the slightest risk of losing one cent, while it will be helping the company over a very trying period."

The letter was referred to the City Solicitor for advice.

## New England Street Railway Club Visits Montreal.

A party of about 80 members of the New England Street Railway Club left Boston, Mass., June 28, for a trip to Montreal. En route the party was increased by members of the New York Electric Railway Association, who were returning from a convention at Bluff Point, N.Y., and by electric railway men joining at the points between Boston and Montreal. On June 29 the party was taken on a sightseeing trip round the city by the Montreal Tramways Co., visits being paid to the company's stations and shops. A luncheon was served at the Pointe aux Trembles substation, A. Gaboury, Superintendent, acting as host for the company. In the evening the party was entertained by the company at dinner, at which speeches were made by E. A. Robert, President, Lt. Col. J. E. Hutcheson, General Manager, and a number of the visitors. The Montreal Harbor Commissioners provided a tug for the party for a trip round the harbor on July 30, and they left Montreal on the return trip the same evening.

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The Hamilton St. Ry. started on July 11 an extra Sunday service between 8.30 and 10 a.m., to suit the steamboat traffic.

# Three Rivers Traction Co's One-Man Cars.

The Three Rivers Traction Co., Three Rivers, Que., has added to its equipment recently 4 one-man cars, an illustration of one of which is given herewith. The general dimensions are as follows:—

| | |
|---|---|
| Length of body | 21 ft. |
| Length of front vestibule | 6 ft. 2 in. |
| Length of rear vestibule | 4 ft. |
| Length over bumpers | 32 ft. 2 in. |
| Width of car bumper | 8 ft. 6 in. |
| Seating capacity | 36 persons |

The car bodies are of semi-convertible type, wood construction, built specially for one-man nearside operation and single end control. The sides are straight, and sheeted vertically with narrow t. and g. poplar sheeting. There are 8 double sash windows on each side of the body, the top sash being made stationary and the bottom sash made to raise to open.

The roof is of arch type, with exhaust ventilators and adjustable grids on the interior on each side, also one in front vestibule. The underframe is of composite construction, having wood sills, reinforced with steel plates, which are rivetted to cross sills, to form a complete steel frame. The flooring is ⅞ in. thick t. and g. hard yellow pine, covered with hardwood floor matting laid lengthwise in the aisle.

Three Rivers Traction Co.'s One-Man Car.

The interior trimming is red cherry, with no bulkheads at either end. The front vestibule is made extra long, and step opening extra wide, so that entrance and exit can be made by it. Each opening has an individual folding door and step operated by the National Pneumatic Co.'s air engine, so arranged that the motorman can operate them singly. The vestibule is equipped with brass p.a.y.e. rail dividing entrance and exit, also motorman. A fare box is attached to the entrance rail, with a light arranged to illuminate the box without a glare in the motorman's eyes. The rear vestibule is circular, with an emergency exit door, controlled by the motorman from his position in the front vestibule. There is a circular seat, which accommodates five passengers, running around the rear vestibule. The seats are the builder's standard stationary type, covered with twill weave rattan and brass grab handle on back. The curtains are pantasote, mounted on metal rollers. Sanitary hand straps are provided at the longitudinal seats, 9 in all.

There is a buzzer equipment with button, and current procured from trolley. There are 10 cross seat heaters per car, with one in the front vestibule, which are connected to a thermostatic control, a most important development of recent years. The thermostat never allows more current to be used by the heaters than is necessary to bring the car up to the required temperature. When that temperature has been reached, the current is automatically cut off. The thermostat takes the control of the heating equipment out of the motorman's hands.

The lighting system is arranged with 5 lights in the body of the car, using the compensating series lamp fixture with reflectors. Lights over doors, sign and farebox are arranged with 6 lights on a circuit controlled by a lintern switch, which solves the problem of the dead circuit of lights. When one light burns out, the sixth lamp takes the place of the burnout by the simple turning of a knob until the lamp lights. The selector switch "feels" for the break in the circuit and automatically remedies it. The correction is almost instantaneous.

The cars are mounted on radiax trucks, 12 ft. wheel base with 33 in. Davis cast steel wheels and 4½ in. hot rolled axles.

Each car is equipped with 2 Westinghouse 101-B-2 motors, with K-10 controller, and Westinghouse schedule S-M-1 straight air brake equipment, H.B. life guards, an Ideal troller catcher, and snow scrapers.

## Change of Rule of Road in British Columbia.

An act passed by the British Columbia Legislature at its last session, to amend the Highway Act, Revised Statutes, 1911, provides for the repeal of secs. 17, 18 and 19, which deal with the rule of the road. Three new sections, similarly numbered, are enacted, which reverse the rule of the road hitherto in operation in the province, and make the new rule conform to that generally in force elsewhere in Canada. The act divides the province into two areas, viz.: Traffic District 1, including Vancouver Island, the other islands and the mainland lying west and south of the following boundary: commencing on the International Boundary at the southeast corner of Tp. 1, Range 27, west of the 6th meridian; thence along the eastern boundary of the railway belt to the southeast corner of Tp. 2, Range 26, west of the 6th Meridian; thence north along the boundaries of Tps. 2, 3, 4 and 5, Range 26, west of the 6th Meridian; thence west along the north boundary of Tp. 5, Range 26, to the west bank of the Fraser River, along the river bank to the north boundary of Tp. 14, Range 27, west of the 6th Meridian; thence west along the north boundaries of Tps. 14, Ranges 27, 28 and 29, to the southeast corner of the Lillooet provincial electoral district; thence westerly along the southern boundaries of the Lillooet and Prince Rupert provincial electoral districts to the Pacific Ocean. Traffic District 2, comprising all the portions of the province, including islands and mainland, not comprised in Traffic District 1.

The new rule of the road is not to take effect in traffic district 1 until Dec. 31, 1921, unless by proclamation covering either the whole or any part of the district. The act became operative in District 2 July 15. District 1 includes the territory within which the British Columbia Electric Ry. operates, and was excluded in order that time may be given to that company to make the necessary changes in tournouts, cars, etc. The question of the cost of these changes is under consideration, and it has been reported that the government may undertake to meet part of the cost, which is estimated at about $750,000.

## Operation of One-Man Cars in St. John, N.B.

The New Brunswick Power Co.'s proposal to operate one-man cars in St. John, N.B., was met with considerable opposition from the employes, who took the ground, generally, that such cars are not safe to operate, and that the safety of passengers would be imperilled. The matter was brought to an issue July 10, when T. H. McCauley, General Manager, refused to sign the wages agreement unless a clause was inserted binding conductors and motormen to operate one-man cars similar to those operated elsewhere by international union men. The men expressed their willingness to operate cars of a certain type at an increased wage, and with certain other concessions, and decided to go out on strike July 12 if their terms were not agreed to. As a result of negotiations the following agreement was reached: "It is hereby agreed by the New Brunswick Power Co. and Messrs. Campbell and Moore, representatives of Division 663 of Amalgamated Association of Street and Electric Railway Employes of America, that the agreement as already drawn up as to wages and working conditions be signed by the company and the men's authorized representatives, and that a further agreement be drawn up to the effect that the company may go on and finish one or two cars as already started, that same be given a demonstration by the company and that, in the event of such cars proving satisfactory to the city commissioners and citizens of St. John, the employes and company agree to further negotiate as to the safety and reasonableness, wages, and working conditions of operating the same. In the event of no settlement being reached, both sides agree to submit the whole matter to arbitration or conciliation under the Lemieux Act."

A trial trip of the type of one-man cars proposed to be operated was made July 16. A local press report says:— "The car is the old two-man type, with the rear door closed up, two doors, in and out, provided at the left side of the forward end of the car. Brake and controller are the same as on the present type, but are augmented by the rear brake, brought forward to the motorman's place, to be used in emergency. Under the new system the motorman opens and closes doors, collects fares, issues transfers and operates the car."

# Increases in Electric Railway Passenger Fares.

**Brandon Municipal Ry.**—A press report states that the Brandon, Man., City Council's street railway department will put in operation a 10c. cash fare during the exhibition, but will continue the sale of tickets at 6 for 35c. The regular cash fare is 7c., but the report states that it was decided to put on the increased cash fare during the exhibition in order not to delay traffic while making change.

**Brantford Municipal Ry.**—We are officially advised that in order to provide for the increase of wages referred to on another page, the Brantford, Ont., Muncipal Ry. Commission has abolished the old rate of 6 tickets for 25c. and established a straight 5c. fare. For the convenience of passengers 5 tickets are sold for 25c. It is said that since the increased rate went into effect there has been no reduction in the number of passengers carried, and that about one-third of the fares collected are tickets.

**British Columbia Electric Ry.**—A press report states that the company applied to the Victoria City Council for an agreement under which the cash fare to be charged on the electric lines in the city will be increased from 5c. to 7c.

**Calgary Municipal Ry.**—The Calgary, Alta., City Council on June 24 adopted a new fare schedule, which is compared with the old one as follows:—

| | New. | Old. |
|---|---|---|
| Cash . . | 10c. | 5c. |
| Two tickets for | 15c. | ..... |
| Tickets for 25c. | 4 | 5 |
| Tickets for $1 | 20 | 23 |
| Children's tickets for 25c. | 8 | 8 |

A press report states that during the first week of the operation of the new fares, the cash receipts only dropped off about 50%, while the sale of tickets practically doubled.

**Dominion Power & Transmission Co.** The Board of Railway Commissioners passed order 29,865, July 10, as follows: Re complaint of the Canada, Park, and Central Business Colleges, Hamilton, Ont., against the proposed increase by the Hamilton Radial Electric and the Brantford & Hamilton Electric Railways in fares for students attending business colleges in Hamilton: Upon hearing the complaint at the sittings of the Board held in Hamilton, Oct. 29, 1919, the complainants and the railway companies being represented at the hearing, and what was alleged, it is ordered that the Hamilton Radial Electric and the Brantford & Hamilton Electric Railways substitute for their tariffs of students' or scholars' commutation rates now in force, a tariff or tariffs of such rates, to apply to scholars of 18 years of age and under, on the following basis, viz.: 40-trip tickets (scholars' tickets), good for 30 days, on the basis of 4¼ mills a mile of travel, subject to a minimum charge per ride of 7½c., the said tariff or tariffs to become effective not later than Sept. 1, 1920.

**The Brantford & Hamilton Electric Ry.** put in operation June 25, Special Passenger Tariff C.R.C. 5, replacing Standard Passenger Tariff C.R.C. 1, which had been in operation since Aug. 18, 1908. In the old tariff while in many cases the rates charged were fixed on the maximum mileage rate authorized by the Board of Railway Commissioners, there were a number of fares which were not up to that standard. In the new tariff the rates charged are in all cases based on the maximum mileage rates authorized. The following table giving the different stations between Hamilton and Brantford, with the mileage, and the old and new rates, single and return, shows the nature of the change made:—

| | Miles. | Old rate. S. | Old rate. R. | New rate. S. | New rate. R. |
|---|---|---|---|---|---|
| Station 3 ..... | 4.07 | 10c. | 15c. | 15c. | 25c. |
| Station 5 ..... | 4.90 | 15c. | 25c. | 15c. | 25c. |
| Station 7 ..... | 5.90 | 15c. | 30c. | 20c. | 35c. |
| Ancaster . . .. | 6.70 | 20c. | 35c. | 20c. | 35c. |
| Station 11 ..... | 7.20 | 20c. | 35c. | 25c. | 45c. |
| Station 13 ..... | 8.80 | 25c. | 40c. | 25c. | 45c. |
| Trinity . . .... | 10.59 | 30c. | 50c. | 35c. | 55c. |
| Alberton . . .. | 12.16 | 30c. | 50c. | 35c. | 65c. |
| Station 19 ..... | 14.43 | 30c. | 50c. | 40c. | 85c. |
| Station 21 ..... | 15.43 | 35c. | 60c. | 45c. | 85c. |
| Langford . . . | 16.25 | 35c. | 60c. | 50c. | 95c. |
| Station 23 ..... | 17.00 | 40c. | 70c. | 50c. | 95c. |
| Station 25 ..... | 18.56 | 40c. | 70c. | 55c. | 1.05 |
| Station 27 ..... | 18.86 | 40c. | 70c. | 55c. | 1.05 |
| Cainsville . . . | 19.35 | 45c. | 90c. | 60c. | 1.20 |
| Echo . . ..... | 20.53 | 50c. | 90c. | 60c. | 1.20 |
| Brantford . . . | 22.91 | 55c. | 1.00 | 70c. | 1.35 |

**The Hamilton, Grimsby & Beamsville** Electric Ry. put Special Passenger Tariff O.R.B. 5 in operation June 28, cancelling O.R.B. 3, dated Mar. 26, 1913, and supplements. The following table shows the stations from Hamilton with the mileage and the old and new rates, single and return:—

| | Miles. | Old rate. S. | Old rate. R. | New rate. S. | New rate. R. |
|---|---|---|---|---|---|
| Reservoir . . . | 3.00 | 5c. | 10c. | 5c. | 10c. |
| Bartonville . . | 4.23 | 10c. | 15c. | 10c. | 15c. |
| Red Hill . . . | 5.90 | 10c. | 20c. | 10c. | 20c. |
| Stoney Creek. | 7.50 | 15c. | 25c. | 15c. | 25c. |
| Fruitland . . | 10.73 | 18c. | 30c. | 20c. | 35c. |
| Smiths . . ..... | 11.10 | 20c. | 35c. | 25c. | 40c. |
| Winona . ..... | 12.31 | 25c. | 40c. | 25c. | 40c. |
| Clines . ..... | 14.30 | 25c. | 45c. | 30c. | 55c. |
| Grimsby . ..... | 18.27 | 30c. | 50c. | 35c. | 65c. |
| Thirty . . ..... | 21.00 | 40c. | 65c. | 40c. | 75c. |
| Beamsville . . | 22.60 | 40c. | 70c. | 45c. | 85c. |

The increases are more in the nature of adjustments, and bring the rates between the different stations up to the maximum authorized.

A press report states that books of 400 mile tickets have been increased from $5 to $6, and that conductors have been instructed to collect the full number of mileage tickets, for example, 18 tickets are collected for the Hamilton-Gramsby trip, and 22 for the Hamilton-Beamsville trip, instead of 17 and 21 respectively as formerly.

**The Lake Erie & Northern Ry.** put into effect, on June 15, a special passenger tariff of local and excursion passenger fares, C.R.C. 41, the single fares being on the basis of 2¾c. a mile, and the return fares 90% of double the one way fares.

**Levis County Ry.**—At a special meeting of the Lauzon, Que., municipal council, July 6, the question of the electric railway service was under discussion, but no decision was reached. The refusal of the council to concur in the Levis County Ry.'s recent application for an increase of fares, in order that employes wages might be increased, led to a strike. The other municipalities have granted the increased fares, as stated in Canadian Railway and Marine World for July, but the Lauzon council is still standing out. The company is now giving a service only in the municipalities which have granted the increased fares.

**London St. Ry.** — The fare on the Springbank line is reported to have been increased to 4 tickets for 25c., children's tickets remaining as before, 2 for 5c. The special Sunday rate of 15c. return from the center of the city to Springbank has been abolished. These changes were authorized by the Ontario Railway and Municipal Board, which is in charge of the line.

**Toronto & York Radial Ry.**—We are officially advised that changes have been made in this company's fares as follows:

Metropolitan Division:—On the line from Farnham Ave. to stop 26, strips of 5 tickets are sold for 25c., the former strips of 6 tickets for 25c. and 25 for $1 have been cancelled. The strips of 10 tickets issued at Toronto, Aurora and Newmarket for Keswick and other points on the Sutton line are cancelled; and the 50 trip tickets heretofore issued at various stations on the line to Toronto, Newmarket, Aurora and Richmond Hill have been cancelled. Passengers formerly using such tickets are now charged the regular fares.

Scarboro Division:—On the line from Woodbine to stop 20, strips of 5 tickets are sold for 25c., in place of 6 for 25c. heretofore.

Mimico Division:—On the line from Sunnyside to New Toronto (stop 25), strips of 5 tickets for 25c. are being sold instead of 6 for 25c. as formerly, and for the Sunnyside-Long Branch (stop 20) trip, the regular rate with a return fare of 15c. is charged, the old rate of 4 tickets for 25c. being cancelled.

**The Toronto Suburban Ry.'s** Standard Passenger Tariff C.R.C. 1 has been approved by the Board of Railway Commissioners.

**Winnipeg Electric Ry.**—The hearing of the company's application for authority to charge a higher fare on its lines in Winnipeg, which has been pending before the Manitoba Public Utilities Commissioner since Dec. 1918, was closed July 6.

The Commissioner then took up the applications of the Winnipeg, Selkirk & Lake Winnipeg Ry. and of the Suburban Rapid Transit Co., subsidiaries of the W. E. Ry. Co., for authority to increase fares on their lines. The companies in their applications asked for a 15% increase, but at the opening of the hearing the companies' counsel intimated that this would be withdrawn, and the entire question of the rates of fares left to the Commissioner. E. Anderson, K.C., for the Rapid Transit Co., submitted the following to the Commission:—It is proposed to discontinue entirely giving return tickets from the City of Winnipeg to any point on the Suburban Rapid Transit line. It is proposed to ask for a cash fare of 10c. in each of the following zones: Between Deer Lodge and Kirkfield park; between Kirkfield park and the new rifle range; between the new rifle range approach and Headingly. It is suggested that there should be a class of tickets issued, 2 for 15c., one of which will be good for use in any of the zones in question. It is further suggested that rates for school children will be one half the regular fare. Mr. Anderson added it was proposed that the above increases should also apply to the Charleswood line south of the Assiniboine River. The propositions were discussed with representatives of the municipalities present, and the Commissioner, in reserving decision, stated that further discussion with all the parties interested would likely be necessary.

One of the incidents arising out of the Winnipeg Electric Ry.'s application to the Manitoba Public Utilities Commission for power to charge increased rates was the initiation of proceedings by the Winnipeg City Council in the Manitoba Court of King's Bench to secure an injunction to prevent the company charging an increase of fare authorized by an interim order of the Public Utilities Commissioner. Judgment was given by Jus-

tice Curran, July 25, dismissing the action. In the course of the hearing the powers of the Public Utilities Commission, and of its constitutionality, were questioned. In regard to the first, Justice Curran said:—"I have no doubt whatever that this court has no jurisdiction on the facts of this case to interfere with the Commissioner's orders, however satisfied I may be that they are invalid for want of jurisdiction. No appeal from that order lies to this court, so that the injunction asked for restraining the defendant from carrying into effect the Commissioner's order must be refused."

On the second point, Justice Curran pointed out that the Public Utilities Commissioner is not a party to the action at all. Although not a party to the action, the validity of his office was directly called into question and if the court had decided that the act was unconstitutional, the Public Utilities Commissioner would have been deprived of his office without being afforded an opportunity of putting in a defence. There is no doubt that it was open to the city to proceed directly against the Public Utilities Commissioner and to have raised the question of the validity of the act in this manner. Another alternative method of settling the question, which would also be sound in law, is provided by the stipulations in the law by which the Lieutenant Governor in council may refer to the Court of King's Bench any matter upon which there seems to be doubt as to what court has the jurisdiction to handle it.

In his judgment commenting on the appointment and powers of the Commission, Mr. Justice Curran said:—"I have no doubt at all that the Public Utilities Act is constitutional and wholly within the legislative powers of the Provincial Legislature to enact, and that the Public Utilities Commissioner was and is legally appointed and can function in all of the powers delegated to him by that act. Further, that in no case where he acts within his jurisdiction can his orders or acts be called or questioned in this court. What the legislature could lawfully do by enactment, it could lawfully delegate to a tribunal created and set up by it for that purpose. Beyond that authority expressly or by plain inference or intentment conferred such tribunal cannot legally act."

At the resumed hearing on July 20, counsel for the company is reported to have stated that the suggested 7c. fare would give a return of 5.4% to the shareholders, but an 8c. fare would be necessary to give them a fair return on the capital invested. The shareholders have not received any return on their investment for the past five years.

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**Moncton Will Not Take Over Electric Railway.**—Moncton, N.B., ratepayers on July 3, by a vote of 530 to 475, defeated a bylaw to approve an agreement between the city and the Moncton Tramways, Electricity & Gas Co. for the sale of the company's street railway and electric lighting and power plant to the city. The agreement, which the city was authorized to enter into with the company by an act passed at the New Brunswick Legislature's last session, provided for the purchase of the company's electric light plant and electric railway in the city, also certain lands, from May 31, 1920, for $165,000, to be paid before May 31, 1921, with interest, and subject to certain adjustments to be settled by the city auditor.

# Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—We are officially advised that the Brantford, Ont., Railway Commission has decided to establish a bus service in West Brantford, which is at present not servied by the B. M. Ry. It is expected that the bus service will be started early in August. The type of bus to be used will be of light construction, and will have a seating capacity of 18.

The tracks for an electric line to serve the West Brantford district are laid to the Lorne bridge, on account of the doubtful safety of which the line will not be extended until a new bridge is built. A bylaw for the erection of a new bridge has been approved, and it is expected that construction on it will be started next spring. (May, pg. 257.)

**Hull Electric Co.**—We are officially advised that the Hull, Que., City Council proposes to repave Main St. and City Hall St., with asphalt. (April, pg. 202.)

**Hamilton St. Ry.**—The Hamilton, Ont., City Council has under consideration a bylaw authorizing the construction of a line from Margaret St. to Paradise Row and thence westerly to within 800 ft. of the Hamilton & Dundas Ry. It is reported that the company is ready to proceed with construction as soon as the necessary authorization is given by the city. (Mar., pg. 145.)

**Montreal Tramways Co.**—A press report states that the Montreal Tramways Commission has authorized the repairing of the company's tracks on St. Catherine St. east, from the C.P.R. bridge to Maisonneuve, the work to be done at once.

With regard to the construction of the projected extension of line to Kelley St., the Montreal Administrative Commission is reported to have advised the Tramways Commission that the M. T. Co. will be supplied with lines and levels at once so that the laying the new tracks can be started. The construction of this line was arranged for in the contract of 1918, the time of starting the work being dependent upon the city securing the necessary right of way for the extension of Kelley St.

The Montreal Tramways Commission and the Montreal Administrative Commission are reported to have reached an agreement as to the route of the proposed line of 12,000 ft. from Mount Royal Ave. to Shakespeare Road, to within 60 ft. of the mountain top. The cost of the construction is estimated at $250,000. It is expected that the line will be completed and ready for operation by next spring. (May, pg. 257.)

**New Brunswick Power Co.**—Work is reported to have been started on the construction of a loop at Glen Falls, and on a turn on Charlotte St., opposite the market, St. John, N.B.

It is proposed to build a large shelter at King Square, and smaller ones at five other points on the lines. (July, pg. 392.)

**Nipissing Central Ry.**—A press report states that the Liskeard, Ont., Board of Trade and other bodies in the district are urging on the Ontario Government the necessity of extending the Nipissing Central Ry. from Liskeard to North Timiskaming, Que., 18 miles. The N. C. R. charter was granted originally by the Dominion Government to a private company, and gave authority to build electric railways in Ontario and Quebec, and to develop and distribute electric power. The charter rights were acquired subsequently by the Ontario Government, and the line is managed by the Timiskaming & Northern Ontario Ry. Commission. (April, pg. 202.)

**Quebec Ry., Light & Power Co.**—We are officially advised that the company is building about half a mile of new track, from the corner of Paquet's factory on Dorchester St., over Lavigner bridge, to connect with the track in Stadacona Village.

A press report states that application has been made to the Board of Railway Commissioners for authority to extend the company's lines in Belvedere Ward, Quebec, to St. Malo. (July, pg. 392.)

**Regina Municipal Ry.**—A press report states that a Y is being built on Hill Ave., in Lakeview, for the white line cars, in lieu of that formerly used near the legislative buildings ground, which is being removed so that the site may be used for the erection of the Saskatchewan war memorial. (June, pg. 316.)

**St. Thomas Municipal Ry.**—A press report states that an arrangement has been made with the London & Port Stanley Ry., the Michigan Central Rd., and the Pere Marquette Rd., and approved by the Board of Railway Commissioners, under which one-man cars will be operated on the St. Thomas Municipal Ry. for three months, when the question of the permanent protection at the railway crossings will be dealt with by the Board. It was hoped that the new cars would have been put in operation July 15, but as the Board of Railway Commissioners permission had not been received, in writing, the starting of the cars was put off for a week.

**Winnipeg Electric Ry.**—Street railway traffic over the Maryland bridge is reported to have been suspended July 1, by the City Engineers instructions. Pending reconstruction of the bridge cars on the Croydon Ave., the Sherbrooke St. and the Academy Road lines have been re-routed.

**Toronto Civic Ry.**—We are officially advised that work has been started on widening of Bloor St., Toronto, from 66 to 86 ft., between Quebec Ave. and Runnymede Road, and that when this has been completed a second track will be laid on this section of the city's line. It is expected to have the work completed by the autumn. (June, pg. 316.)

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**Sudbury-Copper Cliff Suburban Electric Ry. Proposed Sale.**—In connection with the company's offer to sell its undertaking to the town of Sudbury, Ont., for $222,921, payment to be made in municipal debentures, referred to in Canadian Railway and Marine World for July, a press report of July 20 states that the town council's finance committee had advised that the town's financial condition does not permit of the purchase being made at present.

**London & Lake Erie Ry. & Transportation Co.'s Property.**—A press report states that the Ontario Highways Department proposes to take over the section of the right of way of the old London & Lake Erie Ry. & Transportation Co.'s electric railway between Talbotville and St. Thomas, Ont., and incorporate it in one of the projected provincial highways.

# Electric Railway Employes' Wages, Working Conditions, Etc.

**Brantford Municipal Ry.**—We are officially advised that the new schedule of wages agreed upon between the Brantford, Ont., Municipal Ry. Commission and motormen and conductors, dates from June 1. Following is a comparison of the new and old rates per hour.

| | New. | Old. |
|---|---|---|
| First year | 46c. | 39c. |
| Second year | 48c. | 41c. |
| Third year | 50c. | 43c. |

The agreement provides that 9 hours work, to be completed in 12 consecutive hours, shall constitute a day; time and a half to be paid for overtime. Two year men pay half the cost of uniforms, afterwards uniforms are supplied free.

**Calgary Municipal Ry.**—We are officially advised that the wages for conductors and motormen and for motor-conductors on one-man cars for this year, as compared with the rates paid in 1919, are as follows per hour:—

| Conductors and Motormen— | 1920. | 1919. |
|---|---|---|
| First six months | 57½c. | 45c. |
| Second six months | 62½c. | 50c. |
| Third six months | 67½c. | 55c. |
| Fourth six months | ..... | 60c. |
| Motor-Conductors— | | |
| First six months | 62½c. | 50c. |
| Second six months | 67½c. | 55c. |
| Third six months | 72½c. | 60c. |
| Fourth six months | ..... | 65c. |

**Hull Electric Co.**—A board of conciliation has been appointed to deal with the matter of the wages of the motormen and conductors. Under the agreement between the company and its employes, which expired July 1, the men were paid from 34c. to 41c. an hour, according to length of service. They have asked for an all round increase to 65c.

**Hydro Electric Ry., Essex Division.**, formerly Sandwich, Windsor & Amherstburg Ry.—The agreement between the S., W. & A. Ry. Co. and its employes as to wages expired July 1. The employes asked the Hydro Electric Power Commission of Ontario, which took over the line on Mar. 31, for a minimum rate of 50c. and a maximum rate of 60c. an hour. An offer of 40c. an hour for the first three months 45c. an hour, for the next six months, and 55c. an hour after nine months was reported to have been rejected by the employes June 28. It was reported later that the men had agreed to accept an increase of 5c. an hour, half of what they asked, with the understanding that the matter will be again discussed at the expiration of three months.

**New Brunswick Power Co.**—A press report states that as the result of a conference held July 6 between representatives of the company and of the employes' union an increase of wages of about $1 a day has been granted.

**Sarnia St. Ry.**—A press report states that a small increase of wages has been granted, which the man have stated they are willing to accept until the Sarnia City Council gives the company authority to charge increased fares.

**Hull Electric Co.**—The wage agreement between the Hull Electric Co. and its conductors and motormen expired July 1. The men, some time ago demanded a flat increase to 65c. an hour, the existing rate being from 34c. to 41c. an hour, according to length of service. As the matter could not be adjusted, a board of conciliation was appointed, the company nominating G. Kelley, of Ottawa, as its representative, and the men, J. Gibbons, of Toronto. These two having failed to agree on a chairman, the Minister of Labor appointed Capt. W. P. Grant, Manager, Daly Co., Ottawa.

**Winnipeg Electric Ry.**—The award of the board of conciliation appointed to deal with the employes demands for increased wages presented to the company April 8, was given out July 12. In addition to specifying altered working conditions, the draft agreement submitted by the men named the wages, the table below showing the old rates per hour and those asked:—

| | Old | | Proposed | |
|---|---|---|---|---|
| | Week-days | Sundays | Week-days | Sundays |
| First 6 months | 46c. | 51c. | 80c. | 90c. |
| Second 6 months | 49c. | 54c. | 85c. | 95c. |
| After 1 year | 52c. | 57c. | 90c. | $1 |
| After 2nd year | 55c. | 60c. | ..... | ..... |

The board, which consisted of Judge R. H. Myers, Winnipeg, chairman; C. E. Dafoe, Winnipeg, representing the company, and R. S. Ward, representing the men, awarded the men a 10% increase instead of the much larger one asked for. A press report of July 13 stated that the company would accept the award but it was rejected by the men by a vote of 481 to 473 July 18, a large number not voting.

A. W. McLimont, Vice President and General Manager, is reported to have said in an interview on July 20 that the increased wages awarded meant an increased operating expenditure of about $300,000 a year, of which $65,000 would have to be found immediately to provide for back pay to May 1, when the old agreement expired.

## Electric Railway Notes.

The Regina, Sask., Municipal Ry. is equipping the six old cars bought in England with Westinghouse motors.

The Toronto Civic Ry. has ordered 25 double end Birney safety cars from J. G. Brill Co., Philadelphia, Pa. Delivery was expected at the end of July.

The Hydro Electric Power Commission of Ontario is reported to have decided to buy two additional mogul steam shovels, 56 contractors cars, and 3 locomotives, for the Chippawa power development work.

The Mayor of Toronto on July 12 instructed the City Solicitor to enter proceedings against the Toronto Ry. to compel it to operate all its cars during the rush hours at noon and in the early evening.

Calgary, Alta., city commissioners have, according to a press report, advised the city council to buy 12 additional electric heaters for cars on Calgary Municipal Ry. at a total cost of $2,160.

The St. Thomas, Ont., City Council is reported to have under consideration the question of submitting a bylaw to the ratepayers providing for the operation of cars on Sundays on St. Thomas Municipal Ry.

The board of conciliation appointed to deal with the wage question on the Toronto Suburban Ry. consists of Judge Barron, Stratford, Ont., chairman; G. D. Kelley, Ottawa, representing the company, and L. Braithwaite, Toronto, on behalf of the men.

The Hamilton & Dundas St. Ry. has refused to put on a late Sunday night car from Hamilton to Dundas, Ont. It is said that the Dundas Town Council will take up the matter with the company when the summer car schedule for 1921 is being arranged.

The Nova Scotia Tramways & Power Co. put in operation the new railway terminals-Armadale service in Halifax, N.S., July 7. The company took representatives of the city council and other of the city's business interests over the new route the day before.

The Ontario Railway and Municipal Board, which is operating the London St. Ry., is reported to have decided to speed up the service by eliminating a number of stops in the center of the city, and to add to the convenience of passengers by posting up time schedules at various points.

The Winnipeg Electric Ry. intends to subdivide River Park and place it on the market for building lots. The park was acquired by the company when it took over the old horse car system in 1893, and has been used as an amusement park. It is reported that the city may buy and acquire it.

The Montreal Tramways Co. was sued recently by N. Sauve in the Quebec Superior Court for damage for injuries received in Sept., 1918, while boarding one of its cars. The evidence showed that Sauve attempted to board the car while it was in motion, and the court held that the accident was caused entirely through his fault, imprudence and want of care, and dismissed the action.

The Saskatoon, Sask., City Council is reported to have decided on July 6 to cut down the car service on the Saskatoon Municipal Ry. from a 12 minute one to a 15 minute one, the alteration taking effect July 19. It is reported that the loss on the operation of the line this year to May 31 was $11,381, exclusive of a claim paid of $11,700; and that the estimated loss for Jan. was $6,500. The estimated saving through the operation of the new time schedule is said to be $100 a day.

The Windsor, Essex & Lake Shore Rapid Ry. has bought two interurban passenger cars, and one combination car, used formerly by the Richmond-Ashland Ry. Co., Richmond, Va. The following are the principal dimensions,—length over all, 58 ft.; length of passenger compartment, 34 ft.; length of smoking compartment, 10 ft. The cars have been used very little and are in excellent condition. The combination one has a passenger compartment 10 ft. long, with side doors on each side, 6 ft. 3 in. x 5 ft. wide. They are fitted with G.E. straight and automatic air brakes.

The Toronto Suburban Ry. has received 2 freight express cars from Preston Car & Coach Co., for its Toronto-Guelph line. They are equipped with four 240A Canadian General Electric motors 650-1500 volts, and have the following dimensions,—length over buffers, 51 ft. 8 in.; length over vestibule, 50 ft.; projection of buffers, 10 in.; radius of buffers, 5 ft. 8 in.; width over sheathing 9 ft 1½ in.; width over sills 9 ft.; width over all, 9 ft. 4½ in.; height, rail to under side of sill, 3 ft. 8 in.; height, floor to roof, 7 ft. 10½ in.; height, rail to top of running board, 12 ft. 6 in.; height, rail to center of drawbar, 2 ft. 10½ in.

**The Detroit United Rys.**, in an amendment to its bill in the traction fare case pending in the Circuit Court, gave notice July 1 that it will establish 8c. cash fares or 7 tickets for 50c. on all non-franchise lines, Aug. 1.

## Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:—

| | May 1920 | May 1919 | 11 mos. to May 31, 1920 | 11 mos. to May 31, 1919 |
|---|---|---|---|---|
| Gross | $720,004 | $628,847 | $8,026,922 | $6,650,954 |
| Expenses | 547,506 | 473,908 | 5,693,925 | 4,922,911 |
| Net | 172,498 | 154,939 | 2,332,997 | 1,728,043 |

Calgary Municipal Ry.—A statement showing the results of operation for the six months ended June 30 is reported to have been laid before the Calgary, Alta., City Commissioners, July 15. Following are the principal figures given, compared with those for the same period of 1919.

| | 1920. | 1919. |
|---|---|---|
| Revenues . . | $450,454.39 | $359,145.14 |
| Expenditures . . | 465,639.19 | 368,696.39 |
| Deficit . . | $15,184.80 | $9,551.25 |
| Mileage . . | 1,583,395 | 1,404,351 |
| Passengers carried | 9,160,925 | 7,335,520 |
| Revenue per car mile | 27.8c. | 24.5c. |
| Operating expenses per car mile . . | 22.6c. | 18.7c. |

Cape Breton Electric Co:—

| | May 1920 | May 1919 | 5 mos. to May 31, 1920 | 5 mos. to May 31, 1919 |
|---|---|---|---|---|
| Gross | $50,607 | $46,351 | $236,665 | $230,905 |
| Expenses | 42,194 | 38,450 | 211,010 | 175,182 |
| Net | 8,413 | 7,901 | 25,655 | 55,723 |

Montreal Tramways Co.—The directors have authorized the payment of a dividend of $2.50 a share on the common stock for the quarter ended June 30. This is the third regular dividend on common stock since the company resumed paying dividends at the beginning of this year. In addition to this the company has paid three deferred dividends amounting to 7½%, and it is expected that further payments on account of deferred dividends will be made shortly.

Toronto Civic Railway.—

| | Passengers. | Receipts. |
|---|---|---|
| Jan. . | 2,493,296 | $41,989 |
| Feb. . | 2,334,431 | 39,331 |
| Mar. . | 2,700,264 | 45,434 |
| Apr. . | 2,622,993 | 43,814 |
| May . | 2,678,059 | 45,378 |
| June . | 2,524,803 | 42,221 |
| | 15,353,846 | $258,167 |

During the same period in 1919, the number of passengers carried was 12,004,954, and total receipts $202,260.

Toronto Railway.—

| | 1920 Receipts | 1920 City percentage | 1919 Receipts | 1919 City percentage |
|---|---|---|---|---|
| Jan. | $ 652,350 | $110,950 | $ 588,923 | $ 88,339 |
| Feb. | 595,861 | 119,172 | 545,771 | 96,563 |
| Mar. | 745,706 | 149,141 | 615,526 | 123,105 |
| Apr. | 653,340 | 130,668 | 600,231 | 120,046 |
| May | 644,458 | 132,892 | 620,068 | 124,014 |
| June | 544,833 | 108,966 | 431,082, | 86,217 |
| | $3,856,548 | $751,789 | $3,401,601 | $638,284 |

Toronto Ry., Toronto & York Radial Ry. and allied companies:—

| | May 1920 | May 1919 | May 31, 5 mos. to 1920 | May 31, 5 mos. to 1919 |
|---|---|---|---|---|
| Gross | $1,206,930 | $1,032,717 | $5,918,509 | $5,290,599 |
| Expenses | 794,450 | 624,113 | 3,893,182 | 3,100,256 |
| Net | 412,480 | 408,604 | 2,025,327 | 2,190,343 |

Winnipeg Electric Ry. and allied companies:—

| | May 1920 | May 1919 | 5 mos. to May 31, 1920 | 5 mos. to May 31, 1919 |
|---|---|---|---|---|
| Gross | $404,742 | $248,191 | $2,237,052 | $1,762,025 |
| Expenses | 293,671 | 198,092 | 1,679,105 | 1,310,682 |
| Net | 111,071 | 50,099 | 557,947 | 451,343 |

Winnipeg Electric Ry. Co.—A special general meeting of shareholders was called to be held in Winnipeg July 27 to ratify a bylaw amending a bylaw authorizing the issue of $3,000,000 of 7% cumulative preference stock, which was approved by the shareholders May 20. The new bylaw provides for the payment of the dividend of 7% in quarterly instalments instead of half yearly. The shareholders were also to be asked to sanction a bylaw repealing the bylaw authorizing the issue of paid up common stock as a bonus in connection with the sale of the preference stock; and also to pass a resolution authorizing the directors to dispose of the preference stock for such price and on such terms as they may think advisable.

## Mainly About Electric Railway People.

Sir Adam Beck, Chairman, Hydro Electric Power Commission of Ontario, was nominated by the Toronto Board of Control, on July 7, as arbitrator, to represent the city, in connection with the taking over of the Toronto Ry. in 1921.

W. H. Breithaupt, President, Wellington-Waterloo Ry., Kitchener, Ont., has been re-elected Chairman of the Kitchener City Planning Commission for a third year.

H. L. Kromstrome has been appointed Accountant, Levis County Ry., succeeding H. S. C. Moffatt, resigned to take a position in Sherbrooke, Que.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., was expected to sail from England on July 7, and to reach Vancouver before the end of July.

C. U. Peeling, who resigned his position as Manager, Cornwall Street Ry., Light & Power Co., Cornwall, Ont., a few months ago, to enter the Illinois Traction Co.'s engineering department's service at Peoria, Illinois, has been appointed Superintendent, Palmetto Power & Light Co., at Florence, South Carolina.

Hon. J. L. Perron, K.C., one of the Montreal Tramways Co.'s counsel, and who is a member of the Quebec Legislative Council, has been appointed a member of the Quebec Government, without portfolio.

Lt. Col. G. C. Royce, General Manager, Toronto Suburban Ry., and family, are spending some time in Muskoka.

## London Street Railway Fares and Wages Situation.

A report of the London St. Ry.'s operation for June has been submitted to the London City Council's street railway committee by C. B. King, the company's manager, who is managing the line under the Ontario Railway and Municipal Board. A press report states that the receipts were not up to expectations, and that there is no probability that the men will be paid any advance on the 48c. an hour rate, on which they consented to operate the line for two months. It is also stated that it is doubtful whether that rate can be maintained with the existing fare and service of cars.

The situation as to service, fares and the future of the railway is being discussed generally, but with no definite conclusion in sight. It is stated that the Ontario Railway and Municipal Board in its management of the line is disregarding the bylaw in regard to cars, etc. The men want 52c. an hour, and it is stated that there will be no improvements made in the service until the men are paid at that rate. The city council will not meet again until September and it is added that arrangements may be made to have a vote taken in October on the fare question, but at any rate there will be questions submitted to the ratepayers at the municipal elections on Jan. 1, 1921, on the fare situation, as well as the purchase of the line.

## Telegraph, Telephone and Cable Matters.

D. B. Hanna, President, Canadian National Rys., has been elected a director of the Dominion Telegraph Co., succeeding Dr. C. O'Reilly, deceased.

The estimates passed at the Dominion Parliament's recent session provide under "Public works, chargeable to income," $17,500 for purchase of submarine cable.

The Western Union Telegraph Co. is laying 150 miles of cable between Placentia, Nfld., and St. Pierre, Miquelon, with the cable steamship Lord Kelvin. This will give an additional cable connection between these two points.

The board of conciliation appointed to deal with the dispute between the C.P.R. and its telegraph operators consists of County Judge R. D. Gunn, Ottawa, chairman; F. H. Phippen, K.C., Toronto, representing the company, and J. T. Gunn, Toronto, on behalf of the men. The operators demand an increase of 25% in wages.

The Telephone Pioneers of America will hold their annual convention at Montreal, Sept. 10 and 11, this being the seventh meeting of the association since its formation. A party will leave New York Sept. 8, and travel by way of Albany, Clayton, Thousand Island, St. Lawrence River and Lachine Rapids, and will make the return trip through Lake George.

The Old Time Telegraphers' and Historical Association entertainment committee has arranged the following tentative programme for the annual reunion, which will be held at Toronto, Aug. 31, Sept. 1 and 2:—Aug. 31, business meeting, luncheon, automobile drive round the city, visit to Canadian National Exhibition, including performance before grand stand, with the pageant The Empire Triumphant; Sept. 1, boat trip to Queenston, thence by Gorge Route to Niagara Falls; Sept. 2, visit to Canadian National Exhibition, dinner at King Edward Hotel.

## Telegraph and Telephone Line Estimates.

The further supplementary estimates for the year ending Mar. 31, 1921, passed at the Dominion Parliament's recent session, contain the following items:—

| | |
|---|---|
| Telegraph and telephones lines, generally, repairs, repoling, shifting and completion of lines under construction . . | $50,000 |
| Land and cable telegraph lines, Lower St. Lawrence and Maritime Provinces, including working expenses of vessels required for cable service, further amount required . | 13,900 |
| Alberta, further amount required | 12,600 |
| British Columbia, Vancouver Island District, further amount required | 8,000 |
| British Columbia, mainland, further amount required . | 7,000 |
| Saskatchewan, further amount required | 7,500 |
| Yukon system, further amount required | 12,000 |

Toronto Transportation Commission.—The Toronto City Board of Control on July 21 nominated, for consideration by the City Council, the following to be members of the commission to take over the Toronto Ry. in 1921 and manage it: P. W. Ellis, wholesale jeweller, President Toronto Hydro Electric Commission and Chairman Queen Victoria, Niagara Falls Park Commission; Fred. Miller, of Roger Miller & Sons, harbor contractors, Toronto; and Geo. Wright, hotel proprietor, who is a member of the Toronto Hydro Electric Commission.

# Marine Department

## Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

**Steel Plates for Shipbuilding.**—The estimates passed at the Dominion Parliament's recent session contain $500,000, amount required in connection with contract made by the Marine Department with the Dominion Iron & Steel Co. for delivery of steel plates.

**Launching of Steamships.**—Since Canadian Railway and Marine World for July was issued, we have been advised of the following launchings of steel cargo steamships for Canadian Government Merchant Marine:—

June 26, s.s. Canadian Carrier; Marine Department contract 33; builder's yard no. 44; approximately 4,350 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.

June 29, s.s. Canadian Winner; Marine Department contract 29; builder's yard no. 1; approximately 8,390 d.w. tons; Harbour Marine Co., Victoria, B.C.

July 27, s.s. Canadian Conqueror; Marine Department contract 51; builder's yard no. 78; approximately 8,390 d.w. tons, Canadian Vickers Ltd., Montreal.

The aft section of s.s. Canadian Squatter, Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, was launched, July 20, by British American Shipbuilding Co., Welland, Ont., and we were advised that the forward section would be launched about a week later. The two sections will be towed to Montreal, and joined together at Canadian Vickers Ltd. plant.

**Deliveries of Steamships.**—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following deliveries have been made to Canadian Government Merchant Marine:—

June 24, s.s. Canadian Trapper; Marine Department contract 17; builder's yard no. 459; approximately 5,100 d.w. tons, Davie Shipbuilding & Repairing Co., Lauzon, Que. This ship loaded a general cargo at Montreal and sailed from there June 30 for London, Eng.

July 11, s.s. Canadian Rancher; Marine Department contract 14; builder's yard no. 6; approximately 5,100 d.w. tons, Tidewater Shipbuilders Ltd., Three Rivers, Que. This ship was tentatively taken over by the Marine Department Dec. 27, 1919, but not fully accepted, as there were a number of things to be completed. She was transferred to Canadian Government Merchant Marine on July 11, loaded general cargo at Montreal and sailed for the United Kingdom on July 16.

**Appointments of Officials.**—B. C. Kelley has been appointed General Agent, Canadian Government Merchant Marine Ltd., and is in charge of its office at Vancouver, B.C. W. B. Finglass has been appointed Assistant Marine Superintendent, and Thos. Louden has been appointed Assistant Superintendent Engineer. They all have their offices in suite 110, Canadian National Rys. station, Vancouver.

**Officers of Steamships.**—The following masters have been appointed to steamships by Canadian Government Merchant Marine Ltd. since those mentioned in our last issue:—Canadian Gunner, Capt. C. Wallace, vice Capt. R. G. Hunter; Canadian Miner, Capt. A. Blouin, vice Capt. M. Fraser, resigned; Canadian Trapper, Capt. J. E. Faulkner; Canadian Rancher, Capt. H. T. M. Leonard, vice Capt. M. Robertson; Canadian Voyageur, Capt. A. E. Sprosen, vice Capt. J. D. Mackenzie, resigned. Engineers have also been appointed as follows:—Canadian Exporter, H. J. Robinson; Canadian Prospector, T. A. Porter; Canadian Sailor, B. Miller; Canadian Otter, W. Tough; Canadian Ranger, W. Harrison; Canadian Victor, W. D. McGregor; Canadian Observer, J. Davies.

**The s.s. Canadian Recruit**, which went ashore on Vache Reef, near the mouth of the Saguenay River, Dec. 20, 1919, and which was subsequently abandoned to the underwriters, was refloated July 17, and towed to Tadousac Bay, and thence to Lauzon, where she will be docked and examined, and probably repaired by the Davie Shipbuilding & Repairing Co. The salving of the ship was undertaken by the General Wrecking Co. and the Quebec Wrecking & Salvage Co., and it was accomplished by the use of compressed air. The damage is stated to be considerable. The Canadian Recruit, which is of 3,964 d.w. tons, was built by Collingwood Shipbuilding Co., Collingwood, Ont., in 1919. She sailed from Montreal, Dec. 8, with a general cargo for Kingston, Jamaica, and Havana, Cuba, and experienced serious trouble with ice, after passing Crane Island, on Dec. 16, and lost her rudder, and eventually drifted with the ice and went on the Vache Reef, Dec. 20.

**Dominion Marine Association.**

President, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

Second Vice President, A. A. Larocque, President, Sincennes - McNaughton Line, Montreal.

Executive Committee, E. H. Beazley, Union Steamship Co. of British Columbia, Vancouver; W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

General Counsel, Francis King, M.A., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

**British American Shipbuilding Co., Welland, Ont.**—As stated previously in Canadian Railway and Marine World, the s.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4; approximately 4,575 d.w. tons, was launched in two sections, the aft section on Mar. 25, and the forward section April 13. The two sections left Welland June 24 and June 26 respectively, in tow of the tugs Cross and Schofield, which took them through the Welland Canal. They left Port Dalhousie, June 27 and 28 respectively, being towed by the Sincennes-McNaughton Line's tugs Macsinco and Muscalonge, and arrived at Montreal July 5, where they will be joined together at Canadian Vickers Ltd. plant.

The British American Shipbuilding Co. launched the aft section of s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, July 20, and expected to launch the forward section about a week later. The two sections will be towed to Montreal and joined together at Canadian Vickers Ltd. plant.

Canadian Vickers Ltd., Montreal, launched the s.s. Canadian Conqueror; Marine Department contract 61; builder's yard no. 78; approximately 8,390 d. w. tons, on July 27, the christening being performed by Mrs. A. R. Gilham, wife of the Managing Director.

Davie Shipbuilding & Repairing Co., Lauzon, Que., delivered the s.s. Canadian Trapper; Marine Department contract 17; builder's yard no. 459; approximately 5,100 d.w. tons; to the Marine Department, and she was transferred to Canadian Government Merchant Marine for operation, on June 24. The keel of this ship was laid Mar. 11, 1919, and she was launched Oct. 9, 1919.

The Davie Shipbuilding & Repairing Co. advised us July 16, that the s.s. Canadian Hunter; Marine Department contract 18; builder's yard no. 460; approximately 5,100 d.w. tons; had made a trip from Three Rivers to Quebec, under her own steam, and was being cleaned up, and painted, preparatory to delivery to the Marine Department.

**Dominion Shipbuilding & Repair Co.**, Toronto, which is building two steel cargo steamships for Canadian Government Merchant Marine, viz., Canadian Pathfinder and Canadian Engineer, each approximately 3,500 d.w. tons, advised us recently that it expected to launch them in August and September respectively.

**Harbour Marine Co.**, Victoria, B.C., launched the s.s. Canadian Winner, Marine Department contract, 29; builder's yard no. 1; approximately 8,390 d.w. tons, for Canadian Government Merchant Marine Ltd., on June 29, the christening being performed by Mrs. S. F. Tolmie, wife of the Dominion Minister of Agriculture. This is the first steel freight steamship of this tonnage to be built at Victoria, and is one of two under contract with this company for Canadian Government Merchant Marine. The contract was signed Jan. 24, and the keel laid July 14, 1919. The second ship, to be named Canadian Traveller, is under way, the keel having been laid Aug. 9, 1919. The general dimensions are,—length over all, 413 ft. 1 in.; length b.p., 400 ft.; breadth moulded, 52 ft.; depth moulded, 31 ft.; draft when loaded, 25 ft. 1 in. They are of the two deck type, with poop, bridge and forecastle and are equipped with triple expansion engines having cylinders 27, 44 and 73 in. diar. by 48 in. stroke, 3,000 i.h.p., supplied with steam by 3 single ended boilers, each 15½ x 11½

ft., at 180 lb., fitted with 9 furnaces with a grate area of 198 sq. ft., and a heating surface of 7,743 sq. ft. The ships are built under Lloyd's classification, for a speed, under full load, of 11 knots an hour.

Harbour Marine Co., which is also building the s.s. Canadian Traveller; Marine Department contract 30; builder's yard no. 2; approximately 8,390 d.w. tons, for Canadian Government Merchant Marine Ltd., advised us recently that construction was progressing very favorably.

Nova Scotia Steel & Coal Co., New Glasgow, N.S.—In the list of orders for steel cargo steamships given by the Dominion Government, which appears on another page of this issue, this company

Steamship Canadian Prospector, Canadian Government Merchant Marine Ltd., approximately 8,390 d.w. tons, built by J. Coughlan & Son, Vancouver, B.C., loading at government wharf, for Australia.

is shown as having Marine Department contract 59, for a ship of approximately 2,800 d.w. tons. The keel for this ship was laid May 4, and it is expected to complete her in November, but we were advised July 13 that no contract had been signed up to that date.

Port Arthur Shipbuilding Co., Port Arthur, Ont., launched the s.s. Canadian Carrier; Marine Department contract 33; builder's yard no. 44; approximately 4,350 d.w. tons, for Canadian Government Merchant Marine Ltd., June 26, the christening being performed by Mrs. J. W. Wolvin, of Port Arthur. When completed the ship will take a full cargo of grain from Port Arthur to Buffalo, where she will be cut in two, taken through the Welland and St. Lawrence canals. in sections, and rejoined at Montreal or Quebec, the company's contract being to deliver her at one of those ports. Her dimensions are,—length overall, 335 ft.; beam, 44 ft.; depth, 25 ft. She is built with 'tween decks, with poop, bridge and forecastle and her propelling machinery consists of a triple expansion, surface condensing engine, with cylinders 23, 36 and 63 in. diar. by 42 in. stroke, designed to develop from 1,750 to 2,000 h.p. for a speed of 11 knots an hour. Steam is supplied by 2 Scotch boilers, each 15 x 11 ft., under Howden's forced draft, at a working pressure of 180 lb.

Prince Rupert Drydock & Engineering Co., Prince Rupert, B.C., which is building two steel cargo steamships of approximately 8,390 d.w. tons, for Canadian Government Merchant Marine Ltd., viz., Canadian Reaper, and Canadian Thrasher, the keels of which were laid Sept. 27, 1919, and Oct. 20, 1919, advises us that it expects to launch them about the end of September.

Tidewater Shipbuilders Ltd., Three Rivers, Que., advised us July 21 that the launching of the steel cargo steamship Canadian Fisher; Marine Department contract 16; builder's yard no. 7; approximately 5,100 d.w. tons, had been delayed, partly due to lack of steel, but principally to a proposal, by the Marine Department, to change the upper structure so as to make the ship suitable for carrying a limited number of passengers.

## Canadian Pacific Ocean Service's s.s. Montcalm Launched at Glasgow.

The s.s. Montcalm, one of three steamships under construction at Glasgow, Scotland, for Canadian Pacific Ocean Services' Atlantic service, was launched there July 3. When completed, which is expected to be during Feb., 1921, she will be operated between Liverpool, Eng., and Montreal. She is being built by John Brown & Co., Clydebank, Scotland, who also have under construction a sister ship to be named Metapedia, and there is another ship of the same type, to be named Montmorency, under construction by the Fairfield Shipbuilding & Engineering Co., Govan, Scotland. The dimensions of these ships are,—length b.p. 566 ft., breadth 70 ft., depth 51½ ft., tonnage 16,000 gross. They are being equipped to burn oil fuel, and for a speed of 17 knots an hour.

The ships are of the two class type with accommodation for 520 cabin and 1,550 third class passengers. They are being built to the requirements of the highest class of Lloyd's Registry under special survey, classed A 100 A1, with a modified cruiser stern specially adapted to the lines of the ship, adding strength to the after end, protection to the propellers and steering gear, increasing the passenger deck accommodation, and reducing vibration to a minimum. There will be two funnels and two pole masts rigged as a fore and aft schooner. There will also be the most modern systems of ventilating and heating, electrically equipped mechanical appliances, electric steering control, wireless telegraph, Sperry gyro compass, and an emergency 30 ft. motor boat in addition to the maximum requirements for life boats.

The cabin dining room is arranged on the upper deck to ensure the least possible sense of motion, and will have seating accommodation for over 300 persons. The lounge, writing room and card room are located on the promenade deck, as also are the drawing room, smoke room and children's room. A gymnasium is arranged on the bridge deck, where there is a dark room for the convenience of photographers. The third class passenger accommodation includes lounges and smoke rooms, forward and aft on the bridge and shelter decks, and a large dining room of three compartments on the upper deck aft, wiith ample dining space on the shelter deck forward. The third class cabins are to be arranged for two, four and six passengers.

**Marine Public Works Contracts.**—The following contracts have been awarded by the Dominion Public Works Department: June 2, dredging on three shoals, Goodfellow bar and Cassilis Lawlors shore, Northwest Miramichi River, N.B., to Miramichi Dredging Co., Newcastle, N.B., class B, 54¾c. a cub. yd. scow measure; June 26, construction of wharf and warehouse at Kagawong, Manitoulin Island, Ont., to McNamara Bros. and Thornton, Sault Ste. Marie, Ont., unit prices.

**Shipbuilding Materials Exempt from Taxation.**—The Inland Revenue Department holds that material for the construction of ships licensed to engage in Canadian coasting trade is not liable to the 1% or 2% tax imposed by the Act to amend the Special War Revenue Act, 1915, passed at the Dominion Parliament's recent session.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with the finally ascertained deadweight tons multiplied by the price per ton, the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4,575 | $207. | $ 948,660.75 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " " | 67 | *8,408 | 180. | 1,519,459.99 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbldg. Co., C'wood. | 61 | *3,595 | 205. | 819,385.58 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd. | 100 | *4,495¾ | 207. | 930,620.25 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | *4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9, 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | S.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbldg. Co., C'wood. | 62 | *3,964 | 205. | 813,252.07 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Jan. 3, 1919 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | *3,975¼ | 205. | 814,926.25 | Lake, s.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | *3,978¼ | 205. | 815,514.25 | Lake, s.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6. 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | Dec. 27, 1919 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | ..... | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 12 | Mar. 11, 1919 | Oct. 9, 1919 | June 29, 1920 |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | " | 12 | Mar. 28, 1919 | May 7, 1920 | ..... |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | *3,341 | 205. | 686,762.88 | Lake, s.d., p., b. and f'c's'le | " | 10½ | Dec. 9, 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3,408 | 210. | 715,652.49 | Lake, s.d., p., b. and f'c's'le | " | 10 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | *3,357 | 205. | 690,409.84 | Lake, s.d., p., b. and f'c's'le | " | 10½ | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3,405 | 210. | 715,649.13 | Lake, s.d., p., b. and f'c's'le | " | 10 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | *4,581 | 215. | 984,915 | S.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18, 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8,382 | 188. | 1,575,816.00 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1,587,643.15 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | *8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8,393 | 188. | 1,589,700.00 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8, 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | *8,393.3 | 188. | 1,579,068.40 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Winner | Harbour Marine Co. Ltd. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | June 29, 1920 | ..... |
| 30 | Jan. 24, 1919 | Canadian Traveller | " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,964½ | 205. | 812,722.50 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | May 11, 1920 |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,350 | 215. | 935,250 | 2.d., p., b. and f'c's'le | " | 11 | Aug. 29, 1919 | May 8, 1920 | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,350 | 215. | 935,250 | 2.d., p., b. and f'c's'le | " | 11 | Aug. 29, 1919 | June 26, 1920 | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | *8,381 | 198. | 1,659,438 | 2.d., p., b and f'c's'le | Lloyd's | 11 | Apr. 26, 1919 | Dec. 6, 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " " | 12 | *8,380 | 198. | 1,659,240 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | Mar. 6, 1920 |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan. 24, 1920 | ..... |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | Feb. 24, 1920 | June 15, 1920 |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | *2,776½ | 210. | 583,065 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8, 1919 | Dec. 20, 1920 |
| 41 | Mar. 31, 1919 | Canadian Miner | " " | 6 | *2,778 | 210. | 583,380 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | Apr. 3, 1920 | May 7, 1920 |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983,625 | 2.d., p., b. and f'c's'le | " | 11 | Mar. 29, 1919 | Apr. 13, 1920 | ..... |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4,575 | 215. | 983,625 | 2.d., p., b. and f'c's'le | " | 11 | July 14, 1919 | ..... | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbldg. Co., C'wood. | 65 | 3,990 | 180. | 718,200 | Lake, s.d., p., b., and f'c's'le | " | 11 | Sept. 3, 1919 | Dec. 27, 1919 | Apr. 28, 1920 |
| 47 | Sept. 11, 1919 | Canadian Observer | " " | 66 | 3,990 | 180. | 718,200 | Lake, s.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | May 8, 1920 | June 15, 1920 |
| 48 | Sept. 2, 1919 | Canadian Pathfinder | Dominion Shipbuilding Co. | 10 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | June 22, 1920 | ..... |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | Jan. 17, 1920 | ..... | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 54 | Feb. 26, 1920 | Canadian Racer | Midland Shipbuilding Co. | 10 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 11 | June 9, 1920 | ..... | ..... |
| 55 | Mar. 18, 1920 | Canadian Highlander | Wallace Shipyards Ltd. | 103 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 56 | Mar. 18, 1920 | Canadian Skirmisher | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 57 | Mar. 13, 1920 | Canadian Rover | Collingwood Shipbldg. Co., C'wood. | 67 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 11 | ..... | ..... | ..... |
| 58 | Mar. 13, 1920 | Canadian Coaster | Collingwood Shipbldg Co., Kingston | 16 | 3,890 | 185.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | " | 11 | May 6, 1920 | ..... | ..... |
| 59 | ..... | ..... | Nova Scotia Steel & Coal Co. | 8 | 2,800 | 190. | 532,000 | 2.d., p., b. and f'c's'le | Lloyd's | 8½ | May 4, 1920 | ..... | ..... |
| 60 | Feb. 2, 1920 | Canadian Challenger | Davie Shipbuilding & Repairing Co. | 476 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | May 14. 1920 | ..... | ..... |
| 61 | Feb. 26, 1920 | Canadian Harvester | Port Arthur Shipbuilding Co. | 45 | 3,890 | 182.50 | 709,925 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 11 | Mar. 30, 1920 | ..... | ..... |
| 62 | April 7, 1920 | Canadian Transporter | J. Coughlan & Sons | 20 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 63 | April 7, 1920 | Canadian Freighter | " | 21 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 379,470½ | | $72,934,448.53 | | | | | | |

# Canadian Pacific Ocean Services s.s. Empress of Canada.

The launching of this steamship for the C.P.O.S. trans-Pacific service, has been set for Aug. 17, at Glasgow, Scotland. Arrangements for building this ship were made with the Fairfield Shipbuilding & Engineering Co. in 1916, but there was unavoidable delay in proceeding with the work on account of the war and its after effects. The christening will be performed by Mrs. G. M. Bosworth, wife of the Chairman, C.P.O.S., Montreal, who sailed from Canada by the s.s. Victorian July 14, and Mr. Bosworth will sail early in August. On completion, the s.s. Empress of Canada will proceed from Glasgow to Liverpool, whence she will sail on a world circling trip, stopping at numerous ports, including Port Said, Suez, Bombay, Colombo, Singapore, Batavia, Manila, Yokohama, etc., and she is expected to arrive at Vancouver in June, 1921, after which she will be operated between Vancouver, Japan, China, and Philippine Islands.

The s.s. Empress of Canada will proceed from Glasgow to Liverpool, where the cruise on a world circling trip will commence about Mar. 15, 1921, visiting various ports and allowing time for sight seeing and shore excursions. Visits will be made to the following ports: Gibraltar, Monaco, Naples, Port Said, Suez, Bombay, Colombo, Singapore, Batavia, Manila Hong Kong, Shanghai, Kobe, Yokohama, and thence to Vancouver, the fares for the entire journey ranging from $1,500 for a 4 berth outside cabin on D deck to $12,600 for suites. Fares up to $2,000 include $200 accommodation on any C.P.O.S. ship across the Atlantic, over $2,000 include $250 accommodation, and those desiring to travel by any other Atlantic line on the return journey will be allowed $100. The fares include railway tickets on the American continent, but not meals, or sleeping berths, or any expenses in Europe, or any shore excursions. An allowance of $25 will be made for passengers joining the ship at Monoca instead of Liverpool, but their expenses to Monaco must be paid by themselves. Those desiring to leav the ship in China or Japan may proceed in a later C.P.O.S. steamship to Vancouver within 12 months from leaving Liverpool. The Empress of Canada is expected arrive at Vancouver about June 3, 1921, and a special train will be run across Canada for those anxious to return to Europe quickly.

She is built with cruiser stern, and with bilge keels of the most recent type, which will reduce rolling to a minimum, and she will be equipped with turbine engines capable of developing a speed of 22 knots an hour, using oil fuel.

Her dimensions are approximately,—length over all 644 ft., length b.p. 625 ft., breadth 77 ft., depth 53 ft., tonnage 21,000 gross. Her construction will embody all the latest improvements, and special attention is being given to the interior fittings. The first class entrance and stairway amidship will lead with a wide double flight from the entrance on A deck down to the dining room on D deck. The entrance on A deck will be panelled in wide and narrow alternating panels running the full height of the deck and tinted in light cream. The balustrades to the well and staircase will be of polished Honduras mahogany of Georgian design, and the staircase will lead in a wide sweeping flight to the after end of the dining saloon. The entrance will be linked up to all the principal public rooms on A deck, with a wide and well lighted gallery. The cabin dining saloon on D deck will be approached by a main stairway of similar character, the aim being to make the room as light as possible and to give it the utmost appearance of height, by means of long vertical panels. The center portion will be carried up in a well the full height of C deck and will be bounded by an arcaded clerestory. At the forward end of the room the whole of the upper portion of the bulkhead will be covered by a large specially woven piece of modern tapestry. The center raised portion of the room will be decorated to represent the inner courtyard of an old coaching inn of the 16th century, the sides of the well being supported by massive oak posts, and the whole will be lighted by projecting oak oriel windows giving on to passages on each side. The open air illusion will be increased by painting the ceiling in a sky effect, and by covering the floor in lino tile designed as stone paving. The cabin lounge will be a paint-scheme in delicate and varied colors. By discarding the use of metal casings, for large teak windows, greater light will be obtained than usual, and the room will be well lighted from the port and starboard sides, by groups of large windows proportionate in size to the area of the room. At the forward end doors will lead into the card room and writing room, the former to be panelled in French walnut with veneered and quartered panels, and the latter furnished in the William and Mary style, and panelled in African black bean, a wood at present very little known or used. The drawing room will be in Queen Anne style, panelled in mahogany framing with veneered panels. The center portions will be considerably higher than the average, with a large flat circular bay on the starboard side with two recesses for writing, etc. The smoking room will be Jacobean in character, panelled in oak with antique finish, and surmounted by a fretted cornice. The children's room will be panelled in polished birchwood, surmounted by a pictorial frieze illustrating nursery rhymes, the ceiling being specially painted to illustrate the planetary system, giving the names of the various planets, etc.

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**Vancouver Drydock.**—A Vancouver, B. C., press dispatch of July 21 stated that the contract between the Dominion Government and J .Coughlan & Sons Ltd., for building a drydock on Burrard Inlet, had been signed, and that work would be started within 60 days. The order in council authorizing this contract, and giving particulars of its terms, was published in Canadian Railway and Marine World for March, pg. 156, and some additional particulars were published in April, pg. 211.

**Kingston Harbor.**—Sir Henry Drayton, Minister of Finance, who represents Kingston, Ont., in the House of Commons, is reported to have written the Kingston Board of Trade recently, that he had been informed that the Public Works Department had authorized the removal of approximately 41,533 cu. yds. of material to be dredged from Kingston harbor, and that tenders would be called for immediately.

## Imperial Shipping Committee.

A London, Eng., press dispatch states that the British Government has appointed a committee, consisting of representatives of Great Britain and the various British dominions and colonies, to be known as the Imperial Shipping Committee, and on which Canada is represented by Sir George H. Perley, High Commissioner in England, and Newfoundby Sir Edgar R. Bowring. The duties of the commission are:—(1) To enquire into complaints from persons and bodies interested with regard to ocean freights, facilities, and conditions in the inter-imperial trade, or questions of a similar nature referred to them by any of the nominating authorities and to report their conclusions to the governments concerned. (2) To survey the facilities for maritime transportation by such routes as appear to them to be necessary for trade within the empire, and to make recommendations to the proper authority for the co-ordination and improvement of such facilities with regard to the type, size, and speed of ships, depth of water in docks and channels, construction of harbor works, and similar matters.

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## Junior Hydrographer for Naval Service Department.

The Civil Service Commission invites applications for appointment as junior hydrographers, at an initial salary of $1,680 a year, which will be increased upon recommendation for efficient service at the rate of $120 a year until a maximum of $2,040 has been reached. This initial salary will be supplemented for the present fiscal year by the bonus provided by law. Duties.—Under direction, to assist in making surveys of shore lines and sea, lake, and river bottoms, to supervise the work of small parties in the field; and to perform other related work as required. Qualifications. —Graduation in engineering from a school of applied science of recognized standing; two years of experience in hydrographic survey work; tact, good judgment and ability to manage men; good physical condition. Examination.—Subjects and weights, as follows: Education and experience, 3; oral interview, if necessary in the Commission's opinion, 1. The only vacancy at present in this class is at Ottawa, in the Hydrographic Branch Naval Service Department.

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**Government's Canal Policy.**—The National Liberal and Conservative Party's policy, announced at Ottawa, July 1, contains the following:—"Such further development of the existing canal systems of Canada as is necessary to improve navigation and cheapen transportation; with the additional object in view of developing the production and use of electrical energy for domestic, agricultural, municipal, industrial and railway purposes, and under such prudent regulations as will thoroughly safeguard the interests of the people."

**Vancouver Harbor Commission Salaries.**—A Dominion order in council has been passed, approving a bylaw passed by Vancouver, B.C., Harbor Commissioners, fixing the following yearly salaries from Mar. 1, 1920: Secretary, $4,500; Chief Engineer, $4,500; Assistant Chief Engineer, $3,000; Harbor Master, $3,600; Port Warden, $3,600; Chief Accountant, $3,000; Assistant Chief Accountant, $2,-400; Wharf Superintendent, $2,400.

# General Shipbuilding Matters Throughout Canada.

**Canadian Allis-Chalmers Ltd.**, Bridgeburg, Ont.—The s.s. North American, which was launched by this company recently, is to be operated in the coast service out of New York, by the North American Line. She is of the same type of steel steamship as adopted by the Imperial Munitions Board, for 3,500 tons d.w., two of which, viz., War Magic and War Vixen, were built by this company. Another ship of this type is under construction at Bridgeburg, for coast operation, by the same owners.

**Canadian Vickers Ltd.**, Montreal. — The s.s. Loch Tay, completely recently for Norwegian interests, after running her trial trips early in July, took on an oil cargo at Montreal, and sailed for Norway.

**Chester Basin Shipbuilding Co.**, Chester Basin, N.S., launched the 3 masted schooner Mary L. Oxner, 200 tons register, at the end of June, for W. Duff, M.P., Lunenburg, N.S. The company has another similar ship on the stock for the same managing owner and it was expected to be ready for launching by the end of July.

**J. Coughlan & Sons**, Vancouver, B.C.—The s.s. Margaret Coughlan, some details of which were given in our last issue, and an illustration of which is published in this issue, was built by this company for Canada Western Steamships Ltd., one of its subsidiaries, and sailed from Vancouver, June 19, provisioned and ready for sea, for Chemainus, Genoa Bay, B.C., and Bellingham, Wash. where she loaded railway ties for Grangemouth, Scotland. This is said to be the first ocean going steel freight steamship built in Vancouver, by a local firm, and operated by a Vancouver company. She is of 8,800 d.w. tons capacity, and fitted with Kincaid engines, burning oil fuel, and during her trials she attained 13.69 knots an hour, with half her propeller out of the water, her average on the run to her loading port, 60 miles, being 12.23 knots an hour.

The s.s. Indus, builder's yard no. 16, which was launched June 30, has been bocught by J. A. Sturrock, on behalf of the Sweedish East Asiatic Line, Gotenberg, Sweden. She underwent her trial trip July 20, and later proceeded to a U. S. Pacific port to load flour and grain. She is of the same dimensions, tonnage, etc., as the s.s. Margaret Coughlan, details of which were given in our last issue, which is illustrated in this issue, and which was built for Western Canada Steamships Ltd., a subsidiary of the building company.

**Dominion Shipbuilding & Repair Co.**, Toronto, launched the s.s. Floraba for the Gulf Navigation Co., New Orleans, La., July 7, the christening being performed by Mrs. G. Abaunza, wife of that company's President. The Floraba is a sister ship of the s.s. Gonzaba, the launching of which was mentioned in our last issue.

**William Lyall Shipbuilding Co.**, which operated a wooden shipbuilding yard at Vancouver, B.C., while building vessels for the British Government and others, during the war, has obtained judgment there for $1,343,015, against R. Van Hemelrick, agent for the Belgian Government, in connection with an order for 6 five masted schooners, the purchase of which was cancelled before delivery could be made.

**Midland Shipbuilding Co.**, Midland, Ont., is building a steel cargo steamship of the lake type, with raised quarter deck, to British Corporation's requirements for lake and ocean service, for Great Lakes Transportation Co., Midland, Ont. Her dimensions are,—length over all 259 ft., length between perpendiculars 246 ft., breadth 42½ ft., depth 21 ft. She will be equipped with triple expansion engines, with cylinders 18, 30 and 50 in. diar. by 42 in. stroke, 1,000 i.h.p., built by Great Lakes Foundry & Machine Co., Midland, and supplied with steam by a Scotch boiler 13 ft. diar. by 11 ft. long, at 180 lbs., built by John Inglis Co., Toronto. She will have a speed of about 10 knots an hour, when loaded. The keel was laid Mar. 1, and when she is launched, which is expected to be about Sept. 1, she will be named Glenclova.

Steel Cargo Steamship, Margaret Coughlan, approximately 8,800 d.w. tons, built for Western Canada Steamships Ltd., by J. Coughlan & Sons, Vancouver, B.C.

**Nixon Construction Co.**, Vancouver, B. C.—The C.P.R. has ordered a car barge and steam tug from this company for service on Okanagan Lake. The barge will have two tracks, with rail capacity for 8 cars, and there will be a steam winch at the after end between the tracks for loading and unloading at landings where there is no engine crew to do the work. There will be a watertight transverse bulkhead about 24 ft. from the bow and the stern respectively. The track bulkheads will be built up from top of the floor timbers to the under side of the deck, the material used being 6½ x 12 in. 50 ft. coast fir, scarfed in the usual way; floor timbers 4 x 12 in. x 36 ft., placed 2 ft. centers. The bottom is of 3 x 14 in. x 50 ft. planking running fore and aft, and the sides are stiffened with a truss of 5 posts, supporting a top run of 1¾ in. rods, and a deck lead of 1½ in. rods between each post. The estimated tonnage is 450 gross. The dimensions are,—length of deck, 184 ft.; length over all, 185 ft. 4½ in.; beam at side planking 36½ ft.; beam at side nosing, 37 ft.; depth over all at side, 6 ft. 11½ in.; crown of deck 6 ft.

The tug boat will be of coast fir throughout, except the heads, and it will be sheathed with cedar. The hull will be planked with 2½ in. and the ceiling with 2 in. coast fir. The hull will be salted and will also be protected with galvanized sheets, 16 gauge, to enable the boat to operate in 10 in. of ice, should it be necessary. The propelling machinery will consist of a single set of compound vertical condensing type engines, built by Polson Iron Works, Toronto, of 27.3 n.h.p., with cylinders 12 x 3 x 6 in. stroke, driving a single screw about 80 in. diar. Steam will be supplied by a marine cylindrical type boiler, with two furnaces, at a working pressure of 160

lb. The condenser will be of the jet type 10 x 18 x 12 in., and there will be 2 duplex pumps, one 6 x 3¾ x 7 in. and the other 5¼ x 3 x 6 in. The lighting plant will be a Sisson 4 k.w. 55 volt machine and the boat will be electrically lighted throughout and carry one search light mounted on top of the pilot house.

**Sorel Shipbuilding & Dry Dock Co., Ltd.**, Sorel, Que.—The sale of this insolvent company's immovable properties, situated at various points in the province, took place July 15, and there were also sold 2 schooners, nos. 25 and 26, lying in the company's yard at Sorel.

**The Toronto Shipbuilding Co. Ltd.**, Toronto, which was incorporated in 1918, under the Ontario Companies Act, to build wooden steamships, chiefly during the war emergency, and which carried out contracts for two such ships, viz., War Ontario and War Toronto, for the British Government, under orders from the Imperial Munitions Board, has surrendered its charter, and the company has been dissolved. J. E. Russell, contractor, Toronto, was chiefly interested.

**Victoria (B.C.) Shipowners Ltd.**, Victoria, B.C.—The four masted barkentines which are being built by this company at the Cholberg yards, Victoria, under aid by the Dominion Government, will, it is stated, be built so that auxiliary power may be added later. It is said that shaft logs will be built into the hulls, suitable for twin propellers. Keels of the first three ships have been laid, and construction will proceed on the three together.

The further supplementary estimates for the year ending Mar. 31, passed at the Dominion Parliament's recent session, contain the following item:—To provide, by way of advances to Victoria (B.C.) Shipowners Limited, for the construction of four ships at an estimated cost of $250,000 each, not less than 60% of the workmen employed in such construction to be returned soldiers; advances to be made on progress certificates under the supervision of an engineer of the Marine Department and not to exceed $175,000 on each ship. Such advances to be secured by first mortgage on the ships and to be repayable with interest at the rate of 6% per annum, such interest to be a first charge on the aggregate net operating revenue from the ships. Also to provide salary of a Government inspector at a rate not exceeding $250 a month, $703,000.

The first annual meeting of shareholders was held July 8. The report, which was presented and adopted, referred chiefly to the agreement with the Cholberg Shipyard for the immediate construction of three ships, it being left to the company to decide whether three or four will be built under the agreement, much depending on the cost of construction. In the company's agreement with the Dominion Government, under which aid is granted for building ships, provision is made for the construction of four, and $175,000 for each of the four is being advanced by the government on mortgage, bearing interest at 6% per annum. Brigadier General R. B. Clark was added to the board of directors.

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A Winnipeg press dispatch of July 21 states that the Dominion Public Works Department was to start dredging the Red River about the end of the month, within the city limits, so as to make it navigable for the larger steamboats from Lake Winnipeg. No dredging has been done in the river since 1915.

# Mainly About Marine People.

A. H. Allan, Freight Manager, Canadian Pacific Ocean Services, Ltd., Liverpool, Eng., has resigned. It is reported that he will return to Canada shortly, and that he will probably undertake steamship work in New York.

**Hugh Allan**, formerly of the Allan Steamship Line, Mrs. Allan, and Miss Rachel Allan, who have been spending some time in Canada, left Quebec, July 14, for England.

**Hon. C. C. Ballantyne**, Minister of Marine and Fisheries, and of Naval Service, which positions were vacated by Sir Robert Borden's resignation of the Premiership, was re-appointed to the same positions in Hon. Arthur Meighen's administration, and sworn in at Ottawa, July 10, leaving immediately afterwards for a rest at St. Andrews, N.B. An Ottawa dispatch says that he will leave for the Pacific coast about Aug. 10, to look into harbor, fishery and other matters, visiting Vancouver, Victoria and Prince Rupert.

E. H. Beazley, Managing Director, Union Steamship Co. of British Columbia, who was killed in an aeroplane accident at Minor Park, Lulu Island, B.C., May 24, left an estate valued at $77,550, consisting of his home at Shaughnessy Heights, Vancouver, shares in B.C. Marine Ltd., and insurance. A life interest is left to the widow, with remainder to three children. As the result of an enquiry into the accident, by the Canadian Air Board, Major A. C. Baker, who operated the machine, was held to be responsible for Mr. Beazley's death, having attempted to carry out a spin without being able to regain control, in contravention of the Air Board's rules, and the Pacific Aviation Co. was also blamed for not observing the air regulations.

**Mrs. G. M. Bosworth**, wife of the Chairman, Canadian Pacific Ocean Services, Ltd., left Montreal July 14 for Great Britain. She will christen the company's new ship Empress of Canada, which will be launched at Glasgow on Aug. 17. Mr. Bosworth will leave for Great Britain on Aug. 4.

**Charles Dennehy**, Assistant Manager, Pacific Steamship Co., Vancouver, B.C., died towards the end of June from injuries sustained at a fire in his apartment, when he made a plucky but unsuccessful leap for life. He was for some time in charge of the Returned Soldiers' and 7th Battalion Clubs, and was also a member of the Amputation Club. The funeral, which was of a military character, was attended by representatives of the various steamship and railway companies in the province.

**E. Edwards**, heretofore surveyor of shipping for the Great Lakes Register, Cleveland, Ohio. is reported to have been appointed Lloyd's representative for British Columbia at Vancouver, vice John Whitehead, who has been transferred to England.

**H. S. Folger**, formerly General Manager, St. Lawrence River Steamboat Co., and Thousand Island Steamboat Co., now owned by Canada Steamship Lines Ltd., died at Kingston, Ont., July 8, aged 53, following a stroke of paralysis. He was born in the U.S. and entered the steamboat business conducted at Kingston by Folger Bros., of which firm his father was the head. He eventually became General Manager of the two steamboat companies named, and after the acquirement of these properties by Canada Steamship Lines he carried on a general brokerage business in Kingston and acted as Deputy U.S. Consul there.

**Luke Murray Hatfield**, whose appointment as Assistant Marine Superintendent, Canadian Government Merchant Marine Ltd., Montreal, was announced in our last issue, was born at Yarmouth, N.S., Apr. 4, 1880, and entered navigation service in 1896, since when he has been, to 1898, seaman on sailing ship Lansing, trading foreign; 1898 to 1899, on Canadian coasting freight and passenger steamships, Hugh Cann & Son, Yarmouth, N.S.; 1899 to 1901, second officer, freight and passenger steamships, Yarmouth, N.S., and Boston, Mass., Yarmouth Steamship Co., Yarmouth, N.S.; 1901 to 1909, second and first officer, cargo steamships, trading foreign, William Thomson & Co., St. John, N.B.; 1909 to 1911, master, cargo steamships, trading foreign, same company; 1911 to 1912, master, freight and passenger steamships, New Orleans to Honduras, Vaccaro Bros., New Orleans, La.; 1912 to 1914, master, cargo steamships, trading foreign, William Thomson Co., St. John, N.B.; 1914 to 1915, master, cargo steamships, trading to Hudson Bay, Dominion Government; 1915 to 1916, master, Canadian coasting freight and passenger steamships, Hugh Cann & Sons, Yarmouth, N.S.; 1916 to 1918, master, cargo steamships, trading foreign as transports, William Thomson & Co., St. John, N.B.; 1918 to 1920, master, cargo steamships, Canada to Mediterranean and Great Britain, Imperial Munitions Board, E. C. Downing, Manager, Cardiff, Wales.

**H. E. A. Hawken**, heretofore Chief Registrar of Shipping, Marine and Fisheries Department, Ottawa, who, since the superannuation of Cameron Stanton, Assistant Deputy Minister of Marine and Fisheries, on Mar. 31, has been acting in the latter capacity, has been appointed Assistant Deputy Minister. He was born Sept. 28, 1879, and entered the civil service Jan. 7, 1902.

**J. C. Irons**, local manager, Union Steamship Co. of New Zealand (Canadian-Australian Royal Mail Line), Vancouver, B. C., was married in Scotland July 8 to Mrs. M. S. Rearden of Vancouver, and will return to Vancouver during August.

**Alex. Johnston**, Deputy Minister of Marine and Fisheries, left Montreal, July 13, with a number of Dominion Steel Corporation's directors, for Halifax, where a special general meeting was held July 15, after which the party proceeded to New Glasgow and Sydney.

**P. J. Melvin**, at one time Export Freight Agent, Canadian Pacific Ocean Services, Montreal, and latterly with Marine Navigation Co. of Canada, Ltd., has commenced business in conjunction with J. Mauro and J. D. Willaims, of St. John, N.B., as the Atlantic and St. Lawrence Stevedoring and Contracting Co., Ltd. Office, 167 Commissioner St., Montreal.

**J. W. Norcross**, President, Canada Steamship Lines Ltd., will, it is reported, be also deputy chairman of the board of directors, and chairman of the executive committee of the British Empire Steel Corporation, to which the Canada Steamship Lines Ltd. is to be leased.

**F. Ruddock**, formerly of F. & J. Ruddock, shipbuilders, St. John, N.B., died there July 10, aged 82.

# The C. P. O. S. Steamship Empress of Britain Being Reconditioned for Regular Service.

An interesting feature of the present reconstruction period is the reinstating of the large passenger ships which by reason of their speed and radius were able to serve for cruiser patrol and convoy escort duty during the war. The C. P.O.S. Empress of Britain, commissioned in Aug., 1914, served on the South Atlantic patrol, and after close on a year of service was fitted out as a transport carrying troops to the Dardanelles, Egypt and India; also from Canada for the western front during the remainder of the period of hostilities. The nature of the service may be appreciated from the fact that she was able to accommodate 5,000 officers and men, in addition to her own complement.

The Canadian Pacific Ocean Services, Ltd., which placed her in the hands of her builders, the Fairfield Shipbuilding & Engineering Co. of Glasgow, Scotland, for reconditioning and the carrying out of extensive alterations which have as an object the provision of most luxurious and up to date conditions for passengers, have also arranged for her conversion from coal to oil fuel burning. The bunker capacity sufficient for round voyage requirements, Liverpool to Quebec, viz., 3,500 tons, has been obtained by converting the original coal bunkers for the carriage of fuel oil. The boilers, which are contained in two separate watertight compartments, are of the multitubular return tube (Scotch) type, there being 6 double ended and 4 single ended, with a total of 60 furnaces. All boilers are under Howden's system of forced draft and supply steam at a pressure of 200 lb. a sq. in. The indicated horse power of the twin quadruple expansion engines is 18,000. With oil fuel burning there is an increase in boiler efficiency of 7%, while the utilization of the whole of the furnace perimeter throughout the length, as effective heating surface, results in improved circulation, and diminution of the distorting strains which cannot be avoided under the conditions of coal burning.

Owing to the higher calorific value of oil, the evaporation is considerably increased and the weight of oil in comparison with coal required for equivalent evaporation is in the rough proportion of 2 to 3. The increase in propulsive efficiency which results from maintenance of steady head of steam, in comparison with the inevitable drop during period of cleaning coal fires, and fuel economy by elimination of disposal of ashes at sea, are important features governing the adoption of oil burning. With this vessel under conditions of coal burning it was necessary to discharge overboard 30 tons of ashes a day.

The cleanliness of machinery spaces where oil fuel is used is well known, and a definite saving is effected in handling of stokehold bilges, while the reduction in upkeep expenses due to lower deterioration of structure is appreciable. It will be seen that from the labor point of view the stokehold complement work under conditions improved to an extent which render them incomparably more comfortable than they were when undertaking the arduous duties associated with coal firing. The laborious work of coal trimming is replaced by pumping, and the old-time fireman becomes a boiler attendant, who, under the guidance of the engineer officer, regulates the supply of oil to the boiler furnaces and attends to the cleaning of the oil burners.

The bunkers are being arranged for the carriage of fuel oil of a minimum flash point of 150° F., and special provision is being made for the efficient carriage and handling of heavy grade Mexican fuel oil. The suction pipes are large bore, for assistance in pumping, mains being 8 in. bore, and branches to bunkers 4 in. bore. Heating coils are being fitted in the bunkers, to ensure maintenance of the necessary fluidity when in cold climates. The system of working is generally as follows: Oil transfer pumps draw from fuel bunkers and discharge to settling tanks of a capacity sufficient for 24 hours supply. Oil fuel pumps draw from settling tanks, through suction strainers, and discharge through heaters to burners which are arranged in the boiler furnace fronts. Oil filters are fitted in the line of discharge from heaters to burners and oil meters for measuring quantity used are also incorporated in the pipe lines. The system adopted is on the Wallsend-Howden principle, burners being Dahl patent.

For normal working, oil is heated to 200° F. and delivered to burners at a pressure of 100 lb. a sq. in. This combination, in conjunction with burner nozzle, which is arranged to give conical spray, ensures the degree of atomizing of the oil which is essential for the obtaining of complete combustion. This atomizing is an important factor in oil burning, as, should large globules of oil enter the furnaces, the outer skin only becomes charred, resulting in an oily mass being deposited in the smoke tubes.

Each boiler room has its own separate equipment, comprising one oil transfer pump of the Weir's vertical type, and oil fuel sets in duplicate, each consisting of Weir's pump and oil fuel heater of capacity suitable for the supply of one complete section of boilers. The feed pumps are Weir's horizontal type cast iron fitted, while heaters are capable of raising temperature of oil to 320° F., when working under steam supply, at the pressure of the exhaust, which is normally 5 lb. a sq. in. There are therefore 4 separate oil fuel sets, and each has a designed capacity of 12,500 lb. oil an hour. The oil circuits are arranged to facilitate warming up, prior to starting all or any of the boilers which may have been out of use, and the fuel may be circulated past the burners, after passing through the heaters. Valves for regulating supply of oil to burners have been grouped for convenience in handling.

The air supply requisite for combustion of the fuel is delivered to furnaces under Howden's system of forced draft by eight 72 in. double inlet fans of the centrifugal type, each driven by 30 b.h.p. protected type adjustable speed motors, shunt wound with series steadying turns, speed of revolution being 500 per minute on 100 volt circuit. For convenience in starting, after ship has been in port some days, special lighting up heaters are provided, these being Admiralty T. B.D. type. To facilitate ready checking of combustion conditions, a system of smoke observation mirrors is included, and the operating staff will therefore be able to verify adjustments for economy without leaving the boiler room.

Special attention is being given to the lighting and ventilation of boiler rooms, while the painting of spaces, hitherto dark and dirty, as is inevitable with coal burning, will make for increased efficiency in operation.—Marine Engineer and Naval Architect, London, Eng.

The Empress of Britain will be put in the Liverpool-Quebec service, leaving Liverpool, Sept. 1, on her first voyage after being re-fitted, etc. In addition to being converted to a fuel oil burner, as stated above, she is being completely refitted, 4 additional suites being placed forward on the upper promenade deck, and 2 in the center, and 4 more single cabins with baths are being installed. Ten single cabins have been added on the lower promenade deck, and 24 single rooms have been added on the deck below the lower promenade deck. The third class accommodation has been thoroughly overhauled, and subdivided.

## Sir Thomas Fisher on the C.P.O.S. Ltd.

London, Eng., July 3. — Sir Thomas Fisher, K.B.E., Manager, Canadian Pacific Ocean Services, Ltd., returned from Montreal last week by the R.M.S. Empress of France. Speaking to a press representative, he said: "My visit was for the purpose of reporting to and consulting with the Chairman and directors. The establishment of a direct passenger service between Canada and Italian ports was one of the matters under consideration, also that of additional shipbuilding, the cost of which is now becoming so serious that, like other large shipowners, C.P.O.S. will exercise great caution in regard to new construction. As matters stand, no shipbuilder can conclude any definite contract, and the system of payment according to cost of material and labor, plus percentages, makes it impossible to estimate, even approximately, what the eventual actual cost of a vessel will be. Under this system we have had to pay far more than the extreme outside original calculations. Moreover, the great advance in wages has, unfortunately, not meant greater efficiency or celerity in construction."

Questioned as to vessels now under construction, Sir Thomas Fisher said:— "On Saturday (July 3) the Montcalm will be launched by John Brown & Sons, Clydebank, and will, I can only hope, be ready for service next February. She is an improvement on our Metagama and Melita type of 2-class steamships, and is 500 ft. long by 70 ft. beam, 68 ft. depth from the boat deck, with a tonnage of about 16,200. The Empress of Canada is expected to be launched from the Fairfield yards on the Clyde, and the naming ceremony will be performed by Mrs. G. M. Bosworth, wife of our Chairman. The Empress of Canada will be the finest and fastest vessel crossing the Pacific Ocean. She is intended to make her maiden voyage to Vancouver via the Mediterranean next March, and already many enquiries for the round the world passage are being made. Our Transatlantic mail steamer, Empress of Britain, which has been practically rebuilt since the war, will, I hope, be ready to leave Liverpool for Quebec on Sept. 1, and will carry three classes of passengers and be fitted as an oil burner."—"Canada."

# Canadian Notices to Mariners.

The Department of Marine has issued the following:—

**Alaska.**—Light buoy 4 has been established off Bar Point, Tongrass Narrows, showing a fixed red light at an elevation of 8 ft. on a scow float with red slatted superstructure.

**British Columbia, Haro Strait, and Boundary Pass.**—The Dominion Government will during this year have the currents in Haro Strait and Boundary Pass examined. The C. G. S. Armentieres will be anchored at different places between Discovery Island and east points. She will display the usual day and night signals for a ship unable to manoeuvre, and in foggy weather will sound one long blast of the whistle followed by two short blasts. Ship masters are requested to keep a lookout for her when in these waters and give her a safe berth in passing.

**British Columbia, Strait of Georgia, Fraser River.**—Three red conical buoys have been established to mark the south side of the new dredge channel north of Westham Islands which leads into the new main channel, north of Brush Island, of the Woodward group. Mariners proceeding by river will, after passing black can buoy 25 head 99° on the alignment of the Woodward range, leaving the three conical buoys on the starboard hand. The dredged cut marked by the above buoys is approximately 5,000 ft. long and 300 ft. wide in center, widening to 500 ft. at each end.

**British Columbia, Vancouver Island.**—The commanding officer of C.G.S. Stadacona reports the existence of a rock on the south side of Pipestem Inlet, off a small islet north of Georgina Point; the north end of Image Island in line with the south end of Refuge Island bearing 290° (s. 85° w. mag.) leads over the rocks; the westernmost peak on Black Mountain bearing 41° (n. 16° E. m) marks the position of the rock, which is 6 ft. wide and about 40 ft. long parallel with the shore, with deep water all round; it is not marked by kelp and has only 1½ ft. of water over it at low tide.

**Cape Breton Island.** — The Fourchu bell buoy, on the southeast coast of Cape Breton Island, has been moved to a new position about 1,500 ft. from Fourchu Head lighthouse.

**Lunenburg.** — The Luenburg Marine Railway Co. is rebuilding patent slips 1 and 2, and building a new slip 3, in Luenburg harbor.

**New Brunswick, Bay of Fundy.**—The fixed white light on Midgik Bluff, at the entrance to Magaguadavic River, Passamaquoddy Bay, has been replaced by an occulting white light, automatically occulted at short intervals. The light is unwatched.

**New Brunswick, Northumberland Strait, Richibucto Cape.**—Without further notice range lights will be established; character, fixed white light; order, 7th dioptric; elevation, 25 ft.; visibility, 5 miles from all points of approach from water; lights in line lead boats of shallow draft into shelter behind the breakwater.

**New Brunswick, St. John Harbor.**—The Partridge Island light and bell boat in St. John harbor, Bay of Fundy, will be replaced by a black steel cylindrical gas and bell buoy showing an occulting white light, in 26 ft. of water, near the east end of Partridge Island.

**Northumberland Strait.**—The front light on the channel range at Richibucto harbor entrance, in Northumberland Strait, has been moved 42 ft. north of its old position and about 665 ft. from the back light.

The north beach range lights in Richibucto harbor, Northumberland Strait, have been moved, the front light on the shore behind breakwater, 58 ft. north of its old position, and the back light about 40 ft. north of its old position, and 345 ft. from the front light.

The bar range lights in Richibucto harbor, Northumberland Strait, have been moved, the front light about 100 ft. east of the old position and the back light about 1,400 ft. east of the old position and 275 ft. from the front light.

**Newfoundland.**—A flashing red acetylene gas light, showing a flash of 0.3 sec. duration, for 3 seconds, has been established at Square Head, on the north side of Bonavista Harbor, Bonavista Bay. The light is at an elevation of 57 ft., on a white square wooden pyramidal tower.

**Nova Scotia, Cape Breton Island.** — The Fourchu whistle buoy, on the south coast of Cape Breton Island, off Fourchu Inlet, has been moved to a new position, a quarter of a mile from Pot rock.

**Nova Scotia, Annapolis.** — The fixed white electric light on the outer end of government pier, Annapolis wharf, has been discontinued.

The Bass Rock buoy, consisting of a red wooden spar, in 54 ft. depth, and the Frying Pan Bar buoy, consisting of a black wooden spar, in 48 ft. depth, have been established in the Canso harbor approach.

Eight spar buoys, 4 red and 4 black, have been established to mark the channel from the point of beach, opposite Shingle Point lighthouse, northward to Grants Island ledge, at Port Herbert.

**Nova Scotia, southeast coast,** entrance to Prospect Harbor.—On rock at eastern end of Saul's island, a gas beacon has been established showing an occulting white acetylene light, automatically occulted at short intervals, and consisting of a red lantern on a white pole with black steel tank at base; the light is unwatched, has an elevation of 28 ft., and is visible for 7 miles from all points of approach.

**Ontario, Bay of Quinte.**—Without further notice, the fixed white light on the pier, on the north side of the channel, will be replaced by an occulting white acetylene light, automatically occulted at short intervals. The light will be unwatched.

**Ontario, Georgian Bay.**—Change in position of range lights,—front light, on east side of mouth of Nottawasaga River, 247 ft. northeast of old site; back light, 264 ft., 111° 10′ from front light; the alignment leads over the bar outside the mouth of the river, with a least depth of 5 ft.

**Ontario, Lake Huron and Georgian Bay.**—A new edition of sailing directions for Canadian shores on Lake Huron and Georgian Bay, has been published by the Naval Service Department's Hydrographic Survey. Price 25c.

**Ontario, Lake Huron, Georgian Bay.**—Beacons in the inside channel, between Penetanguishene and Parry Sound, have been rebuilt, as follows: Red Rock beacon, on summit, white wooden, diamond shaped, slatwork daymark; Kerr Island beacons, on south shore of island, white, wooden, diamond shaped, slatwork daymarks; Kings Bay (Big Davids Bay) beacons, on south shore of island, south of Kings Bay, white, wooden, diamond shaped, slatwork daymarks.

**Ontario, Lake Ontario.** — While improvements are in progress in Toronto harbor, mariners are warned that they must use caution when approaching these works. All sunken obstructions are marked by white lights from sunset to sunrise, and all danger areas buoyed according to regulations. Mariners wishing to berth at the Canada Steamship Lines westerly dock, will find not less than 16 ft. of water between the buoys and the mainland.

**Ontario, Lake St. Clair.**—Without further notice, the gas buoy that was adrift will be replaced on its former position, at the outer end of the dredged cut, 1½ miles 320° 30′ from the Thames River main light.

**Ontario, Lake Superior,** Thunder Bay, Port Arthur Harbor.—On or about June 1, the occulting white light on the cribwork block, 31 ft. from the south end of the northerly breakwater, will be changed to an occulting red light.

**Ontario, Lake Superior.**—An auxiliary hand fog horn has been placed at the lighthouse at Davideaux Island, on the south side of Michipicoten Island, and will be sounded should the fog bell become disabled.

The light on the northwest extremity of Otter Island will be re-established without further notice. Its character will be flashing white catoptric, showing one flash every 8 seconds, for half the time between flashes, or 4 seconds. The light will be totally eclipsed for the remainder of the time, a fixed light of 450 c.p. will be visible through which the stronger flash will show, the naked light will be 450 c.p. and the flash 20,000 c.p., the illuminant being petroleum vapor burned under an incandescent mantle.

**Ontario, Ottawa River.**—A black wooden spar buoy has been established on the north edge of shoal, about 3,750 ft. west of Carillon dam, at the west entrance to Carillon Canal.

**Prince Edward Island,** North Rustico Harbor.—A red bell buoy, of the steel cylindrical type, marked Rustico, in white letters, has been established off the entrance to the harbor, 1½ miles from North Rustico main light.

**Prince Edward Island,** Northumberland Strait.—Whistle buoy off the south extremity of Tryon shoals has been replaced by a red gas and bell buoy, of the steel cylindrical type, showing an occulting white light.

**Prince Edward Island, Northumberland Strait, Little Sands.**—On shore, at inner end of breakwater, a fixed red light, 7th order, dioptric Chance duplex lamp, at an elevation of 54 ft. on a white square wooden tower 13 ft. high, has been established, visible from all points seaward.

**Quebec, Gulf of St. Lawrence.** — The submarine bell buoy off Fame Point, about half a mile north of the lighthouse, has been withdrawn.

**Quebec. Lower St. Lawrence River.**—During June, July, August, September and October the Geodetic Survey Branch of the Interior Department will be using signal lamps for surveying purposes along the north and south shores of the lower St. Lawrence River. Mariners are warned that they must not confuse these

lights with aids to navigation. Search lights may be set up at the following points—north shore, Iberville, Lavalle, Bersimis, Manikonagan, St. Nicholas, St. Augustin, Trinity, Cawee; south shore—Mont Joli, Sandy Bay, Val Marie, Montane, Leclerc, Les Machins, Cap Chat, Edward.

**Quebec, River St. Lawrence.** — The barge Cuba lies sunk in 6½ fathoms of water, 3,750 ft. from Berthier wharf. A green steel cylindrical gas buoy showing an occulting white light has been established 115 ft. from the wreck.

**Quebec, River St. Lawrence.** — The wooden beacon on Wood Pillar Inlet has been destroyed, and will not be rebuilt.

**Quebec, River St. Lawrence.**—The master of the s.s. Gyp reports the extension of a derelict, on June 19, about 11 miles northeasterly from Riviere a la Martre. The derelict is a menace to navigation.

**Quebec, River St. Lawrence, Ship Channel** between Quebec and Montreal.—The pier supporting the front light of the Gentilly range lights has been carried away by ice, and, until further notice, a temporary light has been placed on a platform on piles on the same site.

**Quebec, St. Lawrence River.**—A new edition of the St. Lawrence River Pilot, above Quebec, comprising sailing directions from Quebec to the east end of Lake Ontario, has been published by the Naval Service Department's Hydrographic Survey. Price 25c.

**United States, Lake Huron.**—An auxiliary fog signal has been placed at Fort Gratiot light station on the mainland, at north entrance to St. Clair River. When foggy on river, but clear on lake, diaphone will sound a blast of 5 seconds duration every 60 seconds; no change in steam whistle, which will sound as heretofore when foggy on lake.

**United States, Lake Memphremagog.**—On or about June 10, the fixed red light at Whipple Point will be replaced by a flashing white light, showing a flash of 0.3 sec. duration, every 3 seconds.

**United States, Lake Superior.** — Commencing about May 19, the submarine fog signal at Whitefish Point light station, will be sounded continuously during navigation season.

**United States, Lake Superior.** — The submarine bell, in 30 fathoms, 2,185 yards north of White Fish Point lighthouse, will, after May 25, strike 4 strokes every 16 seconds.

**United States, St. Marys River.**—The east side upper light 6, in the West Neebish channel, has been destroyed, and, until it is rebuilt, a temporary gas buoy, showing a flashing red light, has been established in 22 ft. of water, on the channel bank, immediately above the location of the light.

**United States, St. Marys River.**—Ship masters are advised that, during the next two or three months, a floating plant will be employed by the lighthouse service, in rebuilding structures in the Middle Neebish channel. It is requested that ships exercise care to slow down in passing work of construction, to avoid damage to the floating plant and other work.

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**Age of Stokers.**—The International Congress of Seamen at Genoa, Italy, has decided to place on the agenda for the next conference, a proposal that no seaman under 18 years old be employed as a trimmer, or stoker, on a ship. Another proposal, that no persons under 17 years old be employed on night watches on ships, between 8 p.m. and 6 a.m., did not obtain the necessary two-thirds vote to get a place on the agenda.

## Hudson Bay Navigation.

The Lamson-Hubbard Canadian Co. has chastered the s.s. Thetis for a trip to Hudson Bay ports. The Thetis arrived at Montreal, July 10, from Newfoundland, where the party for the north was completed, and she sailed July 15, with a selected crew, under Captain A. C. Smith, who has had over 20 years experience of Hudson Bay navigation, having been master at different times of the Hudson's Bay Co.'s steamships Nascopie and Pelican. The s.s. Thetis was built at Dundee, Scotland, in 1881, and is screw driven by engine of 98 h.p. Her dimensions are,—length 181.1 ft., breadth 30.9 ft., depth 19.1 ft.; tonnage 828 gross, 396 net. She was originally bought by the U.S. Government, with the s.s. Bear, for the Greeley Relief Expedition, and sent to Cape Sabina, bringing back seven of a party of 25 men, who had been stranded there. She was later acquired by interests associated with Job Bros. & Co., St. John, Nfld., and is owned by the Thetis Steamship Co. Ltd., St. John's, Nfld.

The Hudson's Bay Co.'s s.s. Nascopie sailed from Montreal during July on her annual trip with stores for the company's various trading posts in Hudson Bay and James Bay, etc. The company's s.s. Pelican, which also loaded stores at Montreal for the company's posts, sailed July 9 for the north. The company's s.s. Discovery was stated recently to be in England preparing for its annual trip to Labrador and Bay ports. One of the passengers on the s.s. Nascopie is an Eskimo who is being returned to Chesterfield Inlet, about 400 miles from Fort Churchill, where he is to be tried for murder by a special court to be sent from Canada for the chief purpose of impressing the natives.

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**The s.s. Empress** and the wharf property at Ottawa which were bought by W. H. Dwyer Ltd., Ottawa, for between $21,000 and $22,000 from the receiver of the Central Railway Co. of Canada, are being operated by the Empress Navigation Co., Ottawa, in connection with the Capital Amusement Co., the ship being run between Ottawa, Ont., and Montebello, Que. The Empress Navigation Co. also bought the s.s. Victoria from the Victoria Navigation Co., Thurso, Que., recently, and she is being operated between Ottawa, Ont., and Thurso, Que., daily except Sunday. The s.s. Empress was built at Ottawa in 1873, when she was named Peerless, and was rebult and renamed Empress, at Montreal, in 1886. She is paddle wheel driven by engine of 152 h.p. and has the following dimensions,—length 185.3 ft.; breadth 27.6 ft.; depth 8.1 ft.; tonnage 678 gross, 372 net. She was operated for several years on the Ottawa River in connection with the old Carillon & Grenville Ry., and when this railway ceased operation she was acquired by the Central Ry. Co. of Canada, and operated on the St. Lawrence between the Lachine Rapids and Montreal.

**Beeson's Marine Directory** of the Northwestern Lakes, for 1920, the 34th year of publication, in addition to the customary information as to steamships, both Canadian and U.S., operating on the Great Lakes, contains a number of interesting articles relative to shipping generally. A diagram showing some details of the large ships built during the past 20 years, gives the s.s. W. Grant Morden, owned by Canada Steamship Lines, as the largest steamship on the Great Lakes.

## Steamship Terminal for Sydney, N.S.

Some details were given in a previous issue of Canadian Railway and Marine World, in regard to plans prepared by the Public Works Department for the construction of a terminal dock at Sydney, N.S., on account of which $100,000 has been included in this year's estimates. The total cost of the work is about $800,000. The dock will be built near the old railway pier, at Barrack Point. The wharf will be 540 ft. long, 72 ft. wide, with a berth on each side 350 ft. long by 100 ft. wide, and with a depth of 30 ft. of water at low tide. There will also be a berth on each side, with a depth of water of 20 ft. at low tide, each berth being 150 ft. long by 100 ft. wide. The wharf shed will be 450 ft. long by 40 ft. wide, with a 4 ft. platform on each side at the same level as a freight car floor, with a railway track on each side of the wharf, with 3 ft. clear width between a box car and the outer edge. The wharf will consist of 25 concrete crib piers, filled with stone, and the bridge from the shore will be an earth embankment, with two railway tracks extending to each side of the wharf, and a wagon road leading from the west along the shore to George St.

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**Shipbuilding Statistics.**—For the quarter ended June 30, 3,570,000 gross tons of shipping were turned out of United Kingdom yards, compared with 2,105,000 from U.S. yards in the same period. The total construction of the world for the same period was 7,720,000 gross tons, compared with 8,017,000 tons for the same quarter in 1919. The U.S. shipbuilding report of a year ago showed it to be ahead of United Kingdom shipbuilding by about 1,350,000 gross tons. The average gross tons of the British ships under construction is 4,012, while the average of U.S. ships is 5,609. The United Kingdom and the U.S. are far ahead of all other countries in shipbuilding, the nearest being Holland, with an output for the quarter ended June 30 of 400,000 tons, Canada being next with 40,000 tons.

**Drifter Sales.**—Canadian Railway and Marine World, for July, stated that the Anderson Co. of Canadian hold sold T.R. 59 to T. M. Kirkwood, Montreal, and that he had arranged options on a further nine through the Naval Service Department. We are advised that the sale was made direct by the Naval Service Department, which has also sold drifters 61 and 99 to the same buyer, who has an option on a further number. T. M. Kirkwood states that these drifters cost originally $84,000 each, and he is offering them, newly painted and ready for sea, at $16,000 each at Halifax, N.S., or $17,000 delivered at any port to the head of Lake Superior. The Naval Service Department has also sold drifeters 70 and 95 to Capt. Alex. Smith, Dartmouth, N.S.

**Marine Public Works Contracts**—The Dominion Public Works Department has awarded the following contracts:—June 24, Rebuilding of wharf at Little Current, Manitoulin Island, Ont., Wm. Bermingham, Kingston, Ont., schedule of prices; July 2, Dredging at Port Arthur, Ont., Canadian Dredging Co., Midland, Ont., class B, 28c. a cu. yd., scow measure; July 5, Dredging, quarantine station, Williams Head, B.C., main and coal wharf, Pacific Coast Construction Co., Vancouver, B.C., class B, 48c. a cu. yd. in situ.

## Atlantic and Pacific Ocean.

R. P. Houston & Co., Liverpool, Eng., operating the Houston Lines, is reported to have decided to operate steamships between Montreal, Port Said, Suez, Aden, Suda, Bombay, Colombo, Karachi, Madras, and other eastern points.

The New Zealand Shipping Co. is reported to have arranged for the operation of a direct line of steamships between Montreal and ports on the Red Sea, East Indies, the Straits Settlement and Java, the new line to be known as the Ellerman-Bucknall Canada-India-Java service.

It is reported that the Cunard Steamship Co. will have one of the greatest steamship terminals in the world, it having secured about 1,100 ft. of water front along the Hundson River at Weehawken, N.J., where it purposes laying out the most complete and up to date terminal facilities.

The s.s. Kronprinz Frederich Wilhelm, one of the former German passenger steamships, which was allocated to Canadian Pacific Ocean Services, Ltd., has been overhauled and equipped for fuel oil burning and is now in the company's Atlantic service. Her dimensions are,—length b.p. 589.9 ft., breadth 68.3 ft., depth 38.6 ft.; tonnage, 17,082 gross. She sailed from Liverpool July 14, and arrived at Montreal July 24.

The North Atlantic Pacific Conference is reported to have agreed to increase passenger rates to Europe by $15 for first class cabin and $10 for second class. The new scale has been put into effect on all steamship lines operating from New York to the upper European ports. The companies claim that they are compelled to pay extremely high prices for bunker coal, labor and materials generally. Reports indicate that the trans-Atlantic passenger traffic, which has been unprecedented, is slowing down to some extent, but it is stated that nearly all companies are fully booked to the end of August.

## Maritime Provinces and Newfoundland.

The Lunenburg Marine Railway Co., Lunenburg, N.S., has deposited with the Public Works Department, Ottawa, under the Navigable Waters Protection Act, plans of works in Lunenburg harbor, existing and proposed.

The Commercial Cable Co. has completed the erection of new storage sheds at Upper Water St., Halifax, N.S., and it is reported that an additional cable ship will be placed in service shortly, operating from Halifax.

The Newfoundland Government, in dealing with supplementary estimates, at a sitting of the legislature early in July, promised consideration of additional facilities in steamship service with St. Marys and Trepassy, in Placentia Bay.

The Newfoundland Government has bought the s.s. Lobelia from the British Government, and is reported to have bought three other steamships from the U.S. Government, for use in the coastal mail and passenger service in Fortune Bay, Northern Labrador, Humbermouth and Battle Harbor.

The Canadian National Rys. car ferry Prince Edward Island underwent some repairs at Charlottetown, P.E.I., early in July, and later proceeded to Halifax, N. S., where she was docked for hull examination. While she was under repair the car ferry Scotia replaced her on the route between New Brunswick and Prince Edward Island.

The British Board of Trade has recommended that the crew of the Imperial Oil Ltd. s.s. Luz Blanca, which was sunk by German submarines off Halifax harbor Aug. 5, 1918, be awarded a clasp. Two of the crew were killed by shell fire from the submarine, the remainder being rescued and taken to Halifax.

The s.s. Princess, owned by Farquhar & Co., Halifax, N.S., has been sold to Peruvian parties, and is expected to sail from Halifax for Peru during August. She was built in 1896, was for some time in the Newfoundland trade, and was bought by Farquhar & Co. in 1919. She is 542 tons gross, 125 tons net, and has been thoroughly overhauled and refurnished this year.

The Maritime Wrecking Co.'s tug Sarnia City and the Halifax Tow Boat Co.'s tug W. F. Roebling left Halifax during July for Norfolk, Va., where they are taking in tow a sandsucker for use in the St. John, N.B., harbor. The sandsucker is said to be the largest in the world, being of the following dimensions: length 200 ft., beam 80 ft., with about 30 pontoons for carrying pipes.

Canada Steamship Lines Ltd. is stated to have opened its Nova Scotia-Prince Edward Island-Newfoundland service with the sailing of the s.s. Corunna, which was taken to Sydney, N.S., from Montreal about the middle of July, and it is stated that the Corunna will shortly be replaced by the s.s. Mapledean. The s.s. Corunna is owned by the Dominion Iron & Steel Co. and was built at Leith, Scotland, in 1891. She is screw driven, by engine of 99 h.p., and has the following dimensions,—length 230 ft., breadth 34.1 ft., depth 19.7 ft.; tonnage 1,269 gross, 792 net.

The Lunenburg Marine Railway Co. is rebuilding its patent slips 1 and 2, and building a new slip 3, details of which are as follows:—No. 1, lenth over all 120 ft., depth at high water on block, 11½ ft. forward, 16½ ft. aft, with lifting power of 400 tons, it has 2 tracks with cradle; No. 2, length over all 85 ft. and 110 ft., depth on blocks, 11½ and 15½ ft. forward, and 15½ and 18½ ft. aft, with lifting power of 300 and 600 tons, there are two tracks with cradles, which can be coupled into one, making it 195 ft. long; No. 3 will be 180 ft. long on block, 10 ft. deep forward, and 17 ft. aft, with lifting power of 1,000 tons; it will have two tracks with one cradle.

## Province of Quebec.

The Quebec Harbor Commissioners have completed the alterations to shed 18 on the breakwater. An additional story has been built on the front half, with a passage way run from end to end, wide enough to swing a small gangway from the shed to steamship decks at high tide.

The s.s. Vega, owned formerly by the Interlake Steamship Co., Cleveland, Ohio, has been bought by the Port aux Quilles Lumber Co., Montreal, and has been transferred to the Canadian register, under the name of Sapin. She was built in 1906, and is 416 ft. long, with 50 ft. beam, and 4,382 gross tons.

## Ontario and the Great Lakes.

The Brockville-Morristown Transportation Co. is reported to have bought the s.s. Victoria from the Detroit and Windsor Ferry Co., Detroit, Mich., to replace the s.s. H. P. Bigelow, destroyed by fire recently.

The Northern Navigation Co.'s s.s. Hamonic grounded on a reef near Harbor Beach, July 7, during high winds and fog, while on her way to Sarnia. She was released a few hours later, without damage.

The Couchiching lock, on the Trent Valley, Canal, near Washago, was opened for traffic July 6, thus giving direct water communication between Trenton, on Lake Ontario, and Honey Harbor, on Georgian Bay.

The s.s. New York, which was libelled at Kingston, early in July, on account of wages due to the crew, was, after being released, again libelled for the Collingwood Shipbuilding Co., for $400 due for repairs. The matter was settled, and the ship released.

The Great Lakes Transportation Co., Midland, Ont., is having a steamship built by the Midland Shipbuilding Co., for its Great Lakes service. Details of the ship are given on another page of this issue, under General Shipbuilding Matters Throughout Canada.

The dredge Kennaquhair, which was bought by the Dominion Government in 1917, for terminal and harbor work at Port Nelson, Hudson Bay, and which has been berthed at Cornwall, Ont., since then, will, it is reported, be taken to Cape

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during June, 1920:

| Articles | | Canadian Canal | U.S. Canal | Total |
|---|---|---|---|---|
| Lumber | Eastbound | 4,449 | 31,439 | 35,888 |
| Flour | " | 290,940 | 791,581 | 1,082,521 |
| Wheat | " | 868,910 | 5,107,215 | 5,976,125 |
| Grain, other than wheat | " | 1,356,398 | 1,720,588 | 3,076,986 |
| Copper | " | ..... | 3,063 | 3,063 |
| Iron Ore | " | 140,608 | 8,566,742 | 8,707,350 |
| Pig Iron | " | ..... | ..... | ..... |
| Stone | " | 1,650 | 6,350 | 8,000 |
| General Merchandise | " | 674 | 5,498 | 6,172 |
| Passengers | " | 2,356 | 2,161 | 4,517 |
| Coal, soft | Westbound | 24,488 | 941,894 | 966,382 |
| Coal, hard | " | 7,900 | 263,120 | 271,020 |
| Iron Ore | " | ..... | 17,696 | 17,696 |
| Manufactured Iron and Steel | " | 1,418 | 7,536 | 8,954 |
| Salt | " | 831 | 17,975 | 18,806 |
| Oil | " | ..... | 41,720 | 41,720 |
| Stone | " | ..... | 93,541 | 93,541 |
| General Merchandise | " | 24,797 | 51,019 | 75,816 |
| Passengers | " | 3,435 | 1,435 | 4,870 |
| | | 493 | 2,143 | 2,636 |

Summary

| | | | |
|---|---|---|---|
| Vessel Passages | Net | 710,060 | 7,486,339 | 8,196,399 |
| Registered Tonnage | | | | |
| Freight—Eastbound | Short tons | 237,760 | 8,916,124 | 9,153,884 |
| Westbound | Short tons | 59,434 | 1,434,501 | 1,493,935 |
| Total Freight | Short tons | 297,194 | 10,350,625 | 10,647,819 |

Tormentine, P.E.I., for dredging operations in the improvement of the terminal facilities there.

The Great Lakes Transportation Co.'s s.s. Glenlyon, while entering Sarnia recently, was diverted somewhat from her course by the schooner Hattie Hutt and the sandsucker working at the port, and losing her steerage way, struck the G.T. R. freight sheds, doing damage to the amount of about $5,000. The ship was only slightly damaged.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above mean sea level for June as follows:—Superior, 602.75; Michigan and Huron, 580.86; St. Clair, 575.42; Erie, 572.49; Ontario, 245.56. Compared with the average stages for the last ten years, Superior period was 0.49 ft. above; Michigan and Huron, no change; Erie, 0.42 ft. below; Ontario, 1.37 ft. below.

The s.s. Baltic, owned in Cleveland, Ohio, bound for Byng Inlet, Georgian Bay, collided with the s.s. Greyhound, July 8, and on July 10 went on the rocks at Cove Island. The master of the ship, Capt. Willman, who, it was stated, had been running ships on the Great Lakes for many years without accident, committed suicide by jumping overboard immediately his vessel struck, the two mishaps having had a very depressing effect on him.

The s.s. Keystorm, owned formerly by Keystone Transportation Co., Montreal, and which sank near Kingston, several years ago, will, it is reported, be raised shortly. Several attempts have been made to salvage the wreck, which was abandoned to the underwriters, but without success. The bow of the ship is said to be in about 75 ft. of water, and the stern in about 130 ft. The wreck is stated to be valued at about $300,000. The salvage operations are in charge of Capt. W. Lesslie, Kingston.

The Toronto Harbor Commissioners, according to a statement made in the House of Commons recently, include the construction of about 4½ miles of dock in their general improvement scheme. The depth of water will be about 24 ft. Since the harbor development scheme was taken in hand in 1914, the Dominion Government has spent $3,309,504 on it, $599,491 of which was spent during the financial year 1919-1920. During the year ended Mar. 31, 1920, 2,083 ships, with a gross tonnage of 1,408,465, arrived at Toronto, and 1,940 ships, with a gross tonnage of 1,193,318, sailed from the port.

The Kingston Navigation Co. Ltd., incorporated recently at Kingston, and of which J. M. Campbell is President and Manager, has, we are advised, bought the steamships Brockville and St. Lawrence from Canada Steamship Lines Ltd., the former being operated on regular trips up the Bay of Quinte to Amherst Island ports and to Bath on the mainland, and also on excursions to Thousand Islands and elsewhere, and the latter is to be operated between Kingston and Thousand Islands and ports lower down. The s.s. Brockville was built at Toronto in 1898, and has an oak hull, with the following dimensions,—length 105 ft., breadth 21 ft. 5 in., depth 5 ft. 7 in.; tonnage 191 gross, 88 registered. She is equipped with fore and aft compound engines, with cylinders 9 and 18 in. diar. by 14 in. stroke, 140 i.h.p., at 165 r.p.m., and supplied with steam by a firebox boiler, 4¾ ft. diar. by 8 ft. long, at 165 lb. The s.s. St. Lawrence was built at Clayton, N.Y., in 1884 and has a composite hull, with the following dimensions, length 154 ft., breadth 21 ft., depth 7 ft.; tonnage 312 gross, 188 net. She is equipped with a beam condensing engine, with cylinders 32 in. diar. by 72 in. stroke, 350 i.h.p., at 38 r.p.m., and supplied with steam by a firebox boiler 8 ft. diar. by 16 ft. 2 in. long, at 87 lb. Officers for the current year have been appointed as follows: Brockville, J. E. Rathburn, captain; G. Boyd, chief engineer; St. Lawrence, J. A. Carnegie, captain, Jas. Gillie, chief engineer.

## British Columbia and Pacific Coast.

The British Yukon Navigation Co.'s s.s. Canadian struck a rock at Hell Gate, between Dawson and White Horse, Yukon, July 3, and was beached for repairs to a hole in the hull.

The C.P.R. has ordered a steam tug and car barge for service on Okanagan Lake. Details of these are given on another page of this issue under "General Shipbuilding Matters Throughout Canada."

The Vancouver Harbor Commissioners are inviting tenders to Aug. 7, for the construction of a reinforced concrete pier, to be known as Ballantyne Pier, with transit sheds, to be built at Burrard Inlet.

The contract for dredging and filling on the site of the Ballantyne pier in Burrard Inlet has been awarded, as mentioned in our last issue, by the Vancouver Harbor Commissioners to Grant & MacDonald for $531,121.50. It is stated that the work is to commence immediately and that it will be completed within the year.

The Whalen Pulp & Paper Mills Ltd. annual report, issued recently, says:—"At the end of February, the Grand Trunk Pacific Ry. completed a car ferry barge, and railway cars are now ferried between your Swanson Bay plant and Prince Rupert, which will cheapen transportation and make it efficient. During the course of the year, the launch Nooya was sold."

## Ships Registered in Canada During April, 1920.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons register.

### STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|
| 141702 | Burrard Chief | Vancouver, B.C. | Vancouver, B.C. 1919 | 67.2 | 19.9 | 9.1 | 99 | 57 | 27 Sc. | Pacific Construction Co., Vancouver, B.C. |
| 133407 | Bras d'Or | Sydney, N.S. | Mahone Bay, N.S. 1919 | 128.8 | 28.0 | 9.1 | 371 | 136 | 71 Sc. | Coastal Steamship Co., Sydney, N.S. |
| 141590 | Canadian Farmer* | Montreal | Collingwood, Ont. 1920 | 251.0 | 43.6 | 23.6 | 2410 | 1460 | 124 Sc. | Minister of Marine, Ottawa. |
| 141568 | Canadian Importer* | " | Vancouver, B.C. 1919 | 400.0 | 52.4 | 28.8 | 5465 | 3400 | 282 Sc. | " " " |
| 141598 | Canadian Miner* | " | Trenton, N.S. 1920 | 270.0 | 38.2 | 17.9 | 1766 | 1043 | 116 Sc. | " " " |
| 141709 | Capilano | Vancouver, B.C. | Vancouver, B.C. 1920 | 135.0 | 26.9 | 8.2 | 374 | 200 | 51 Sc. | Union Steamship Co. of British Columbia, Vancouver, B.C. |
| 141661 | Clinton(1) | Toronto | Buffalo, N.Y. 1889 | 217.0 | 36.7 | 14.7 | 1231 | 727 | 73 Sc. | A. E. Mathews, Toronto. |

(1) Formerly Cylaton, and Viking. *Equipped with wireless.

### SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Tons Reg. | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141591 | Arthur Morgan(1) | Montreal | Schr. | Detroit, Mich. 1871 | 220.2 | 35.3 | 14.3 | 938 | 888 | Sincennes-McNaughton Line, Ltd., Montreal. |
| 141596 | Ashland | " | " | Trenton, Mich. 1886 | 225.7 | 35.1 | 13.9 | 987 | 949 | Sincennes-McNaughton Line, Ltd., Montreal. |
| 141623 | Burpee L. Tucker | Parrsboro, N.S. | " | Port Greville, N.S. 1920 | 156.5 | 35.5 | 13.0 | 512 | 465 | S. T. Salter, et al., Parrsboro, N.S. |
| 141684 | Frances L. Spindler | Lunenburg, N.S. | " | Lunenburg, N.S. 1920 | 125.4 | 27.2 | 10.6 | 174 | 112 | I. Spindler, M.O., Lunenburg, N.S. |
| 141686 | Grace P. Brown | " | " | Chester Basin, N.S. 1920 | 124.0 | 26.6 | 11.0 | 170 | 114 | W. Duff, M. O., Lunenburg, N.S. |
| 141635 | Harold Conrad | La Have, N.S. | " | Yarmouth, N.S. 1919 | 123.2 | 27.4 | 11.0 | 183 | 116 | J. E. Backman, Riverport, N.S. |
| 141535 | J. C. 26 | New Westminster | Scow | New Westminster, B.C. 1920 | 94.5 | 34.0 | 8.5 | 239 | 239 | J. C. Crane, Westminster, B.C. |
| 141683 | J. E. Conrad | Lunenburg, N.S. | Schr. | Shelburn, N.S. 1920 | 127.1 | 26.6 | 10.4 | 172 | 114 | G. A. Corkum, M.O., East La Have, N.S. |
| 141595 | J. I. Case | Montreal | " | Manitowoc, Wis. 1874 | 207.8 | 34.6 | 14.5 | 862 | 814 | Sincennes-McNaughton Line, Ltd., Montreal. |
| 141637 | Kaduskak | La Have, N.S. | " | Liverpool, N.S. 1920 | 125.8 | 27.6 | 11.0 | 196 | 178 | Southern Salvage Co., Liverpool, N.S. |
| 141597 | L. C. Smith | Montreal | Barge. | Pierreville, Que. 1920 | 108.6 | 22.9 | 7.5 | 184 | 165 | L. Yergeau, Pierreville, N.S. |
| 141636 | Marian Belle Wolf | La Have, N.S. | Schr. | Shelburne, N.S. 1920 | 126.6 | 26.6 | 10.5 | 170 | 116 | F. Gray, M. O., La Have, N.S. |
| 141594 | Nellie Redington | Montreal | " | Cleveland, Ohio 1872 | 204.8 | 34.1 | 14.0 | 827 | 787 | Sincennes-McNaughton Line, Ltd., Montreal. |

(1) Formerly Arthur.

The name of the s.s. Beaver, owned by the Gulf of Georgia Towing Co., Vancouver, has been changed to Honeymoon. She was owned formerly by Maritime Fisheries Ltd., Vancouver, and was built at Ballard, Wash., in 1892. She is screw driven by engine of 22 h.p., and has the following dimensions,—length 51.4 ft., breadth 13.7 ft., depth 5.7 ft; tonnage, 38 gross, 26 net.

The negotiations between the Vancouver Harbor Commissioners and the Great Northern Ry. as owner of the site for the construction of the Ballantyne pier in Burrard Inlet, are reported to have been concluded, the G.N.R. agreeing to accept $1,000 a foot as offered by the Commissioners. It is stated that the prolonged negotiations in no way delayed the work of preparing the site, and one contract has already been let.

The Vancouver Harbor Commissioners has passed a bylaw, effective Aug. 1, imposing a tax on all cargo landed within the harbor, of 5c. a ton, with certain exceptions. Until this bylaw was passed, no charge had been made at the port on the cargo of ships, but only on the ship tonnage. It is stated to be the intention to abolish the ship tonnage charge and all charges for wharfage on the Commissioners' property, in about two years, or on the completion of the Ballantyne pier.

The Kettle Valley Ry., which is operated under lease by the C.P.R., will handle traffic on Dog Lake between Penticton and Okanagan Falls with the C.P.R. s.s. York, which was run formerly on Okanagan Lake. The s.s. York was built at Toronto in 1901 and shipped in knockdown shape to Okanagan Landing and was re-erected there. She is screw driven, by engine of 12 h.p., and has the following dimensions,—length 88 ft., breadth 16.2 ft., depth 4.9 ft.; tonnage 134 gross, 91 net.

The board of conciliation, consisting of Mr. Justice Murphy, chairman; E. A. James, for the C.P.R., and J. Taylor, for the employes, appointed to deal with the demands of the C.P.R. freight handlers on the water front at Vancouver, reported during July. It is stated that the majority report does not recommend any increase in wages, but agrees that men called upon to do more than ten hours work in 24 hours should be paid for the excess time at $1.35 an hour for checkers and $1.20 an hour for truckers, against $1.10 and $1 respectively at present. A minority report is being presented by J. Taylor, who represented the men.

The British Columbia Telephone Co. has bought the barge Iwalani to convert into a cable ship for laying cables through the Gulf of Georgia. The Iwalani was built at San Francisco, Cal., in 1881, as a private yacht, and was sold afterwards to Hawaiian parties and operated in the sugar trade between California and Honolulu and was later on the run between San Francisco and Seattle in the freight trade. A short while before the war she was bought by a Vancouver concern, and later her engines were removed and sent to Japan, where there were installed in another ship, and the Iwalani passed to the Imperial Munitions Board for use as a barge. Her dimensions are,—length 148 ft., breadth 27 ft., depth 8.5 ft.; tonnage 275 net.

**Car Ferry Steamship Maitland No. 1.** Particulars of the operation of this steamship. for 1919, are given in the Toronto, Hamilton & Buffalo Ry.'s annual report on another page of this issue.

# Dominion Government Aid for Shipbuilding.

Canadian Railway and Marine World for July contained the resolution adopted by the House of Commons on motion of the Finance Minister, Sir Henry Drayton, to make advances to shipbuilders. Following is the complete text of the bill, An Act respecting the Shipbuilding Industry, which was based on the resolution, as passed by Parliament.

Whereas large numbers of men are employed in the shipbuilding industry in Canada; and whereas at the present time there is no sufficient demand for the construction of ships by Canadian purchasers and the Government of Canada has ceased placing further orders; and whereas inhabitants of European countries are desirous of placing orders for ships in Canadian yards, but owing to the present rates of exchange and the depreciated value of foreign currencies they are unable to finance such orders; and whereas it is advisable to assist in financing the construction of ships in existing Canadian shipyards: Therefore, His Majesty, by and with the consent of the Senate and House of Commons of Canada enacts as follows:

1. In any case where a person (hereinafter called "the purchaser") has entered into a contract with a shipbuilder for the building in Canada of a vessel of not less than 3,000 tons, and such contract is approved by the Ministers of Finance and Marine and Fisheries, and a sum not less than 10% of the price of such vessel is paid by the purchaser to the shipbuilder in cash at the time the contract is entered into, and, if such cash payment is less than 20% of such price, the payment to the shipbuilder of a further sum which with the said cash payment will amount to not less than 20% of such price not later than six months after such time, and the payment of a further sum not later than nine months after such time, if the previous payments are less than 25% of such price which will be sufficient with the other said payments to amount to at least 25% of the total of such price are contracted for and secured to the satisfaction of the Minister of Finance; and the payment of an additional 25% of the price is arranged between the purchaser and the shipbuilder and secured to the satisfaction of the Minister of Finance, the Governor in council may authorize the Minister of Finance to endorse on behalf of His Majesty promissory notes drawn by the purchaser in favor of the shipbuilder for the 50% of the price of the said vessel. The Governor in council shall prescribe the place where such notes shall be paid, the method of discounting them, and the time when such notes are to be paid.

Provided that the first of such notes shall be made payable at a date not less than 21 months after the time the contract was entered into, and the last of such notes shall be made payable at a date not later than 57 months after such time.

A first mortgage on the vessel for the full amount of the notes so endorsed by the Minister of Finance, in such form as the Minister of Justice may approve, shall be given to His Majesty, and the said vessel shall be registered in Canada, and the register shall not be transferred until the amount secured by the mortgage has been fully satisfied and paid. Until the amount secured by the mortgage is fully satisfied and paid, the vessel shall be insured and kept insured in favor of His Majesty for such amount and against such risks and in such insurance companies as the Minister of Finance may determine.

Provided that if the vessel is being built for an alien, and the provisions of this Act with respect to mortgaging the vessel cannot conveniently be complied with, such security for the amount of the said promissory notes endorsed by the Minister of Finance shall be furnished by the purchaser as may be approved by the Governor in council.

2. The whole amount that notes may be endorsed on behalf of His Majesty as herein provided shall not exceed $20,000,000, and no notes shall be endorsed as aforesaid until 25% of the contract price shall have been paid in cash.

3. An account in detail of the endorsements made or liabilities incurred under the provisions of this act shall be laid before Parliament within 15 days if Parliament is then sitting, and if not sitting then within the first 15 days of the session next ensuing.

Canadian Railway and Marine World is advised that applications for assistance, under the act's provisions, should be made to the Marine Department, which will pass upon the business aspects of the propositions, before they are dealt with by the Minister of Marine and Fisheries, and the Minister of Finance respectively.

**British Shipping Control Ended.**—The British Government has announced the removal of control over all shipping, including limitations on freight, as from July 15, although it is stated that formal licenses will still be necessary.

## Ships Added to and Deducted From the Canadian Register During April, 1920.

| | Steam. | | | Sailing. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| | No. | Gross. | Registered. | No. | Gross. | Reg'red |
| **Added.** | | | | | | |
| Built in Canada | 25 | 10,890 | 6,549 | 17 | 2,624 | 2,167 |
| Purchased from foreigners | 1 | 1,231 | 727 | 4 | 3,614 | 3,438 |
| Transferred from United Kingdom | .... | ..... | ..... | .... | ..... | ..... |
| Transferred from British Possessions | .... | ..... | ..... | .... | ..... | ..... |
| New registers | 4 | 157 | 132 | .... | ..... | ..... |
| Re-registered after wreck | .... | ..... | ..... | .... | ..... | ..... |
| Totals | 30 | 12,278 | 7,408 | 21 | 6,238 | 5,605 |
| **Deducted.** | | | | | | |
| Wrecked or otherwise lost | 3 | 1,562 | 976 | 14 | 1,326 | 1,259 |
| Broken up or unfit for use | 5 | 93 | 68 | 6 | 355 | 350 |
| Sold to foreigners | 2 | 105 | 74 | 1 | 364 | 332 |
| Transferred to United Kingdom | 1 | 3,365 | 1,491 | .... | ..... | ..... |
| Transferred to British possessions | .... | ..... | ..... | 3 | 1,214 | 1,123 |
| New registers | .... | ..... | ..... | 4 | 157 | 146 |
| Totals | 11 | 5,125 | 2,609 | 28 | 3,416 | 3,210 |

# Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties:—

### Collision of s.s. Picton with Laurier Pier, Montreal.

Held at Montreal, June. 12, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. J. Stuart and J. C. Caine, as nautical assessors, into the collision of the s.s. Picton with the Laurier pier, Montreal, June 8. The evidence showed that while, in some cases, the casting off of the stern tow line may be trivial, in this case it proved to be a factor in the damage caused by the s.s. Picton. Owing to an eddy, at the end of the Tarte pier, causing an inward flow, the moment the line was cast off the stern of the ship, she gradually left the wharf until she was within 150 ft. of the Laurier Pier. In the meantime, those on the bridge of the Picton had been warned that her engines were not ready to respond to orders, and no attempt was made by the master or pilot to secure the ship to the wharf, both of them relying on the two tugs in attendance. The evidence with respect to orders to the tugs was conflicting, but the court accepted the version of the masters of the tugs, who stated that they had no orders, and found that the responsibility for the damage caused to the pier, rested with the pilot, A. Perreault, who allowed the Picton to approach too close to the pier, this being brought about by the stern line having been cast off before her engines were ready, and without orders from either the pilot or master, in consequence of which, the stern of the ship drifted 150 ft., before any action was taken. The pilot erred in judgment and was therefore reprimanded and cautioned to be more careful in future. The master of the Picton, M. Mathias, was also cautioned, for the reason that his engines were not ready, it being his duty to see that his ship did not leave her berth before everything was in order. The opinion was expressed that an order to pass a breast line ashore should have been given, when it was found that the stern line had been cast off. The tugs were held not to be in any way to blame for the accident.

Capt. C. J. Stuart, one of the assessors, reported that he could not agree to exonerating the masters of the tugs. He stated that while of the opinion that it was the duty of the tugs to obey orders from the ship in tow, he did not consider that their duties ended there, but that they should be able, owing to experience, to anticipate the pilot's orders and have such control as to avoid such an accident, and for this reason he considered that the masters of the Sincennes-McNaughton Line's tugs Mathilda and Macsinco were jointly responsible for the casualty.

### Stranding of the s.s. Quebec.

Held at Montreal, June 21, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and C. J. Stuart. as nautical assessors. into stranding of Canada Steamship Lines' s.s. Quebec near Three Rivers, Que., June 3. The court decided that the pilot, E. Gauvreau, erred through over confidence in his courses, and that he was in default for not taking a cast of the lead occasionally, to ascertain if his vessel was keeping in navigable waters. Being an unlicensed pilot, the court had no method of dealing with him, but to find him at fault. The court held that the first officer showed a lack of knowledge as to his duties while in charge, and it took into consideration that he was a stranger in that service and had not received specific instructions as to the role he had to play in connection with the pilot and wheelsman. He was therefore only reprimanded severely, and cautioned to use better judgment in future, and acquire a better conception of his duties and responsibilities as a first officer. The court expressed the opinion that in view of the evidence adduced, the chemical fumes from the Wayagamack mills played an important part in the casualty, as they cast a mist over the surroundings, obliterating all lights at intervals. It therefore strongly recommended that some action be taken in order to cause the elimination once and for all of these fumes, which to its knowledge have been a nuisance and a danger to navigation in the vicinity of Three Rivers for some time past.

### Stranding of s.s. Manchester Division.

Held at Montreal, June 24, by Capt. J. B. Henry, Wreck Commissioner, assisted by Capts. J. C. Caine and C. J. Stuart, as nautical assessors, into the stranding of Manchester Liners' s.s. Manchester Division in Quebec harbor, June 7. The court expressed the opinion that the casualty was due to the parting of a new 9 in. hawser leading from the starboard bow to the tug Belle. There was nothing to indicate undue chafing of the rope, which was protected on the stem by a paunch mat, and the evidence of the master of the Belle showed that the rope parted well clear of the stem. After the parting of the rope, the only practical manoeuver was thought of, and acted upon, by the master and pilot, going full speed ahead, with the helm hard a starboard, in an endeavor to bring the ship's head round to port, but owing to the squally condition of the wind, this could not be executed before she took the bank and stranded beam on, the striking being so light, as not to be perceptible to those on board. No reason for the parting of the rope could be given, except that there was an unknown defect. No negligence was attributed to those handling her, and both master and pilot were exonerated, the court recommending that in going into this berth, vessels should use a line from each bow.

### Stranding of s.s. Hamonic.

Held at Sarnia, Ont., July 21, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. E. Millard and W. A. Glass as nautical assessors, into the cause of the grounding of the Northern Navigation Co.'s s.s. Hamonic off Hardwood Point, Lake Huron. July 7. The master, Capt. O. M. Wing, stated that he had been in command since 1913, without accident. On July 6 he had occasion to alter his course, to counteract leeway caused by a strong breeze off the port side. His compasses was but imperfectly adjusted in the spring and as a result he had found an error by observing ranges. He also stated that the towing log had a new propeller and he had not had the opportunity of verifying its running. The sounding machine was in order but not was used, one reason being that one of the crew would have had to be called from his sleep if it had been used. He was advised by the second officer that he had passed the s.s. Huronic inside and assumed from that that he was steering a correct course and was in a proper position as to location. The second officed called him when fog came on, with the information that he had seen a light once, but had not had time to take a bearing. He had not heard the fog horn at Port aux Barques, but kept up his speed until the ship struck. Soundings showed that there was 18 ft. forward and 16 ft. aft, and interior soundings revealed a leak in no. 1 hold. The ship was released by the use of tugs. The second officer, Andrew Allan, stated that the ship was steered correctly and that he had not offered any suggestion as to reduction of speed or soundings, assuming that the captain was master of the situation. The master was recalled and notified that on his own evidence the court would likely find him in default and deal with his certificate, and that if he wished to make a defence and secure counsel, the court would adjourn, but he elected to leave the case in its hands.

The court found that the master was in default and stated that he gave his evidence in a straightforward and honest manner. It did not consider the accident due to an error in judgment or careless behavior, but to an omission to exercise the necessary caution. Owing to his youth, clean record and straightforward evidence, the court exercised leniency and suspended his certificate, 6939, for two months from July 21 to Sept. 20. The second officer, Andrew Allan, was exonerated, but cautioned that his responsibility and duties demand more than to call the master and pace the bridge.

## Welland Canal Lock Gate Accident.

Canada Steamship Lines' s.s. Maplegrove, downbound, with a cargo of wheat, July 11, struck the lower gates of lock 2 in the Welland canal, ploughing through them in an 18 ft. descent to the level below. The rush of water released from the level above also carried out the heel of both upper gates in lock 1 level. Three spare gates were placed in position, and navigation resumed July 12, after a suspension of 33 hours. Considerable trouble was experienced in getting the two lower gates out of the lock, they being jammed together between the lock walls. The floor of the lock on the outer recess was covered with several feet of material washed into it from the level above, and the removal of this by divers required considerable time. The ship is believed to have suffered heavy damage, and after the removal of her cargo, she is to be placed in dry dock for examination and repairs. The damage to the canal lock is estimated at $7,500. It is said that the accident was caused by the engines going ahead instead of reversing while entering the lock.

**Welland Ship Canal.**—It is reported that there is to be a resumption of work on the various uncompleted contracts on the Welland ship canal. Some work was done on these contracts last year, especially to relieve the unemployment situation, due to demobilization, the plants being closed down again in December.

**Glen Transportation Co. Ltd.** has been incorporated under the Dominion Companies Act, with $500,000 authorized capital and office at Midland, Ont., to carry on a general transportation, towing, wrecking and salvage business, and in connection therewith to own and operate steam and other ships.

# Agreement between Canada Steamship Lines, Ltd., and British Empire Steel Corporation.

The following agreement between Canada Steamship Lines Ltd. and British Empire Steel Corporation Ltd. was ratified by the former company's shareholders at a meeting in Montreal July 24.

Whereas the Steamship Company was incorporated under the Dominion Companies Act for the purpose and object, amongst others, of carrying on a general business of water borne transportation; and whereas the Steel Company was incorporated under the Nova Scotia Companies Act with like objects and powers, as well as the mining of coal, the production of iron and steel, and the construction of vessels, with power to enter an agreement of the nature agreed upon between the parties hereto; and whereas it having been concluded that the co-ordination of the operations of the respective companies, the reciprocal privileges and benefits, the transportation by the Steamship Company of the Steel Company's products, and the facilities of the Steel Company for the construction and repair of vessels, will be of immense advantage one to the other, in consequence the parties have agreed and covenanted one toward the other, as hereinafter set forth; therefore this agreement witnesseth: For and in consideration of the sum of $1 to each in hand, one paid to the other, the receipt whereof is hereby acknowledged, and further the considerations hereinafter mentioned, it has been covenanted and agreed between the parties as follows:—

1. The Steamship Company undertakes for 25 years from and after July 1, 1920, to operate and manage the business of the Steamship Company, and to conduct the same in all respects as efficiently as heretofore, for the profit and/or loss of the Steel Company, which shall be entitled to any surplus profit arising therefrom after deduction therefrom of all expenses of such operations, including management and direction expenses, and the further deduction hereinafter mentioned, the Steel Company on its part to bear any loss or deficiency;

2. Out of the surplus revenues arising from the operations and expenses as hereinbefore provided, the Steamship Company shall retain and pay the amount necessary to meet interest on its outstanding debenture stock and/or bonds, mortgages, whether due by the Steamship Company or its subsidiaries, and a dividend at the rate of 7% per annum, payable quarterly, on the Steamship Company's issue of preferred and common stock outstanding, as well as making provision for requisite depreciation and sinking fund which in no event shall be less than the depreciation and sinking fund required by the trust deed securing the company's debenture stock and/or bonds, and should the revenues of the Steamship Company and its subsidiaries be insufficient for such purposes the Steel Company covenants and agrees to supply the deficiency as required;

3. The Steel Company on its part further covenants and agrees to provide or advance such additional cash capital as the Steamship Company may reasonably require from time to time for its operations and extensions to secure the repayment of which provision or advances the Steamship Company shall give proper security therefor, covenanting to pay a reasonable rate of interest thereon having regard to prevailing conditions at the time of such advances;

4. In consideration of the foregoing covenants on the part of the Steel Company the Steamship Company agrees to transfer and pay over to the Steel Company its surplus net earnings, subject to the provisions aforesaid, during the currency of this agreement;

5. This agreement shall remain in force for such period beyond the term of 25 years as aforesaid until cancelled by one year's notice in writing given by either party to the other, but shall in no event extend beyond the period of 99 years;

6. Furthermore, for the consideration aforesaid the Steamship Company covenants and agrees that the Steel Company, provided it has not in the meantime increased its outstanding capital stock, by the declaration of stock dividends or stock bonuses to its shareholders, shall during the period of 25 years from the date hereof have the right at any time to purchase all the then existing assets and undertakings of the Steamship Company, including goodwill, but subject to the assumption of its liabilities, as a going concern, upon the payment or transfer by the Steel Company to the Steamship Company of 125,000 shares of 7% cumulative preference stock, 120,000 shares of cumulative second preference stock, and 66,500 shares of common or ordinary stock of the Steel Company, such shares to be fully paid and of the par value of $100 each. In the event of this option being exercised the said shares of the Steel Company shall carry dividends from the date in respect of which the last dividends have been paid upon the shares of the Steamship Company, or the Steel Company shall pay to the Steamship Company the equivalent in cash;

7. Nothing herein contained or covenanted to be agreed and performed by the Steamship Company shall be construed as a covenant on the part of the Steamship Company which would in any way affect or impair that company's obligations towards the trustees representing its bondholders and/or debenture stockholders, nor shall the steamship company be held hereunder to any obligation which would have any such effect until such time as the said debenture stock and/or bonds have been retired or the consent of said bondholders and/or debenture stockholders duly obtained in accordance with the provisions of the trust deed therefor, and after all legal requirements have been complied with;

8. This agreement shall not become effective and binding on the part of the Steamship Company until it has been approved, ratified and confirmed at a special general meeting called for such purpose, and until its board of directors shall have passed a resolution declaring that it is satisfied with the organization of the Steel Company;

9. Failure on the part of the Steel Company to make any payment to the Steamship Company as provided for in and by paragraph 2 hereof shall, at the option of the Steamship Company, after giving 90 days' notice, and should such default then continue, render this agreement null and void.

## Agreement for Acquisition of Canada Steamship Lines' Stock.

The following agreement has been entered into between the British Empire Steel Corporation and the Prudential Trust Co. Ltd., the former being referred to in the agreement as "the company" and the latter as "the trustee":—

Whereas the company is desirous of acquiring 125,000 shares of preferred stock and 120,000 shares of the common stock, both of the par value of $100, all fully paid, issued and outstanding, of Canada Steamship Lines Ltd., and has made an offer to the shareholders of Canada Steamship Lines Ltd. to exchange for the said 125,000 shares of its preferred stock 125,000 shares of 7% cumulative preference stock of the company and 12,500 shares of the common stock of the company, all fully paid and of the par value of $100; and to exchange for 120,000 shares of the common stock of Canada Steamship Lines Ltd. 120,000 shares of second cumulative preference stock and 54,000 shares of common stock of the company, all fully paid and of the par value of $100; and whereas for the purpose of carrying into effect such exchange, the company has agreed to deposit with the trustee its shares as hereinbefore described; therefore this agreement witnesseth:—

1. The company agrees to exchange, the trustee on its part accepting the deposit thereof on behalf of the shareholders of the Steamship Company, (a) 125,000 shares of its 7% cumulative preference stock, all fully paid and of the par value of $100 each, and (b) 12,500 shares of its common stock, all fully paid and of the par value of $100 each, for 125,000 shares of the preference stock of Canada Steamship Lines Ltd.; and to exchange (a) 120,000 shares of its 7% second cumulative preference stock, fully paid and of the par value of $100 each, and (b) 54,000 shares of itis common stock, all fully paid and of the par value of $100 each, for 120,000 shares of the common stock of Canada Steamship Lines Ltd.;

2. The company covenants and agrees forthwith after the execution hereof to deposit with the trustee, for the purpose of making the exchange as hereinbefore referred to, said 125,000 shares of its prefernce stock, 120,000 shares of its 7% cumulative second preference stock, and 66,500 shares of its common stock;

3. Upon such deposit as aforesaid, the trustee shall give notice to the shareholders of Canada Steamship Lines Ltd. of the terms of this agreement with an invitation to them to make the exchange as herein provided, and shall in exchange for each share of preferred stock of Canada Steamship Lines Ltd. give to the holders thereof one share of 7% cumulative preference stock and the equivalent of one-tenth of a share of common stock of the company, and in exchange for one share of the common stock of Canada Steamship Lines Ltd. give to the holders thereof one share of 7% cumulative second preference stock and the equivalent of 45% of a share of common stock of the company;

4. The shares of stock of Canada Steamship Lines Ltd. so acquired is exchange by the trustees as aforesaid shall be held by the trustee on behalf of the company, and upon its request transferred to the name of the company;

5. The company shall not be called upon to issue, nor shall the trustee be called upon to deliver, certificates for fractional shares, but the trustee shall

deliver to the persons entitled thereto its own certificate covering such fractions issued in favor of the persons entitled thereto, and upon receipt by the trustee from time to time of the dividends payable upon such shares pay the same over to the holders of such certificates in the proportion in which they are entitled thereto;

6. The shares of preferred stock of the company shall, at the time of the exchange herein provided for, carry dividends for the term and in proportion to the dividends accrued on the stock of Canada Steamship Lines Ltd. If, however, they do not do so, the difference shall be adjusted either by the shareholder paying the difference to the trustee or the trustee paying the difference to the shareholder, the amount necessary for the latter purpose having been previously supplied to the trustee by the company;

7. This agreement to exchange shall be binding and effective upon the company until Nov. 30, 1920, unless such time be further extended by the company, at the expiration of which time, or an extension thereof, the trustee shall return to the company any shares of its stock not so exchanged and the remaining shareholders of Canada Steamship Lines Ltd. shall thereafter cease to have any such privilege of exchange.

# Fisheries Control Transferred to Marine and Fisheries Department.

The following Dominion order in council no. 1,227 was passed May 29:—"The committee of the Privy Council have had before them a report, dated May 27, from the Minister of the Naval Service, submitting as follows with reference to the minute of council, 1,574, approved June 16, 1914, transferring to the Minister of the Naval Service from July 1, 1914, the duties and powers theretofore vested in the Minister of Marine and Fisheries with respect to the sea coast and inland fisheries, the management and regulation and protection thereof, and the payment of fishing bounties; as well as all such matters as refer to the fisheries of Canada:—

"'1. That following the transfer of the Fisheries Branch from the Department of Marine and Fisheries to the Department of the Naval Service, the name of either department was not changed. This has caused, and continues to cause, much confusion in the public mind, and in the press of the country, and otherwise the Fisheries Branch is commonly referred to as a portion of the Department of Marine and Fisheries;

"'2. That there is nothing in common in the duties of the Naval Service Department and of the Fisheries Branch. While the Fisheries Protection service, the duty of which is to prevent illegal fishing in Canadian waters by foreign fishing vessels, is carried on by the Department of the Naval Service, the vessels of that fleet are Naval Service vessels, and co-operation between this service and the Fisheries Branch can be as readily effected if the latter were a portion of the Department of Marine and Fisheries as under present conditions;

"'3. That at the time the Fisheries Branch was transferred to the Department of the Naval Service, the work of that department was comparatively light; but owing to conditions brought about by the war, and the reorganization of that department, the work thereof will in future require the full attention of the Deputy Minister. On the other hand, as the shipbuilding programme of the Marine and Fisheries Department will soon be completed, the Deputy Minister of that department can fittingly resume the responsibility for the administration, under the Minister, of the Fisheries Branch;

"'4. That as the records and the staff of the Fisheries Branch are distinct from those of the Naval Service, the transfer of the Fisheries Branch from the Department of the Naval Service could be effected without interference with the functioning of either the Department of the Naval Service or the Fisheries Branch.'

"The Minister, therefore, recommends that under the authority of 8-9 George V, chap. 6, that the above cited minute of council of June 16, 1914, be cancelled, and that the duties and powers thereby vested in the Minister of the Naval Service, with respect to the sea coast and inland fisheries, the management, regulation and protection thereof, and everything relating thereto, and the payment of fishing bounties; also all such matters as refer to the fisheries of Canada, shall, from July 1, 1920, be vested in the Minister of Marine and Fisheries, and that the latter department undertake from that date the administration of all matters and acts connected with the fisheries of Canada.

"The Minister also recommends that the unexpended balance of the parliamentary appropriation for Fisheries for the fiscal year 1920-21, amounting to $1,275,000, and the appropriation for fishing bounty amounting to $160,000, be transferred from the Naval Service Department to the Marine and Fisheries Department from July 1, 1920.

"The Minister further recommends that as the work of the Fisheries Branch will need to be carried on as distinct from that of the Marine Branch of the Marine and Fisheries Department, and by separate staffs, and that as the General Superintendent of Fisheries, the chief administrative officer of the Fisheries Branch, will be in practice an assistant deputy minister and will act for the Deputy Minister in his absence, so far as all fishery matters are concerned, the title of General Superintendent of Fisheries be changed to that of Assistant Deputy Minister of Fisheries.

"The Minister also recommends under the authority of sec. 45 of the Fisheries Act, chap. 8, statutes of 1914, and under the authority of sec. 20 of the Meat and Canned Foods Act, that in all fishery regulations adopted under the authority of sec. 45 of the Fisheries Act, and in all regulations adopted under the authority of sec. 20 of the Meat and Canned Foods Act, where any power or duty is conferred or charged upon the Minister of the Naval Service, from July 1, 1920, such power may be exercised and the duty shall be discharged by the Minister of Marine and Fisheries. The Committee concur in the foregoing recommendations, and submit the same for approval."

Under the provisions of this order, W. A. Found, heretofore General Superintendent of Fisheries, is now Assistant Deputy Minister of Fisheries.

## Mail Subsidies and Steamship Subventions Estimates.

The further supplementary estimates, for the year ending Mar. 31, 1921, passed at the Dominion Parliament's recent session, contain the following items:—

| | |
|---|---|
| Mulgrave and Canso, steam service between, further amount required | $2,000 |
| Petit de Grat and Mulgrave, steam service between, further amount required | 2,000 |
| Victoria and Vancouver, way ports and Skagway, steam service between, further amount required | 12,500 |
| Victoria and West coast of Vancouver Island, steam service between, further amount required | 10,000 |
| Campment d'Ours Island and mainland on Georgian Bay, ferry service between | 3,000 |
| Grand Manan and the mainland, steam service between, further amount required | 2,500 |
| Halifax, Canso and Guysboro, steam service between, further amount required | 2,000 |
| Halifax and Newfoundland, via Cape Breton ports, steam service between, further amount required | 2,000 |
| Vancouver, and Northern ports of British Columbia, steam service between, further amount required | 8,000 |
| Charlottetown, Pictou and New Glasgow, steam service between | 2,000 |
| Pictou, New Glasgow, and Antigonish County ports, schooner service between | 1,500 |

**Projected Dominion Commercial Port in England.**—The City of Portsmouth, Eng., is reported to have under consideration a scheme prepared by Sir Maurice Fitzmaurice, who was, at one time, on the board of engineers for the designing of the Quebec Bridge, for the development of Langstone harbor at Portsmouth, Eng., as a general commercial port. It is stated that the scheme, which was estimated before the war to cost about £5,000,000, will now probably cost £12,000,000, and this is heavier than the corporation feels that it can undertake at present. It has therefore decided to ask the governments of the various British dominions to consider the possibility of co-operating in the development.

**Sale of Dominion Government Submarines.**—The Naval Service Department will receive tenders to Aug. 23 for the purchase of submarines C.C.1, built of steel, length 144 ft., beam 15 ft., displacement on surface 310 tons, displacement submerged 373 tons, built in 1914, and C.C. 2, built of steel, length 151½ ft., beam 15 ft., displacement on surface 310 tons, displacement submerged 373 tons, built in 1914. These ships will be sold as they lie at Halifax, N.S. They were built by the Seattle Construction & Dry Dock Co., Seattle, Wash., for the Chilean Government, and bought by the Dominion Government on the outbreak of war. They were then named Antofagasta and Iquique respectively.

The Caraquet & Gulf Shore Ry., which was taken over by the Dominion Government, as at June 1, full particulars of which were given in Canadian Railway and Marine World for July, on page 384, is now known as Caraquet Subdivision, Campbellton Division, Maritime District, Canadian National Rys. R. H Martin is Superintendent of the division at Campbellton, N.B., and H. V. Musgrave is Assistant Superintendent.

**Naval Service Estimates.**—The further supplementary estimates for the year ending Mar. 31, 1921, passed at the Dominion Parliament's recent session, contain the following items:—To provide for the maintenance of the Royal Canadian Navy, further amount required, $1,700,000; pay of temporary officers and clerks at headquarters, Halifax and Esquimalt dockyards, $60,000.

## Apprentices for Canadian Government Merchant Marine.

In carrying out the scheme originally outlined at the inception of the Canadian Government Merchant Marine, arrangement have been completed by the management for carrying boys as apprentices on the larger ships, taking two for each ship, and signing them up for four years service. While under indentures they will be taught seamanship, so that they will be able to obtain certificates in due time. It is desired to obtain a good class of healthy, intelligent boys, who wish to make the sea their profession, and for this purpose, the management is working in close connection with the Navy League of Canada, and has agreed to accept boys from that organization. Should, however, any boy make independent application, he will be given consideration. No boy will be taken under 16 years old, unless he be exceptionally developed for his age, and he must have the approval of the Marine Superintendent. The management also requires the parents or guardians of the boys sailing, to put up a guarantee in the way of security that the boys will perform their part of the agreement. It is reported that the first two apprentices under this system sailed during June on the s.s. Canadian Navigator. The arrangement as at present outlined is intended to apply only to those boys who intend to become officers, and, so far, nothing is arranged to induce those to join who only desire to become able bodied seamen. Those boys who are selected will be made graded allowances, increasing yearly, the total payable to each during the course of his indentures being $1,100.

The Navy League of Canada is preparing a booklet on the subject, with some useful hints written by Thomas Robb, Manager, Shipping Federation of Canada, with the view of conveying to the boys some idea of what the life means, to themselves, as well as to the country at large.

## Canada Position at the International Seamen's Conference.

London, Eng., copyright cable, given to Montreal Gazette July 21:—Canada's case as it was presented to the International Seamen's Conference at Genoa last week was outlined to your correspondent today by Thos. Robb, Manager of the Shipping Federation of Canada, Montreal, who represented Canadian shipowners and general shipping interests at the conference. He said that the inability of the conference to come to any practical agreement regarding the question of hours by no means implied that the discussions were fruitless, inasmuch as it succeeded in arriving at an agreement on a draft of conventions relating to the minimum age for employment in ships and for securing a seaman's right to compensation in case of his ship being lost, and the conference also adopted important recommendations in regard to the drawing up of an international code for seamen, for provision of insurance against unemployment, and other questions directly affecting the daily life of the seafaring community.

So far as Canada is concerned the absence of any United States representatives was felt especially to be a serious defect. When the question arose as to how far workers employed in the fishing industry and inland waterways should be included in the conference, Mr. Robb spoke, pointing out that Canada and the U.S. have large lakes which form adjacent boundaries to the two nations. "These lakes," he said, are navigated by U.S. and Canadian vessels, and it is most essential in view of the fact that these matters only concern the U.S. and Canada, that they should be dealt with by these two countries. Before any action is taken by the conference I think we should hear from our U.S. friends; therefore I most strongly protest against any recommendation being made from this conference."

Mr. Robb added that his colleague, G. J. Desbarats, Deputy Minister of Naval Service, explained to the conference that there are two different laws in Canada, one for the great lakes and rivers, and another for coast traffic, and that if Canada is obliged to have three or four laws for inland navigation, it will be still more difficult to agree on one rule for inland navigation for the whole world. T. Gauthier, delegate for the Canadian seamen, pointed out that Canada used in inland navigation vessels are large as 12,000 tons, to which he contended, the same rules should be applied as to ships for ocean navigation, and he believed the same rules should be applied to vessels below 2,000 tons; otherwise it would be impossible to find seamen willing to go on board the latter if they did not enjoy the same privileges as men on larger vessels.

As regards the fishing industry, the proposition discussed was how far should the workers employed in this industry be included in the decisions of the conference. On this matter, as also on that of inland waterways, the conference eventually decided that control should be vested in the permanent international labor office at Genoa, any proposals that office may have to suggest to be submitted at the next conference.

## Halifax Drydock Expropriation Judgment.

The Exchequer Court's judgment in the matter of the expropriation by the Dominion Government of the Halifax Graving Dock Co.'s property at Halifax, N.S., was delivered July 6 by Mr. Justice Audette, who found that the value of the plant and property at the time of the Halifax explosion in Dec., 1917, together with the value of the goodwill, as a going concern, was $1,400,000, from which certain deductions are made in crediting payments by the Crown to the company, so that the net amount payable to the company is $1,394,070.17, and on this amount the company is to receive interest at 5% from June 24, 1918, to the date of the judgment, with costs of the trial. In a subsidiary action, by way of petition of right, in which the company sought to recover $195,638.18, as the estimated cost of certain reconstruction of the dock necessitated by the explosion, the court dismissed the petition, on the ground that the full compensation was awarded in the previous case.

This matter has been pending since May 24, 1918, when the Minister of Public Works reported on it and recommended to the Privy Council that $1,100,000 was a fair value of the property ,and that the question of compensation for the expropriation, carried out under the War Measures Act, 1914, be submitted to the Exchequer Court for adjudication.

## Ocean and River Service Estimates.

The further supplementary estimates for the year ending Mar. 31, 1921, passed at the Dominion Parliament's recent session, contain the following items:—

| | |
|---|---|
| To provide for raising, repairing and maintaining C.G.S. Aranmore | $75,000 |
| Registration of shipping, further amount required | 4,200 |
| Additional amount required for two motor patrol vessels for buoy and lighthouse service in British Columbia | 15,000 |

**Steamship Julius Kessler Corporation** Ltd. has been incorporated under the Dominion Companies Act, with $650,000 authorized capital, and office at Montreal, to build, own and operate steamships of every description, wharves, docks, etc., and to carry on a general navigation and transportation business. Those associated with this company are connected with Pure Cane Molasses Co. of Canada Ltd., a subsidiary of Pure Cane Molasses Co., New York, and owned by Sugar Products Inc., a U.S. concern. We are advised that the s.s. Julian Kessler is being bought in Duluth, Minn., far $650,000, and that she will be transferred to the Canadian register at St. John, N.B., where she will be placed under the management of Wm. Thomson & Co.

**British Shipbuilding.**—London, Eng., press dispatch July 21.—The total ship tonnage now building in the United Kingdom exceeds the amount under construction in the United States by 1,672,000 tons. The aggregate amount under construction in Great Britain is 3,578,000 tons—the highest amount ever recorded. Much comment has been aroused in shipping circles by these figures, but the failure of the United States to maintain its lead in shipbuilding was expected, since the intensive construction there was chiefly a war measure.

**Trawlers and Drifters for Scottish Fishing Trade.**—It is announced that 4 trawlers and 21 drifters, built in Canada during the war for mine sweeping purposes. sailed from Halifax, N.S., during July for Scotland, via the Azores, to engage in the fishing industry there. Each of the trawlers carried crews of 10 each, while the drifters had crews of 8 each. It is also stated that an additional 80 of these ships will be dispatched across the Atlantic at intervals, having been taken over by the Admiralty for home fishery service.

**Halifax Ocean Terminal Docks.** — The estimates passed at the Dominion Parliament's recent session contain an item of $12,004.05 to refund Foley Bros., Welch, Stewart & Fauquier, amount of royalty paid Public Works Department, for filling taken from Halifax harbor, and used in connection with their contract for ocean terminal docks.

**The Rose Castle Steamship Co. Ltd.** has been incorporated under the Dominion Companies Act, with $1,500,000 authorized capital, and office at Montreal, to own and operate steam and other ships, wharves, docks, warehouses, etc., and to conduct business as warehousemen, common carriers, and steamship agents and managers.

**Atlantic and St. Lawrence Stevedoring & Contracting Co. Ltd.** has been incorporated under the Dominion Companies Act, with $25,000 authorized capital, and office at Montreal, to carry on a general stevedoring business. The incorporators are: P. J. Melvin, J. Mauro, stevedores; H. B. MacLean, manager; W. Audas and J. A. Mancotel, all of Montreal.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**American Locomotive Co.** — Chas. M. Muchnic, Vice President, American Locomotive Sales Corporation, New York, N.Y., has been given the Japanese Imperial Order of Meiji, 4th class, and the insignia of the Imperial Order of the Rising Sun.

**Davis-Bournonville Co.**, Jersey City, N.J., has issued a bulletin on the Radiagraph, No. 1a, for cutting steel plates and billets, in fabricating plants, steel mills, boiler shops, bridge works, locomotive and car shops, with the oxy-acetylene and oxy-hydrogen torch.

**Electric Service Supplies Co.**, Philadelphia, Pa., represented in Canada by Lyman Tube & Supply Co., Montreal, has issued a bulletin, "Keystone Locomotive Head light Equipment," describing and illustrating Keystone turbo-generators, Golden Glow locomotive headlights, Keystone headlight switches, Keystone classification and tender lights, etc.

**Walter Lambert**, naval architect and marine surveyor, 14 Place Royale, Montreal, has been appointed Canadian agent,


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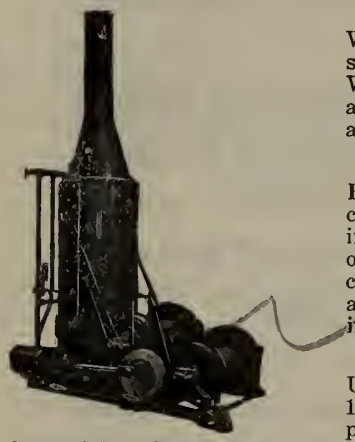

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520 H.P. 150 R.P.M. 185 lbs. Steam Pressure

| | | |
|---|---|---|
| HP. | Cylinder | 12¾ inches |
| Intermediate | " | 21½ " |
| L.P. | " | 35 " |
| Stroke | | 24 " |

Condenser, Air, Bilge and Feed Pumps, up to and including thrust bearing included with engine.

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Cochran & Co., Annan, Ltd., of Annan, Scotland, manufacturers of the Cochran type of vertical donkey boiler, coal or oil fired. Mr. Lambert has opened an office at 408 Bower Building, Vancouver, B.C., to take care of his interests on the Pacific coast.

**Metal & Thermit Corporation,** New York, N.Y., has issued Thermit Pipe Welding Pamphlet 16, third edition, in which the subject of Thermit pipe welding has been revised and brought up to date. The pamphlet describes and illustrates in detail how Thermit pipe welds are made and contains reports on successful tensile strength and vibration tests of Thermit pipe welds conducted by Stevens Institute. A chart showing the comparatively low cost of a Thermit welded pipe as compared with the cost of installing compression flanges with bolts and gaskets, and of installing elbows with flanged connections. The pamphlet also contains an account of a 10 year pipe test at West Albany, N.Y., during which 700 ft. of 4 in. extra heavy Thermit welded pipe, which connected a New York Central Lines power house with a boiler house, was constantly subjected to a hydraulic pressure of 1,500 lb. to the sq. in. without being affected in the least, although some valves were put out of commission.

**Vapor Car Heating Co.,** Chicago. — Edward A. Schreiber, General Manager, died July 4, from heart trouble, following a previous attack on May 20, just after his return from a European trip in the company's interest. He was connected originally with the Pullman car works, steam fitting department, and first entered the employ of the Chicago Car Heating Co. (predecessor of the Vapor Car Heating Co.) in 1901, since which time, and up to his death, at the age of 58, he had been very active in the company's affairs.

---

**Railway Lands Patented.**—Letters patent were issued during June for Dominion lands in Manitoba, Saskatchewan, Alberta and British Columbia as follows:

| | Acres. |
|---|---|
| Edmonton, Dunvegan & British Columbia Ry. . . | 0.367 |
| Grand Trunk Pacific Branch Lines Co. | 50.60 |
| Total . . | 50.967 |


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## The Dominion Air Board's Estimates.

The further supplementary estimates for the year ending Mar. 31, 1921, passed at the Dominion Parliament's recent session, contain the following items:—

| | |
|---|---|
| Civil aviation— | |
| Survey of air routes | $50,000 |
| Flying operations for other government departments | 200,000 |
| Miscellaneous and experimental flying and research | 50,000 |
| Unpacking and carriage of aircraft and equipment | 50,000 |
| Upkeep and replacement of aircraft and equipment | 250,000 |
| Acquisition and equipment of civil air stations | 200,000 |
| Acquisition of emergency landing grounds | 50,000 |
| Military appropriation— | |
| Grant to provincial air force associations | 30,000 |
| Upkeep of Camp Borden, including repairs | 30,000 |
| Pay of officers and airmen, eight months, including rations | 200,000 |
| Travelling expenses | 140,000 |
| Flying in training | 200,000 |
| Maintenance and replacement of aircraft and equipment | 200,000 |

## Transportation Conventions in 1920

Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.

Oct. 11 to 15.—American Electric Railway Accountants Association, Atlantic City, N.J.

Oct. 11 to 15.—American Electric Railway Engineering Association, Atlantic City, N.J.

Oct. 11 to 15.—American Electric Railway Transportation and Traffic Association, Atlantic City, N.J.

Oct. 14, 15.—American Association of Passenger Traffic Officers, Chicago, Ill.

Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Arthurities. M. P. Fennell, Jr., 57 Common St., Montreal.

Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.

Canada Freight Association (Eastern lines)—G. C. Ransom, 909 Shaughnessy Bldg., Montreal.

Canadian Freight Association (Western Lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Suqare, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Monsfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.

Hydro-Electric Railway Association of Ontario —T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.

Niagara Frontier Summer Rate Committtee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.

Railway Association of Canada—W. M. Neal, Montreal.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.

Transportation Club of Vancouver.—C. E. Blaney, Travelling Passenger Agent, Canadian Pacific Ocean Services Ltd., Vancouver, B.C.


# Manufacturing Company

Incorporated under Dominion of Canada Charter, will sell all holdings at bargain price. Quick sale necessary. Company is free from all debt or incumbrances of any kind. Can turn over to purchaser entire capital stock, representing valuable plant, situated on main line of Canadian National Railroad between Toronto and Ottawa. Exceptional railway facilities. Company own docks on property with depth of water for all Welland Canal draft boats. Town in which plant is located has plentiful and reliable supply of non-union labor and ample housing facilities at low rentals for large force. Immediate possession given. Apply P.O. Box 1568, Montreal, Que.

CRANE MALLEABLE FITTINGS

CRANE
LIMITED
HEAD OFFICE & WORKS
1280 ST. PATRICK ST
MONTREAL
BRANCHES: Vancouver, Calgary, Winnipeg, Toronto.

FORGINGS
SEND PRINTS FOR PRICES
CANADA
FOUNDRIES & FORGINGS, LIMITED
WELLAND, ONT.

# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

**ADVERTISING RATES.**

Rates for advertisements set in uniform style in six point under

Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.

Allow five words where replies are to be sent to a box number. Minimum order—$1.

Rates under other headings and for display advertisements on application.

Main 4199

## Walter Lambert

NAVAL ARCHITECT AND VESSEL BROKER

**14 Place Royale - Montreal**

## FOR SALE

### Wood Tow Barge

suitable for floating bunkering equipment.

181′ x 31′ 6″ x 15′.

Capacity, 1,164 tons.

Equipped with 75 H.P. boiler, engine generator set of 50 k.w., motor generator set, 2 steam winches, etc., etc.

Price, $18,000, delivered St. Lawrence port.

### Small Wooden Steamer

In excellent condition. Built in 1918.

Suitable for tug, freight or fishing vessel.

93′ x 18′ 3″ x 11′.

Engines, compound surface condensing, 200 I. H.P. Cylinders, 12″ and 24″ x 16″ stroke. Scotch boiler, 9′ 6″ diam. x 9′ long.

Price, $15,000, delivered Canadian Atlantic port.

## For Sale

"We are now prepared and glad to furnish Stucki Side Bearings per Canadian Patents Nos. 187019 and 170780 upon request. Please call—The Holden Co., Ltd., Montreal, Canada."

DEPARTMENT OF THE NAVAL SERVICE.

NOTICE OF SALE.

Sealed tenders addressed to the Undersigned and endorsed on the envelope "Tenders for Submarines" will be received up to noon of Monday, the 23rd day of August, 1920, for the purchase of the undermentioned submarines:—

C.C. 1—Constructed of steel, length 144′, beam 15′, displacement surface, 310 tons, displacement submerged 373 tons; built 1914.

C.C. 2—Constructed of steel, length 151′ 6″, beam 15′, displacement surface, 310 tons, displacement submerged 373 tons; built 1914.

These submarines, which will be sold as they lie, are presently at Halifax, N.S., where permission to inspect them may be obtained on application to the Cammander-in-Charge of the Dockyard.

Each tender should be accompanied by a certified cheque on a chartered Canadian Bank for 10% thereof, as a guarantee of good faith.

The Department reserves the right to reject any or all tenders received.

Full information and particulars may be obtained on application to the Undersigned or to the Commander-in-Charge, H.M.C. Dockyard, Halifax, N.S.

G. J. DESBARATS,
Deputy Minister
of the Naval Service.

Ottawa, Ont.,
July 6, 1920.

Unauthorized publication of this advertisement will not be paid for.

## NORTHERN CRANES

*MADE IN CANADA*

Electric Traveling Cranes, Electric Gantry Cranes, Hand Cranes, Electric Hoists.

*Write for Estimates.*

**NORTHERN CRANE WORKS, Ltd.**
**Walkerville, Ont.**

## FOR SALE

Three steam tugs and one stern wheeler, about September 1st, now plying on the Saskatchewan River, between The Pas and Sturgeon Landing.

S.s. "Minasin," length 60 ft., width 13.2 ft., registered tonnage, 26.16, n.h.p. 6, speed about 9 miles, screw propelled.

S.s. Sam Brisbin, screw propelled, length 47.5 ft., width 11 ft., n.h.p. 4.2, registered tonnage 7.48, speed about 7 miles.

S.s. Notin, screw propelled, length 48 ft., width 10 ft., registered tonnage 12.56, n.h.p. 4.16, speed 8 miles.

S.s. City of Prince Albert, stern wheeler, length 96 ft., width 20 ft., registered tonnage 88.92, n.h.p. 6.6, speed 8 miles an hour.

Any further information as to price, or further description, of these boats will be furnished on application to the Mandy Mining Company, G. R. Bancroft, Superintendent, The Pas, Manitoba.

## FOR SALE

### At a Bargain

Steam screw wood steamer of 64.73 registered tonnage.

Built in 1890 in New York. Length 115.8′, breadth 23.9′.

Two covered decks and one awning deck. Compound engine 12½″ x 24″ x 17″ of 150 I. H. P., built by Montcrief McLay Company in 1890.

Horizontal Internal Marine Boiler, diameter 90″, length 11′—3″, 115 pounds working pressure. Built by Robb Engineering Company in 1906.

Engine, shafting and pumps in good condition.

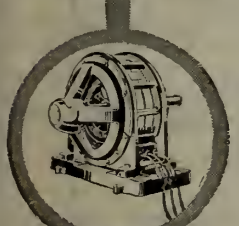
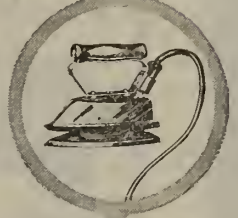
Boiler needs a few repairs. Last test 115 pounds—two years ago.
Hull not in best of condition.

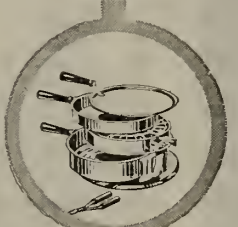
Address all enquiries to the

**Cape Breton Electric Co., Limited,**
**Sydney, Nova Scotia.**

C·G·E

# WIRES AND CABLES.



The uses of C. G. E. Wires and Cables are legion. Wherever electricity can be used there will be found a need for one or more types. No matter how large or how small the job may be, C. G. E. can "Wire" it.

C. G. E. Canadian Black Core Rubber Covered Wires are a product of a Canadian factory. All that years of experience in wire manufacturing can do to enable us to offer our customers perfect wire has been embodied in C. G. E. Wires and Cables. It is a guarantee of quality to be able to say that "it is wired with C. G. E. products."

KILL
LAST AD.

We carry complete stocks of Wires and Cables at our Nineteen Sales Branches from Coast to Coast. Moreover, we have at your disposal experienced Engineers who are ready and willing to co-operate with Architects, Electrical Dealers and Contractors, Electrical Engineers and Central Station Officials for the purpose of rendering service to our Customers.

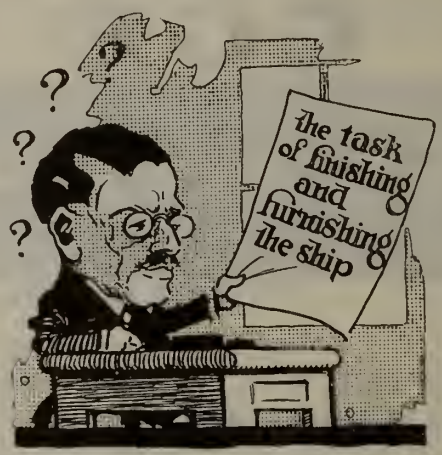
## Canadian General Electric Co., Limited

### Head Office - Toronto

**Branch Offices: Montreal, Quebec, Sherbrooke, Halifax, Sydney, St. John, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Nelson, Vancouver and Victoria.**

## List of Supplies purchased by a Steamship Co.

Anchors.
Air Drill Reamers.
Asbestos.
Boiler Tubes.
Brushes and Brooms, Sweeper.
Boiler Compound.
Blocks.
Brass.
Batteries.
Buckets, Fire.
Belting.
Bells.
Boat Equipment.
Brick.
Blowers, Flue.
Blue Print Paper.
Bathroom Fittings.
Babbitt Metal.
Coal.
Crockery.
Carpets.
Cigars and Cigarettes.
Cleansers, Brass and Metal Polish.
Charts.
Clocks.
Cement.
Chlorinating Outfits.
Chemicals.
Carlining Paper.
Cargo Winch.
Caulking Cotton.
Cooks Vegetables.
Dry Goods Disinfectants.
Dictaphone Crugs.
Decking, Marine.
Electrical Equipment.
Electric Lamps.
Electric Fans.
Furniture.
Fittings.
Flags.
Flooring.
Fire Place.
Flowers.
Fire Extinguishers.
Fog Signals.
Floor Tiles.
Groceries.
Grease.
Grates.
Grain.
Gauges.
Glass.
Hose.
Hardware.
Hoist.
Hydraulic Jacks.
Ice Machines.
Ice Cream and Soda Fountain.




CHAPTER 8.

# WHAT SHIP OPERATORS BUY

The 116 articles noted in the adjoining columns are, for the most part, mere indexes of groups of things the Steamship Companies have to buy.

And, almost always, they must buy in a hurry, using the best judgment of the moment, based on prior experience, and trust to luck, or an overruling providence, that they have not made many mistakes.

The advertisements they read in

## Canadian Railway and Marine World

help them in their selection. But, you men who use these columns, can make them vastly more helpful, by telling the story of your goods in detail, frankly, fairly, honestly.

Ships to the value of more than $50,000,000 are now in course of construction; so now is the time to tell that story.

## CANADIAN RAILWAY AND MARINE WORLD

**Toronto** *Member of* **Canada**

*Audit Bureau of Circulations,*
*Associated Business Papers,*
*Canadian National Newspapers and Periodicals Association,*
*Canadian Press Association.*

## List of Supplies purchased by a Steamship Co.

Keys.
Liquors.
Life Saving Apparatus.
Locks.
Lights.
Lighting System.
Laundry Machinery.
Marconi Wireless.
Marble.
Medicine Chests.
Markers, Linen.
Nautical Equipment.
Oil, Fuel and Lubricating.
Oil Storage Equipment.
Ovens.
Packings.
Pumps.
Pianos, Gramophones.
Propeller Blades.
Pathescope.
Plumbing Supplies.
Ropes, Wire.
Refrigerators.
Rubber Goods.
Repair, General.
Ranges, Kitchen.
Rubber Stamps.
Roofing Material.
Rivets, for Ships.
Rails.
Silverware.
Stationery.
Steel Plates.
Soap.
Sanitary Drinking Cups.
Searchlights.
Saws.
Skids.
Scales.
Signals.
Steering Stand, Brass.
Shaft.
Skylight Quadrant.
Typewriters.
Tarpaulins.
Tickets.
Toilet Cabinets.
Turbine Water Motor.
Time Recorder Machines.
Thawing Outfit.
Uniforms.
Upholstering.
Valves.
Vacuum Cleaners.
Vegetable Cookers.
Waste.
Wireless.
Wire.
Water Tanks.

**Engineers and Contractors**

**ANGUS SINCLAIR, C.E.**

*Railway Contractor*

OFFICE: EXCELSIOR LIFE BUILDING,
Adelaide and Toronto Sts., Toronto

**THE ARNOLD COMPANY**

ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
REPORTS, DESIGN AND CONSTRUCTION
Complete Railway Shop and Terminal Properties—
Electrification of Steam Railroads.
OUR EXPERIENCE COVERS THIRTY-FIVE PLANTS
CHICAGO

ROBERT W. HUNT, President CHARLES WARNOCK, Vice-Pres. and Genl. Mgr.

**Robert W. Hunt & Co., Limited**

Consulting and Inspecting Engineers
Chemists and Metallurgists

Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement; Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.

Resident inspectors at all important manufacturing centres in Canada, the United States and Great Britain.

REPORTS ON PROPERTIES AND PROCESSES.

Head Office and Laboratories:

McGill Building, - - - - - - - MONTREAL, QUE.

Branches: TORONTO VANCOUVER LONDON, ENGLAND

**The St. Lawrence Dock & Shipbuilding Co.**
LIMITED
LEVIS QUEBEC

SPECIAL ATTENTION TO RECONSTRUCTION WORK AND REPAIRS OF ALL KINDS TO STEEL HULLS, ENGINES AND MACHINERY. EQUIPPED WITH MARINE RAILWAY.

**General Railway Signal Company of Canada, Limited**

Consulting Railway Operating Engineers

Reports, Freight and Passenger Yards and Terminals, Single Track Capacity, Side Track Location, Interlocking and Block Signal Design and Construction.

Head Office - Lachine, Quebec

**DOMINION TOWING & WRECKING CO., LIMITED**

Tug Strathmore
" Strathbell

Harbour Tug Service

Lighter Strathbuoy—Capacity, 700 tons.

Equipped for all kinds of Towing, Wrecking, Etc.
Sand and Gravel supplied for Concrete Work, Rock and Soil Filling for Cribwork.

Dock Telephone, South 184; Head Office, South 2383. JOHN BELL, General Manager, 509 Grain Exchange, Fort William, Ont.

**Canadian Gold Car Heating & Lighting Company, Limited**

ECONOMICAL—SYSTEMS OF MERIT—WILL NOT FREEZE

Vapor Systems, Pressure Systems, Vapor and Pressure Systems, Hot Water Systems, Electric Systems
Automatic Heat Control for all Systems—Ventilators

346 ST. JAMES STREET MONTREAL, CANADA

**CHICAGO RAILWAY SIGNAL & SUPPLY COMPANY**

*Manufacturers of All the Name Implies*

Interlocking and Electric Signals and Materials, Highway Crossing Alarms, Forgings, Castings, Etc.

CANADIAN DISTRICT OFFICES.
—Western— Moore, Cameron & Hill Ltd., McIntyre Block—Winnipeg.
—Eastern— Moore, Cameron & Hill Ltd., Beaver Hall Hill—Montreal.

**Malleable Castings** High Grade Material First Class Service

**Galt Malleable Iron Co., Limited - GALT, ONT.**

# CANADIAN VICKERS, LIMITED
## MONTREAL

## Shipbuilders, Engineers, Boilermakers

S. S. CANADIAN PIONEER
for Canadian Government Merchant Marine

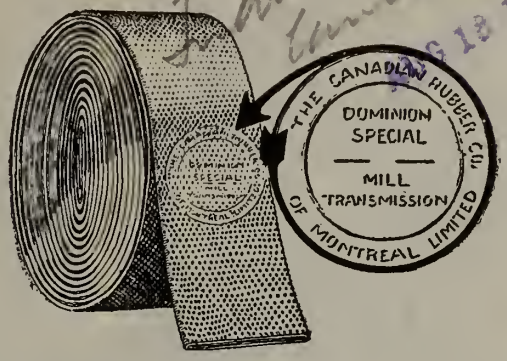
Makers Under License Best British Designs

WINCHES, WINDLASSES, ASH HOISTS,
STEERING GEARS, TELEMOTORS

*Immediate Deliveries from Stock*

*Cables:*
VICKERS, MONTREAL

KILL
LAST AD.




# "Plus Service" Transmission Belting

Service, not price, should be the basis on which your purchases of transmission belting are made. The highest-priced belt is built to give maximum service and, in the final analysis, is the most economical.

Low-priced belting is the most expensive, for it cannot be expected to wear for any length of time, and usually doubles its first cost in expensive repairs, power waste, idle machines and lost production.

The possibilities of waste in buying and placing belts is so great that no one but a belting expert should ever be permitted to select a belt for even the most unimportant purpose.

It isn't necessary that you maintain a belting expert. We have established a special service department in charge of belting engineers who will, without cost, gladly take the responsibility of making your transmission belting give Plus Service by keeping its cost at the minimum. They will specify

# Dominion Friction Surface Belting

because of its unbroken record of satisfactory performance, but only when it will most efficiently meet your requirements.

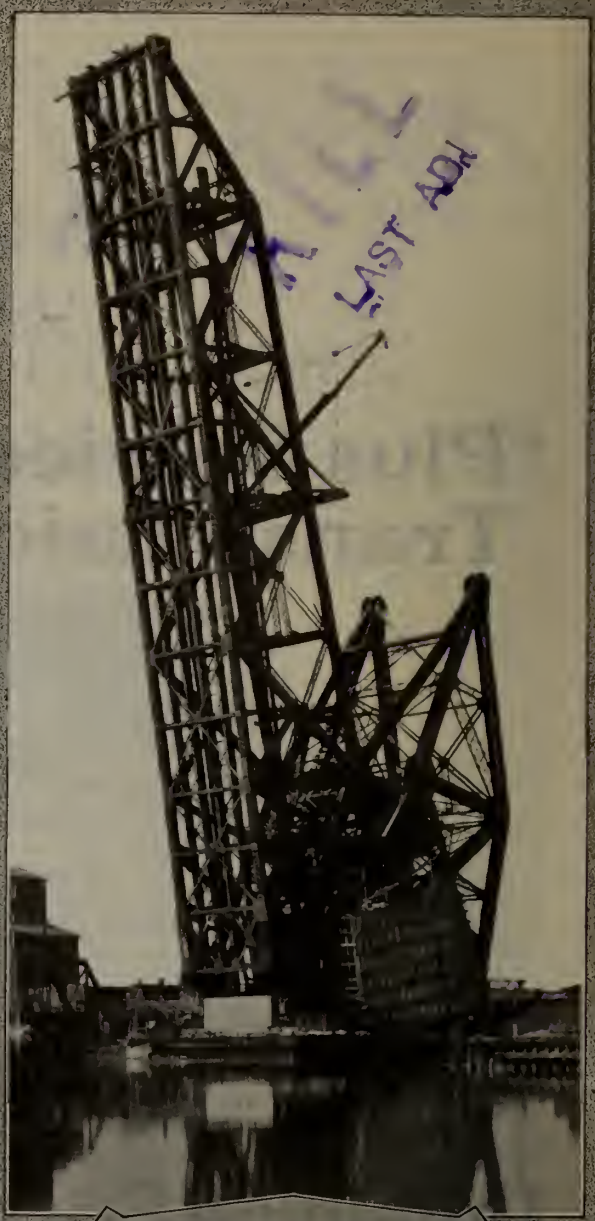
Phone or wire our nearest service branch that you may test the value of this service.

CANADIAN CONSOLIDATED RUBBER CO. LIMITED
DOMINION RUBBER SYSTEM
AND ASSOCIATED COMPANIES

*Our Dominion Hose, Packing and Industrial Rubber Goods are all the Same High Standard as Dominion Friction Surface Belting.*

## Dominion Rubber System Service Branches

| | | | |
|---|---|---|---|
| Halifax, | Fort William, | Toronto, | Edmonton, |
| St. John, | Winnipeg, | Hamilton, | Calgary, |
| Quebec, | Brandon, | London, | Lethbridge, |
| Montreal, | Regina, | Kitchener, | Vancouver, |
| Ottawa, | Saskatoon, | North Bay, | Victoria. |



# Protection

In specifications for construction of steel bridges provision is always made for protection. No one would think of allowing a steel bridge to stand without a protective coating.

It is of vital importance that specifications insist on the use of a coating which will afford maximum protection from those elements which combine to cause rapid depreciation.

The paint that you can rely upon and specify with safety is one that has back of it a reputation for durability, proven in service—a material that has made good and is recognized for its quality and demonstrated value.

You can write Superior Graphite Paint into your specifications without the hazard of experiment. It has made good for 35 years.

**Dominion Paint Works, Limited**

*Makers of*
*Degraco Paints, Varnishes, Enamels.*
WALKERVILLE, CANADA.
Montreal, Toronto, Winnipeg, Quebec, Vancouver, Sydney.

SUPERIOR GRAPHITE PAINT
It Prevents Rust

DEGRACO PAINTS

Six-Jack Locomotive Hoist, Capacity 300 tons, Wheeling a Mallet Compound, B.R. & P. Shops, E. Salamanca, N.Y.

# Whiting Screw-Jack Locomotive Hoist

There is no locomotive too large for a Whiting Hoist.

Our six-jack type handles the largest Mallet Compounds with speed and safety.

In a recent test of a six-jack hoist, the average time required to hoist or lower a Mallet engine was only 8 minutes. It raises or lowers to a fraction of an inch. All work can be done on the floor level, avoiding the complicated and close work necessary in drop pits.

This hoist should be at every Division Point.

*Send for illustrated folder of operating costs.*

*Catalog 145 on request.*

Built under U.S. Patent No. 1085734, dated Feb. 3, 1914—other patents pending. We are sole owners of this patent.

**WHITING FOUNDRY EQUIPMENT CO.**

**Harvey (Chicago Suburb) Ill.**

**Coach Hoists—Transfer Tables—Turntable Tractors.**

**WHITING**

**CRANES OF ALL TYPES / FOUNDRIES EQUIPPED COMPLETE**

# Geo. P. Nichols & Bro.

## Turntable Tractors

More than one hundred railroads use over 700 Nichols' Electric Tractors.

## Transfer Tables

Eighty-five railroads and car builders use nearly 200 Nichols' Electric Transfer Tables.

There's a Reason

**2137 Fulton St., Chicago**

**JOHN DATE**

*Manufacturer of*

Diving Apparatus

*For Sale or Hire*

Brass Founder and Coppersmith

13-15 Concord St., Montreal.

# Car Closets

Flush or Dry

DUNER CO. 101 S. CLINTON ST. CHICAGO

# RAILWAY EQUIPMENT

Locomotive and Car Castings

Cast Steel Couplings
(Type "D" and "Penn.")

Cast Steel Truck Bolsters and Side Frames

Tender Truck

and

Car Axles

Forging Billets

Car Plates

# MARINE EQUIPMENT

Stern and Rudder Frames

Marine Engine and Deck Castings

## DOMINION FOUNDRIES AND STEEL, Limited

**Hamilton - Canada**

"MEAD-MORRISON"

CANADIAN MM ©

## Hoisting and Coaling Machinery

***Manufactured in Canada***

**Four "Mead-Morrison" Coaling Towers**

—built in capacities of 300 tons an hour each—loading S. S. W. Grant Morden, one of the largest colliers built in Canada by Port Arthur Shipbuilding Co.

**GANTRY CRANES**
**COAL AND ORE BRIDGES**
**CONVEYING MACHINERY**
**HOISTING MACHINERY**
**GRAB BUCKETS**

***Put Your Problem Up To Us!***

AGENTS:

| | |
|---|---|
| Harvard Turnbull & Co. - - - | Toronto |
| Kelly Powell Ltd. - - - | Winnipeg |
| Robert Hamilton - - - | Vancouver |

**CANADIAN MEAD-MORRISON CO**
LIMITED
285 BEAVER HALL HILL
MONTREAL
WORKS WELLAND ONT

# For Railroad and Steamship Upholstery

**The answer to the question, "What fabric is universally used for upholstery?"**

CHASE

GOAT BRAND

TRADE MARK.

MADE BY SANFORD MILLS

MOHAIR PLUSH

**Mohair is the logical choice of all upholstery fabrics**

Why? First—Durability. Second—Fast color. Third—Rich appearance. Fourth—Sanitary.

How long does it last? According to quality, eight to twenty-five years.

What evidence that it is sanitary? Careful scientific tests through many months by some of America's leading railroads, hotels and homes. Particulars gladly furnished on request.

What is Mohair? The lustrous fleece of the Angora goat.

How strong is Mohair compared with wool? According to Government tests more than two and one-half times.

For more than thirty years CHASE Goat Brand Plush has been the standard with America's largest railroads and steamship lines.

Recently there was exhibited a seat covering in excellent condition after a constant service of twenty-four years. It was upholstered with CHASE Goat Brand Plush.

**L. C. CHASE & CO., Boston, New York, Detroit, Chicago, San Francisco**

*Leaders in Manufacturing since 1847*

# The Star Brass Works

*Largest Exclusive Trolley Wheel Makers in the World.*

**Kalamazoo Michigan**

**Canadian Representatives:**

**Northern Electric Company, Limited**

Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

**Dawson & Co., Limited, 148 McGill St., Montreal**
**352 Donald St., Winnipeg**

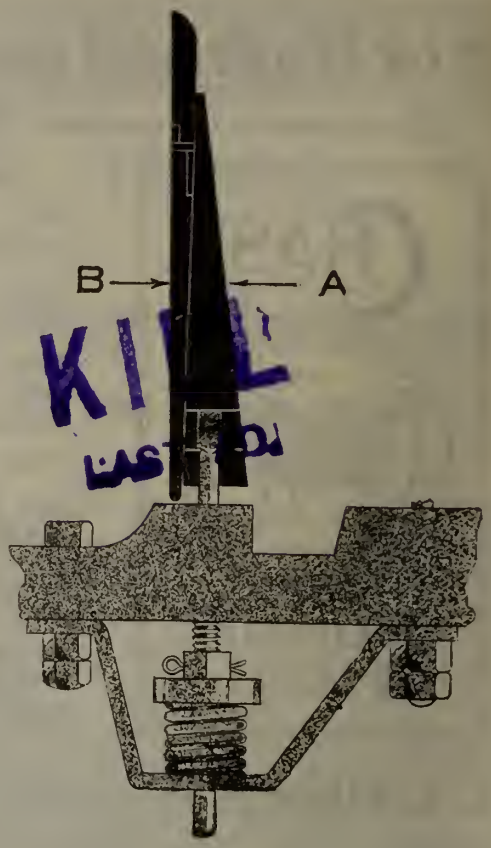
*Made in Canada*

# 23,000 MILES

"622 out of Bartown shops July 19, 1919, has since made approximately 23,000 miles during which time all rod brasses and bushings have been renewed once. No driving box or wedge work done during this period, nor have there been any reports on the wedges by engineers. Roundhouse foreman reports that a remarkable reduction in the number of hot driving boxes has been noticed since the Franklin Wedge has been applied."

(Master Mechanic)

We will tell you the name of the road if you want it.




## Franklin Railway Supply Co.
of Canada, Limited
Transportation Bldg., Montreal

A LINE OF P♔H WROUGHT TUBULAR STEEL POLES ON THE BLOOR STREET VIADUCT—TORONTO, CAN.

MADE IN CANADA.

P♔H

# Tubular Poles

NEAT, UNIFORM AND ORNAMENTAL
in appearance, combined with
GREAT DURABILITY, STIFFNESS AND STRENGTH
make them ideal for
ELECTRIC LIGHT AND POWER
TELEPHONE, TELEGRAPH
AND STREET RAILWAY
LINES
and also for
FLAG POLES,
all sizes and weights.

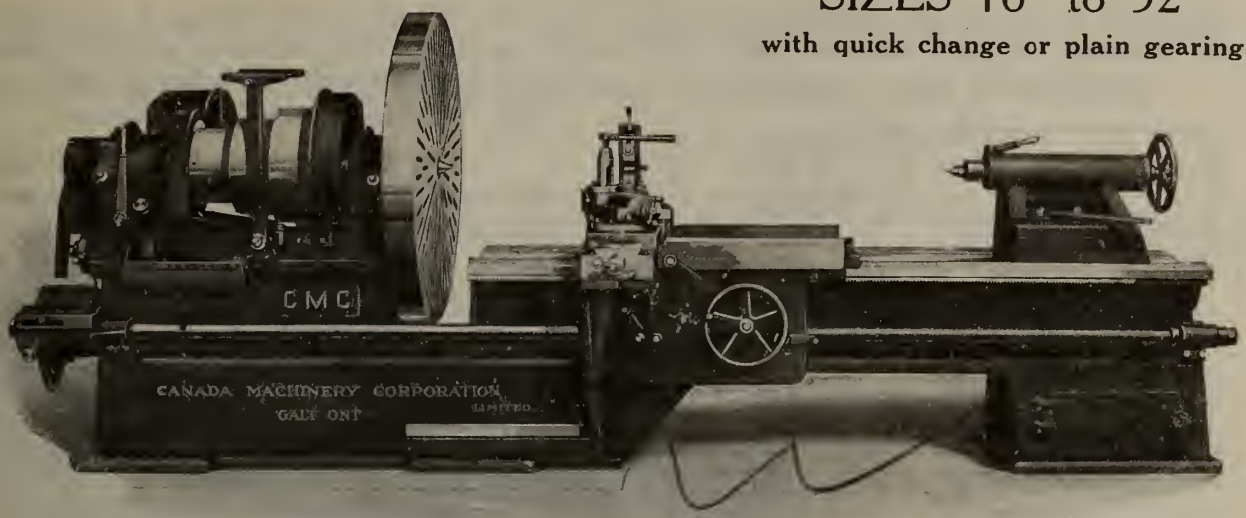
## PAGE-HERSEY
**Iron, Tube & Lead Co., Limited**
HEAD OFFICE:
**100 Church Street - Toronto, Can.**

C.M.C.

# GAP LATHES

SIZES 16" to 32"

with quick change or plain gearing




32" Gap lathe with quick change gears

CANADA MACHINERY CORPORATION, LIMITED, GALT, ONTARIO

Toronto Office and Warerooms, Brock Avenue Subway.

**MINER**
**FRICTION DRAFT GEAR**

CLASS
A-18-S

THE
PERFECT
DRAFT GEAR

**MINER**
**BALANCED**
**SIDE BEARING**

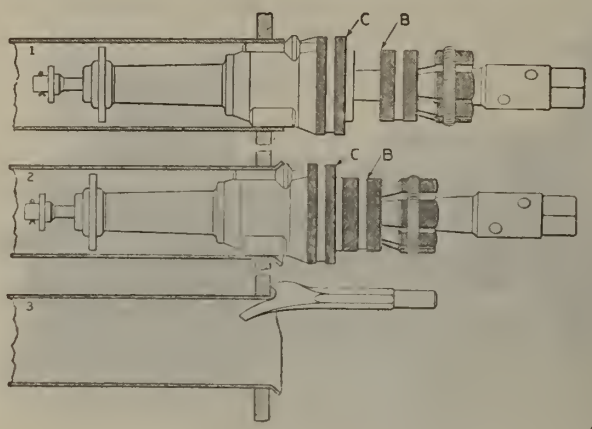
SAVES RAILS
WHEELS
AND COAL

**CANUCK SUPPLY CO., LTD.**
MONTREAL

W. H. MINER
CHICAGO

# Faessler Stationary, Water Tube and Marine Boiler Tube Expander

This expander is constructed to perform the perfect job of rolling a tube tight on the sheet and also flare or bell to any desired angle up to 45 degrees with the same tool, and without removing it from the tube until the work is completed.




The process does not pinch or thin the tube at the bottom of the flare and the outside edge of the sheet; these parts are left the same thickness of gauge as the bottom of the tube.

This tool is made throughout of heat treated and tempered steel, and is extremely durable.

The various operations can be plainly seen by the illustration.

*WRITE FOR BULLETINS*

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**Head Office—Montreal**

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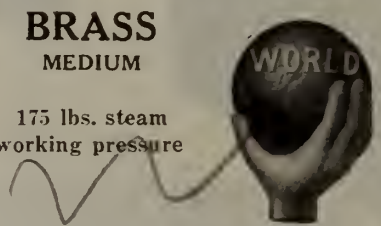
Hundreds of our customers have learned to couple the "WORLD" trademark with exceptional satisfaction. We are conscious of this trust and faithful to it.

The whole-hearted dependence which our customers have in our products places upon us a responsibility which will never be violated, even to the slightest degree.

## "WORLD"

**BRASS**
**MEDIUM**

175 lbs. steam working pressure




**VALVES**
**HEAVY**

Double Taper Bronze Seats

NO. 351.
GLOBE VALVE.

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**Limited**

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**Steel Ships, Engines, Boilers, Castings, and Forgings**

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK

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Two Dry Docks
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Shops
EQUIPPED TO
OPERATE
Day or Night
on
Repairs

GRAND TRUNK RAILWAY SYSTEM

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**Union Station,**
**Toronto, Ont.**

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# Morganite Motor and Generator Brushes

Brushes with a reputation for successfully overcoming commutating troubles. Many different grades of Graphite, Carbon Graphite, Metal and Traction brushes. Brushes for every class of service.

**Made in England at Battersea Park, London.**

Send us particulars of your machine and we will supply you on trial, brushes that will save you money and worry. *Now* is the time to give them a trial.

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## Railway & Power Engineering Corp., Limited

**133 Eastern Ave., Toronto, Ontario**

Finished Thermit weld on wheel press.

**Testimonial** THERMIT WELDING **No. 10,002**

***From the***

***New Orleans Great Northern Railroad, Bogalusa, La.***

"The accompanying illustration shows a very successful Thermit weld made recently on a large wheel press at the Bogalusa, La., shops of the New Orleans Great Northern Railroad: This weld was made while the press was in position, as shown, opposite a similar weld which was made five years ago and which has stood the strain of all these years."

Send for Pamphlet No. 2144

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40" Stroke Engine Built for Imperial Munitions Board.

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Electric and Hand Power Direct or Alternating Current Standard Bridge Cranes.

Revolving Hammer Head and Luffing Boom Types for Shipbuilding and Unloading Wharf.

Also Gantry and Special Types.
(Capacity 2 Tons to 200 Tons)

Coal and Ore Handling Equipments.

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## Ideal for the drainage of both Railway Roadbed and Highways

These Culverts furnish the most reliable assurance against washouts. Where other types of Culverts will break from the effects of frost, ice or unexpected stresses, the Pedlar "Perfect" Culvert will stand right up to its work. When a Pedlar Culvert of the right capacity is properly installed, it is safe to assume that it will never fail from any cause. Its great strength, due to the narrow and deep lateral corrugations, and the time-defying nature of the galvanized Toncan-Metal from which it is made. These features combine to give a length of service that is practically unlimited.

*Write for Culvert Booklet R.M*

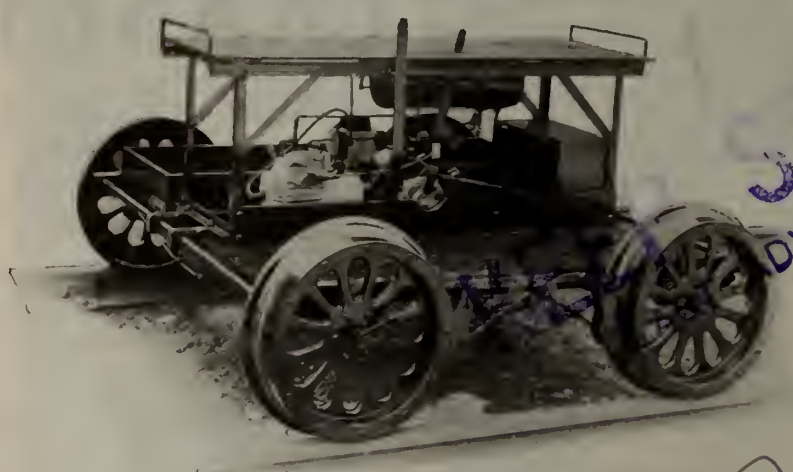
## The Pedlar People, Limited

(ESTABLISHED 1861)

Executive Office and Factories, Oshawa, Ont.

Branches: Montreal, Quebec, Halifax, St. John, N.B., Ottawa, Toronto, Winnipeg, Calgary, Vancouver.

# Kalamazoo Motor Cars



Kalamazoo No. 16 Motor Car

A light sturdy car, particularly adapted for use of Roadmasters, Signalmen and Inspectors. Has through running axles, with four wheels of equal diameter and motor and seat in center of track. Equipped with magneto ignition and free engine clutch with step starting device, features which are very desirable for easy starting of motor.

All Kalamazoo Motor Cars equipped with Hyatt Roller Bearings throughout.

**Write us for bulletins and specifications of our various cars.**

## Kalamazoo Railway Supply Company

**KALAMAZOO, MICH., U.S.A.**

Canadian Representatives: Kelly Powell Ltd., Winnipeg.
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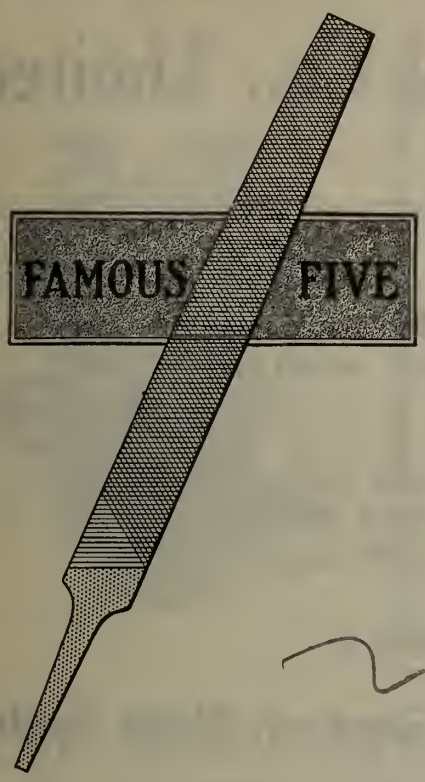


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Each of the five brands of files listed below has earned separately a reputation for efficiency and reliability.

Each has passed a thousand exacting tests in the hands of practical file users over a period of fifty years.

So we call them the "Famous Five", and are proud of the fully-earned name.

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**Made in Canada by:**

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ANHYDROUS AMMONIA ($N.H_3$.) COLD AIR MACHINERY CARBONIC ANHYDRIDE ($C.O_2$.)

Improved Ethyl Chloride Systems

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SOLE BRITISH LICENSEES AND MANUFACTURERS OF

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(MADE IN CANADA)

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THE STEAM FITTINGS COMPANY, LIMITED

Automatic Steam Traps Thermostatic Control Valves and Fittings Automatic Regulators

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Makers of: "Union" Anti-Fouling and Anti-Corrosive Compositions. High grade material used by the British Government, Admiralty, and other prominent leading Organizations.

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Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

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***Steel Ship Builders and Ship Repairers***

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Hull Repairs Electric Welding
Boiler and Machinery Repairs.

**Shipyards, Drydock and Shops - - Halifax, N. S.**
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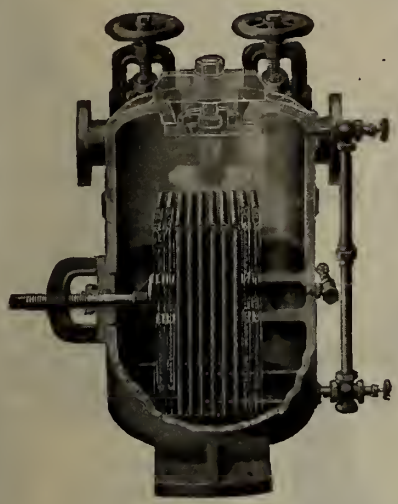
# THE REILLY MULTI-SCREEN FEED-WATER FILTER



The hot distilled water secured from marine power plants, operating condensing, is ideal for boiler feed after the oil which it contains has been removed.

The Reilly Multiscreen Feed Water Filter and Grease Extractor efficiently removes this oil from the water. It is also suitable for the removal of mud or sand from lake or river water when used for boiler feed.

The area of the filtering surface is 500 times the area of the water inlet passage, far exceeding that of any other filter regularly manufactured, thus insuring a slow and efficient rate of filtration through the filtering cloths.

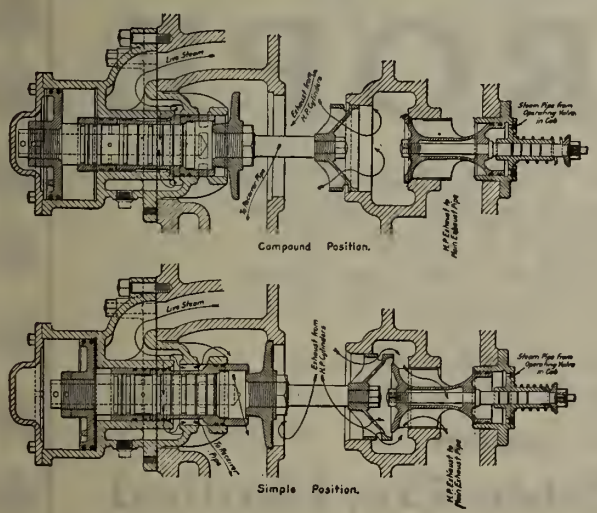
By-pass valves, allowing the uninterrupted flow of water to the boiler, and a standard manhole in the top of each filter for the removal of the cartridges, make cleaning a very easy operation.

MADE IN CANADA BY

**THE MASON REGULATOR & ENGINEERING COY., LIMITED**

MONTREAL TORONTO

# Alco Intercepting Valve




In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

In the ALCO system of compounding these conditions are covered by two of the functions of the intercepting valve.

As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

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Ironworking and Woodworking Machinery
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We carry a large stock of New and Used Belting, Pulleys, Shafting, Hangers, Pipe and Fittings, Machinist's, Millmen's and Engineer's Supplies of every description.

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We also manufacture and carry in stock all kinds of

*BARE AND INSULATED ELECTRICAL WIRE AND CABLE*

*Write nearest office for quotations*

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Maintaining efficient service entails the use of many materials, not the least important of which, is oil.

Dirty oils, the results of careless storage, hamper maintenance and efficiency.

BOWSER

stored oils are clean and free-flowing. They retain their useful qualities. Records are accurately kept and time and labor saved by the use of Bowser measuring pumps.

*An analysis by our engineers does not put you under obligation. Write for this service.*

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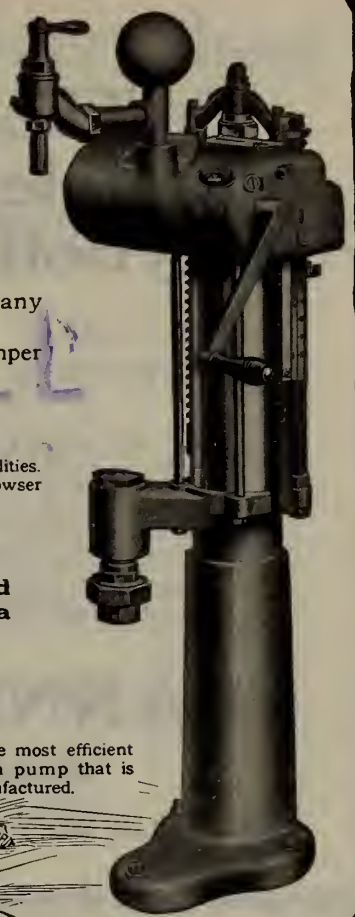
The illustration to the right shows the Bowser Figure 106 gallon pump. Can be used for all lubricating and non-lubricating oils. Rapid and accurate in operation.

The most efficient gallon pump that is manufactured.



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Complete Equipment for Electric or Gas Lighting of Railway Passenger Cars

Complete Apparatus for Harbors and Rivers—Buoys, Beacon Towers and Lanterns

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**TATE Flexible Staybolt**

THREADED CONNECTION

used by all Railroads for service

**"F.B.C." Flexible Staybolt**

WELDED CONNECTION

most economic easily applied and gives extended service

*Please send your orders at once for prompt delivery*

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Manufactured and sold in Canada by CANADIAN ALLIS-CHALMERS, Limited, General Offices, Toronto, Ont.

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**Little David Tools *The Choice of Men Who Know***

**The simplicity, sturdiness and power of Little David Air Tools has won a place for them in over 250 railroad shops alone. "Little David Tools" will not fail you—staying qualities are built into them and the design is most advanced—for instance, in the riveting hammer the valve is offset so that it cannot be injured by the piston and valve breakages cause considerable delay and expense. The drills contain many less parts than similar machines and similar parts are interchangeable. If you have never used them, their simplicity, power and economy will be a revelation.**

*Ask for bulletins 8000, they contain information that you ought to have.*

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# Don't sell your big cars. Convert them to real "rushour" cars.

*Standardize!* *Pneumatize!*

There is NO REASON now why your present cars should not be transformed and standardized to give perfect platform economies and a higher rate of passenger exchange and effective fare collection than was deemed possible before the development of NATIONAL PNEUMATIC car speed up devices.

Equip these cars with Pneumatic Door and Step Control.

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Porcelain Insulators and Pole Line Hardware

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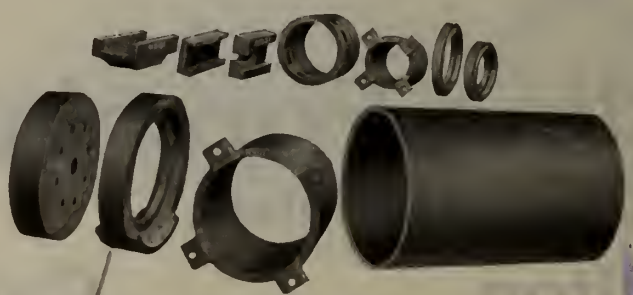

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## Where The Acid Test Is Made

The Acid Test of any material is its ability to render good service under any conditions that may arise. Locomotive valve and cylinder packing, to be efficient, must be ample in strength—and should possess the stamina for hard, continuous wear.

## Hunt-Spiller Gun Iron

packing rings are used on most of the largest railroad systems of the country. It not only meets the acid test of service—it meets the economy test as well.

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**DISSOLVED ACETYLENE**

***The Universal Gas with the Universal Service***

is the choice of thousands upon thousands of welders who from long experience have learned that this gas produces perfect welds and cuts.

Our conveniently located plants and branches have ample capacity to fill every demand. Write for details of our Nation-wide Service Plan.

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A LINK-BELT LOCOMOTIVE CRANE saves $18,000 annually for the B. & O. C. T. Ry. Co. of Chicago.

They use it for cleaning out cinder pits, loading and unloading cars, making fills and roadbed for new track, handling steel rails and heavy construction work, pile driving, etc.

It is an invaluable aid, and it does the work of 25 men. In addition to this substantial financial saving, it decreases interference with train movement, and more quickly releases cars for other service.

Let us tell you more about the Link-Belt Crane. Send for catalog No. 370.

**CANADIAN LINK-BELT COMPANY, LTD.**

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Railway and Steamship Lines
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SPECIAL FACILITIES FOR REPAIRS

SHEER LEGS AND WHARFAGE AT DEEP WATER PIER

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Locomotive and Car Wheel Tires
Steel Tired Wheels of all kinds

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NEW BRASS FOUNDRY

Rough or Machined Complete to Specification

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LATERAL MOTION TRUCK DEVICE
ROLLER SIDE BEARINGS—PASSENGER, FREIGHT, LOCOMOTIVES
70-TON DOUBLE ACTION TRUCK, LATERAL AND RADIAL MOTION
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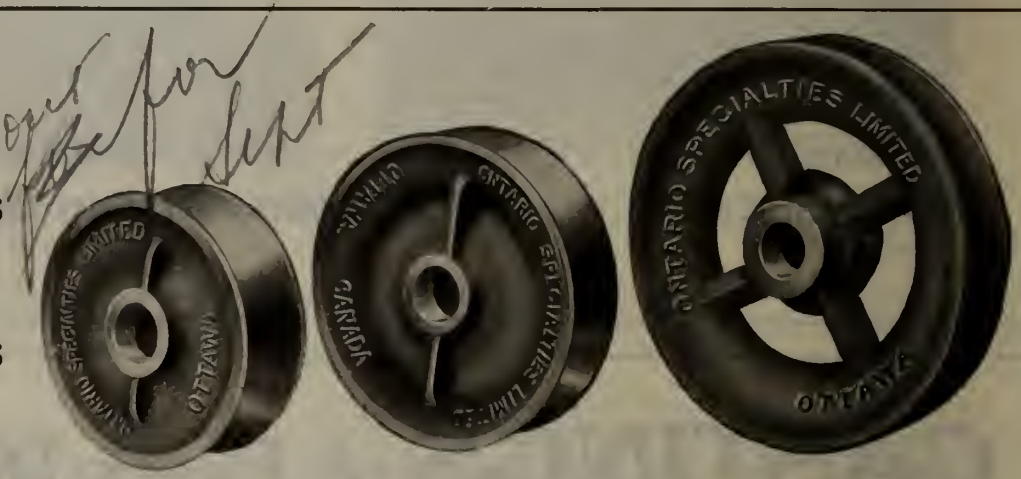


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**Brass Manufacturers - - - Ottawa, Canada**

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In other words, what do you get when you buy "VAN DORN".

Not merely a piece of machined iron, or steel. When you buy "VAN DORN" gearing you get MAXIMUM GEAR SERVICE

which means

OPERATING EFFICIENCY, as well as DURABILITY.

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AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps*
*Double Shoulder Solid Bottom*
*Switch Riser Plates*

SWITCHES
FROGS AND CROSSINGS
MANGANESE TRACK WORK A SPECIALTY

CANADIAN RAMAPO IRON WORKS, LIMITED
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# Butterfield Superiority

in Quality, Finish and Service is built into each and every tool

Angular, Concave, Convex, Form CUTTERS, End Mills, Worm Hobs, Generating Hobs, Hollow Mills.

Gear, Plain Milling, Side Milling, Step Stocking CUTTERS, Metal, Slitting and Screw Slotting Saws, Slitting Discs.

**Ask for Drill and Cutter Catalog "A"**

## Butterfield & Co., Inc.

**Rock Island, Que.**

These Reinforced Brake Shoes weighed approximately twenty pounds each when put in service. When ready for the scrap heap, after long and satisfactory use, they weighed about six pounds each.

Just compare this record with that of ordinary unreinforced brake shoes. Almost invariably they go to pieces before being half worn out, and their average scrap weight is about fifteen pounds.

No argument for ordinary shoes can meet the demonstrated facts that stand behind Reinforced Brake Shoes.

*Manufactured in Canada,*

**Dominion Brake Shoe Company, Limited**

The HOLDEN CO., Limited, Agents,
350-356 St. James Street, MONTREAL


KEEP STANDING
LAST ADVERTISEMENT

**Money Saving and Efficient**
**The HOLD TITE NUT LOCK**

**STATEMENT**

Showing comparative cost using a Standard Nutlock now on the market and the HOLD TITE NUT LOCK as applied to the car body of a standard 40 top box car.

STATEMENT was prepared from the specifications of the body of a standard box car which include the Lock.

**Summary**

| | |
|---|---|
| Total Cost using a Standard Nutlock on one Box Car Body | $3.36 |
| Total Cost using the HOLD TITE NUT LOCK on one Box Car Body | 1.51 |
| Difference in Cost (per car) in favor using the HOLD TITE NUT LOCK | $1.85 |

**WHAT MORE? NOTE THE SIMPLICITY**—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

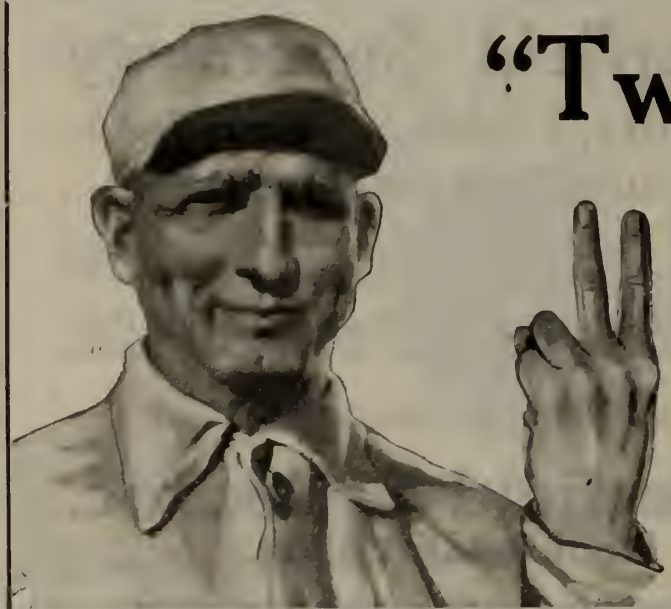
Why not save this Cost by always using the HOLD TITE NUT LOCK?

The cheapest device used; absolutely effective. Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

**Edward A. Robinson Co., Ltd.** 228 Craig St. West Montreal

**THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF**

# "Two Things"



says the Luxeberry Painter "are desirable in Varnish,—quality and uniformity. They make the finest finishing possibilities a pleasant routine instead of an uncertain hazard.

I always use Berry Brothers' products because their uniform quality enables me to produce a finish that satisfies completely from every artistic and economic standpoint."

**BERRY BROTHERS** INC
World's Largest Makers
Varnishes and Paint Specialties

Walkerville, Ont.

# Thomas Rail Anchor Tie Plate

**Chicago Malleable Castings Co., West Pullman, Chicago, Ill.**

Rail Seat inclined and pedestaled
Hook on inside flange of Rail

THE RIGHT WAY—
THE TWO WAY—
THE TIGHT WAY

**MADE IN CANADA**

*Canadian Representative*

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MILEAGE is a big talking point in the Street Railway field. It is why Columbia Pyramid Brushes are the universal choice.

*Brushes for all Railway Motors*

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TORONTO

KILL LAST AD.

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Chilled Tread Cast Iron Car Wheels for All Services
Cast Iron Water, Gas and Culvert Pipe,
Flanged Pipe and Specials
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**A Net Saving of 80%**

The first consideration for using highly Superheated Steam is the return on the investment.

The fact that for their first cost, Fire Tube Superheaters show high net returns is disclosed in the following instance.

The example shown in the figures is that of a cargo steamer of 7,000 tons deadweight, 10 knots at sea, having triple expansion engines of 2,000 I.H.P.

| | |
|---|---|
| Coal per day—Saturated Steam | 34 Tons |
| " " " Superheated Steam | 29 " |
| Saving realized per day by superheated steam | 5 " |

The ship is at sea 200 days per year and the annual saving has been 1,000 tons.

Extra space for cargo, which can be usefully employed, may be taken as equal to one-half the amount of reduced bunkers, or 500 tons.

| | | | |
|---|---|---|---|
| To 15% depreciation on complete cost of converting from Saturated to Superheated steam ($9,000 approx.) | $1,350 | By saving in coal per annum, 1,000 tons at $8.50 | $8,500 |
| Balance net annual saving | 7,150 | | |
| | $8,500 | | $8,500 |

The net annual saving is $7,150, an amount which represents an 80% return on the investment, after deducting an amount for depreciation sufficient to repay the whole cost within 7 years.

It pays to specify fire tube superheaters.

**LOCOMOTIVE SUPERHEATER CO.**

*Designing Engineers and Manufacturers of Elesco Steam Superheaters and Pipe Coils for all purposes.*

**30 Church Street, New York** **People's Gas Building, Chicago**

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Catenary Construction Hardware
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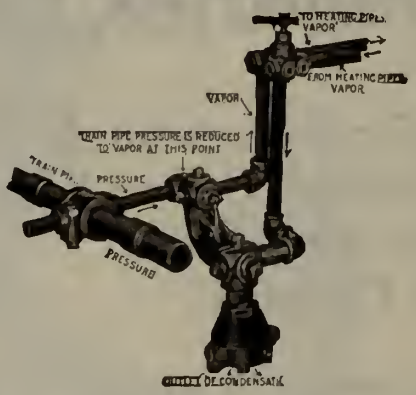
# VAPOR CAR HEATING CO. of Canada, Limited

**MADE IN CANADA AT**




THE VAPOR SYSTEM OF CAR HEATING

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"Vulcan" Pipe Vises and Pipe Wrenches

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"Red Hot" Torches.

Lagonda Arch Tube Cleaner

Lagonda Cleaner Removing Scale from Arch Tubes.

## Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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# THE PYLE-NATIONAL COMPANY

Type "K-2" 500 watt 32 volt Turbo-Generator

*Manufacturers of*

Locomotive Headlights
and
Steam Turbo-Generators
of all descriptions

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The material you wish to handle is best moved with Orange Peel or Clam Shell Buckets.

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will give a better service than is possible with the average bucket. There is a positive "bite" into the material—be it Coal, Sand, Gravel, Crushed Stone or Dirt—and every bucketful will measure up to the rated capacity of the bucket.

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and open the door for greater efficiency, more profits for your road, and greater advancement for yourself.

You cannot hope to keep an efficient and contented crew if you are using the old time "Armstrong" Pump Car. Nor can you hope to keep a crew of good men and expect them to push a motor car seven to fourteen miles per day. That is past forever. The sooner you equip your car with a dependable motor—a four cycle, free running, water cooled, reversible engine—the sooner your labor troubles will be at an end.

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# Vertical and Horizontal Steam and Power

Our lines are the result of years of careful perfecting of design, and we are using only the best labor and material available.

**Every Pump Carefully Tested Before Being Shipped.**

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The World's Greatest Labor Saving Tools

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In a test conducted in one large Railway Shop a No. 2 THOR Drill bored a ⅞" hole through 6" of hammered steel in 4 min., 20 sec., while 5 min., 45 sec., and 6 min., 59 sec., were required by larger drills of other makes to bore the same size hole.

Think of the many holes bored on your road, and then act to secure the time and money saving effected by the use of THOR Tools.

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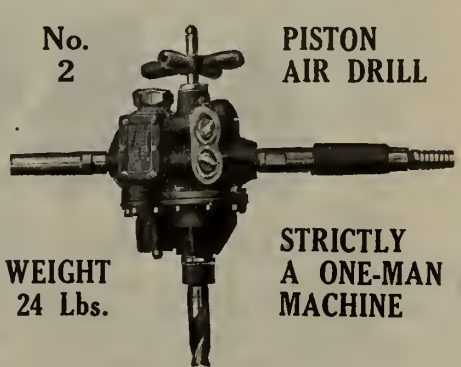
No. 2 PISTON AIR DRILL



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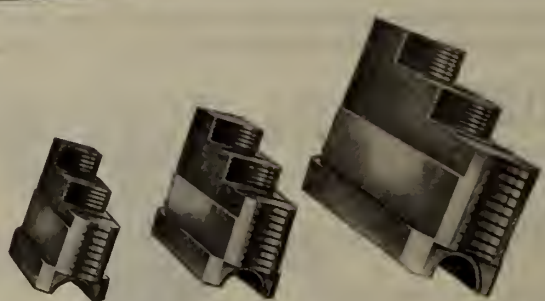

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*Engineers • Manufacturers*
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In service on all the leading Canadian Railway Systems.

Moderate in first cost—Minimum maintenance outlay—Water clarified by precipitation—Sediment removed without interruption of service—Successful operation in coldest latitudes.

Built in any capacity and elevation.

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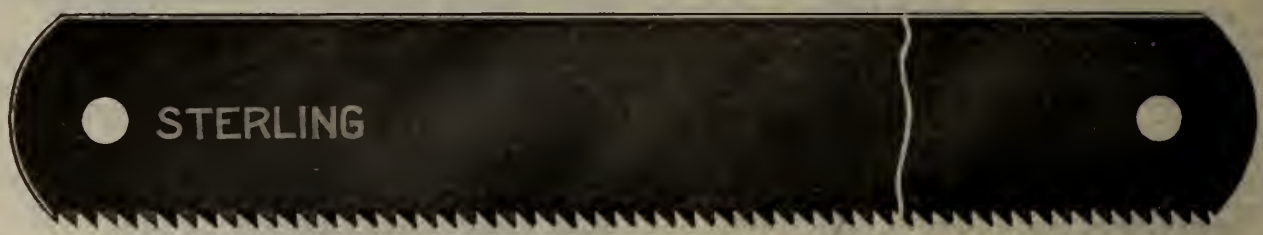


They are a "STERLING" product of good standard. They are made by people who know how, and are really the last word in a hack Saw Blade. This blade is made from the best material produced by any mill,—added to this, correct mechanical construction and proper heat treatment produce a blade that is as good as is possible to turn out.

*Manufactured by*

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**Buffalo, N.Y., U.S.A.**

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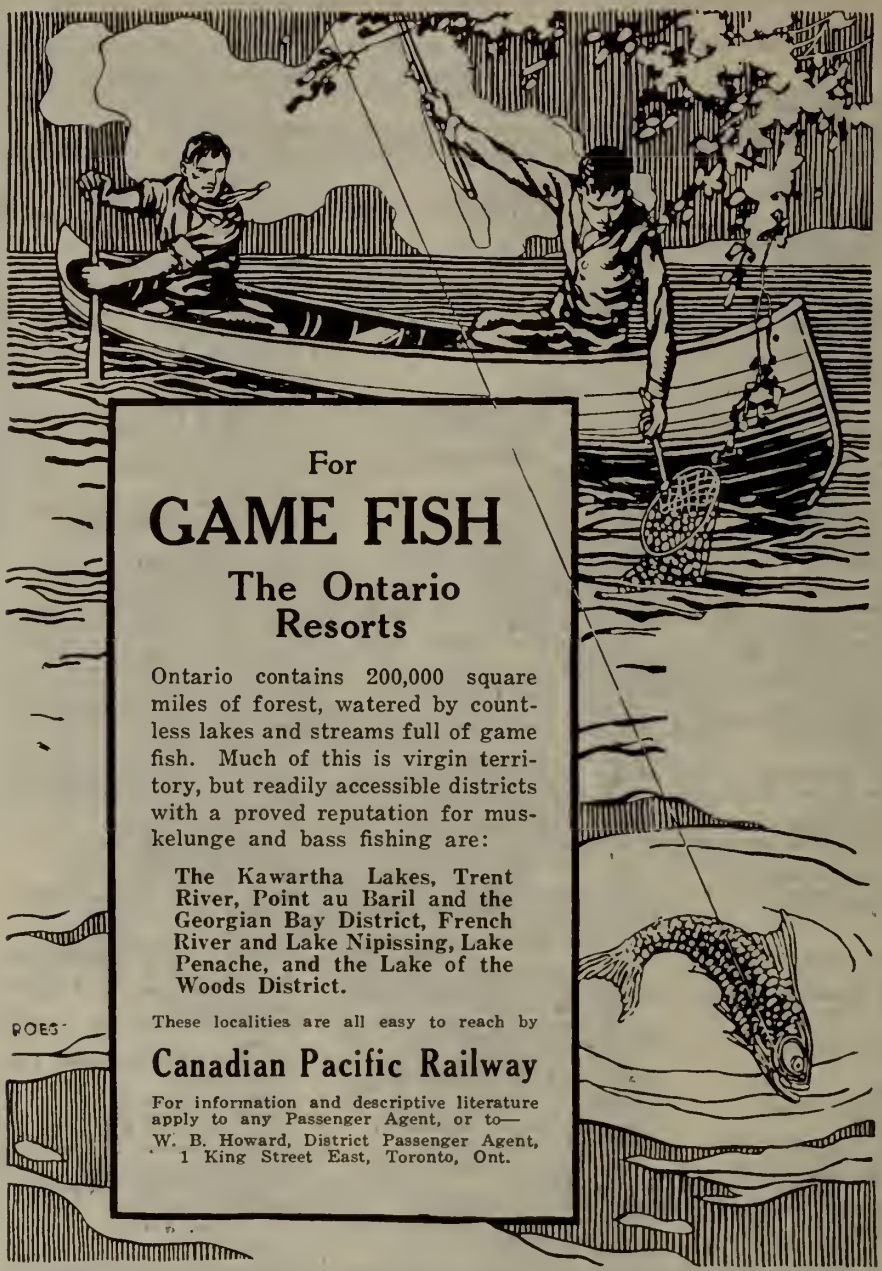

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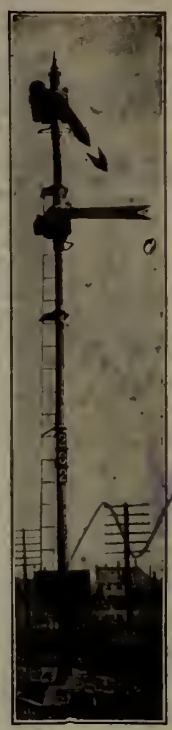

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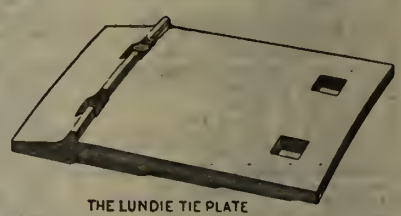

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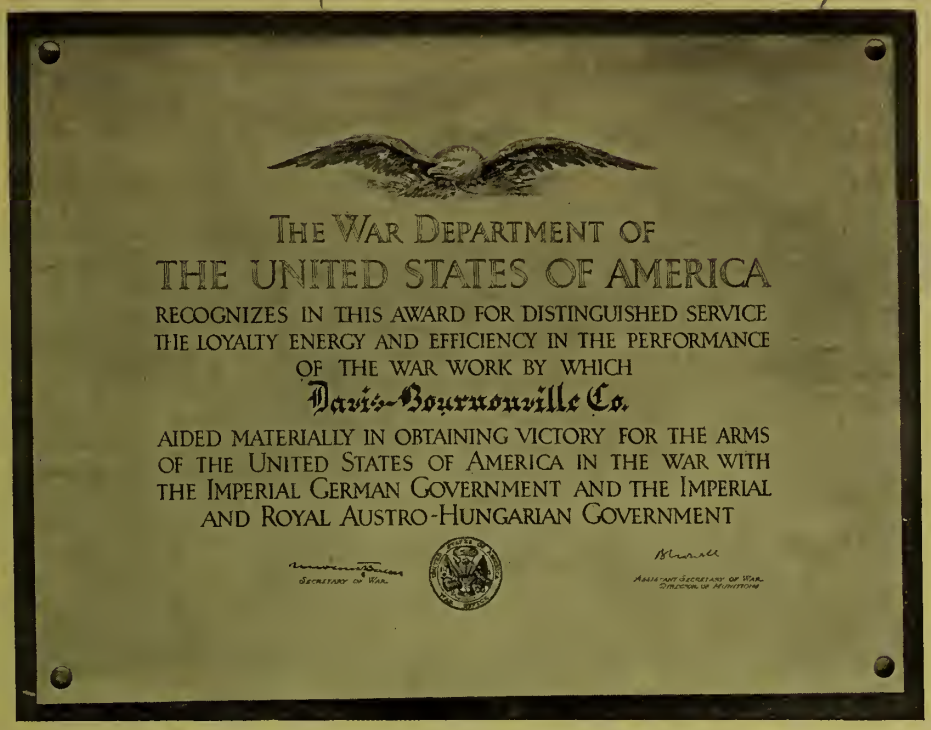
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OF THE WAR WORK BY WHICH
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OF THE UNITED STATES OF AMERICA IN THE WAR WITH
THE IMPERIAL GERMAN GOVERNMENT AND THE IMPERIAL
AND ROYAL AUSTRO-HUNGARIAN GOVERNMENT

Citation by U.S. War Department, January 31, 1920.

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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 271
Index to contents, pg. 491

TORONTO, CANADA, SEPTEMBER, 1920

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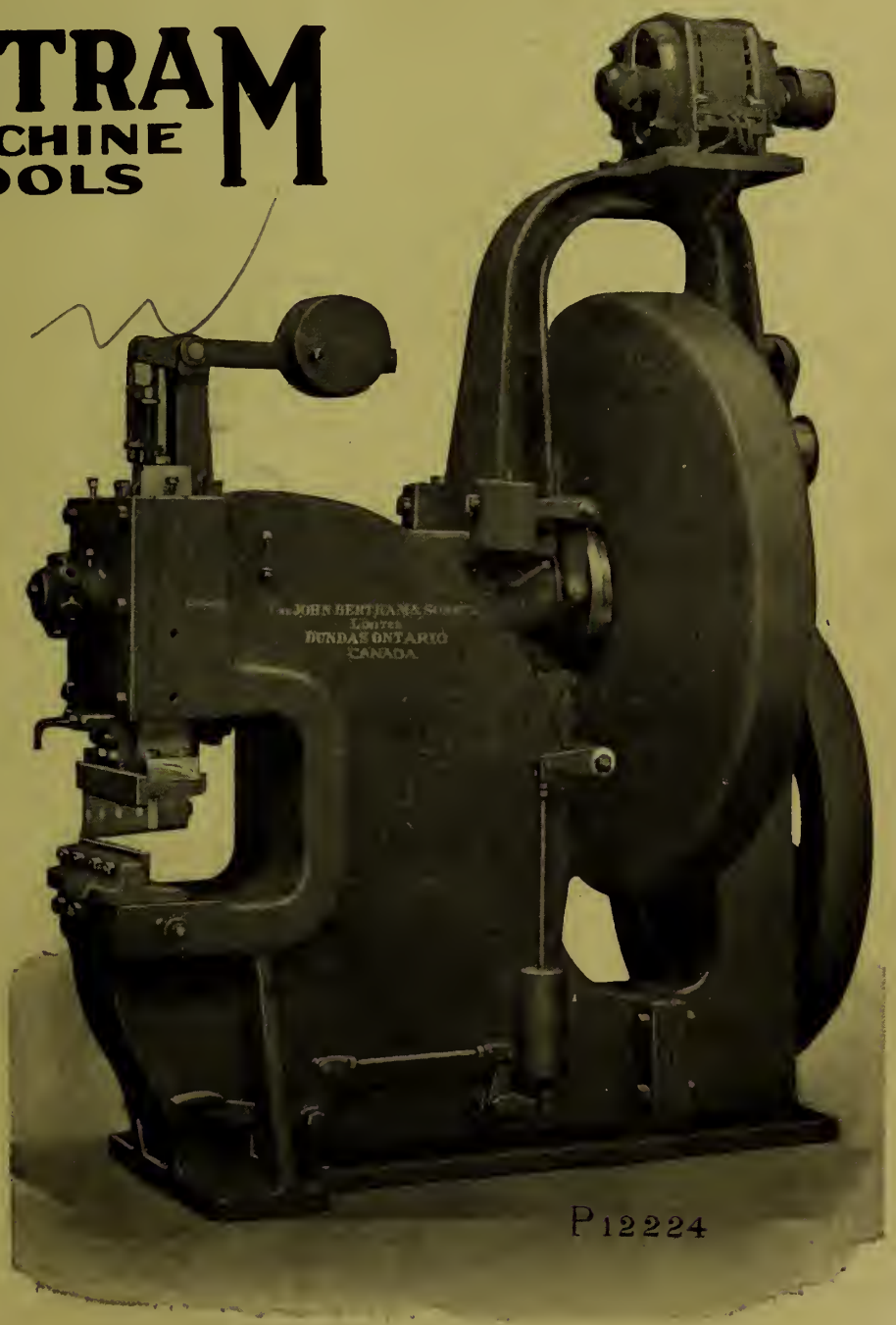


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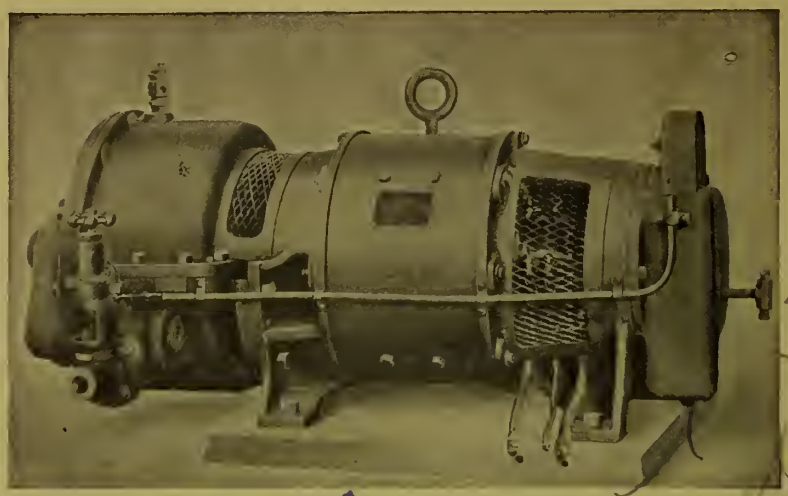

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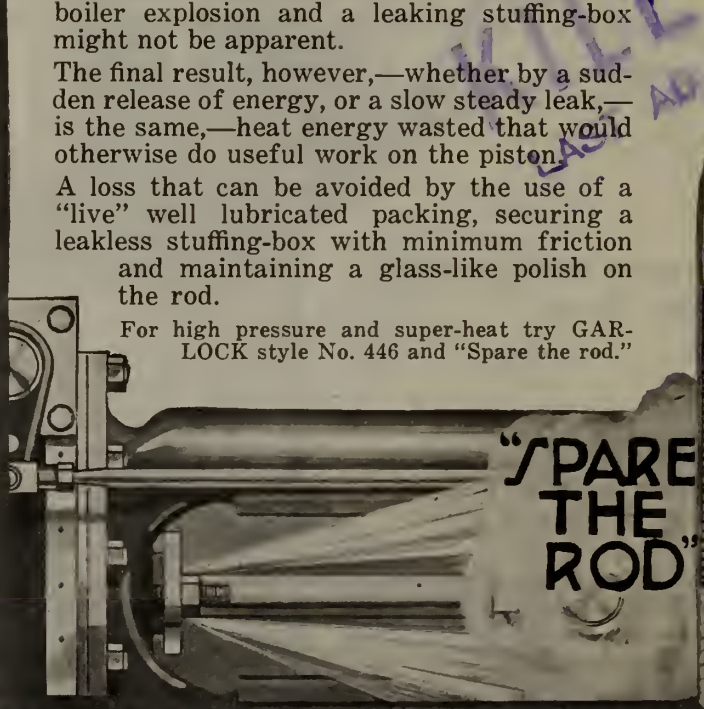

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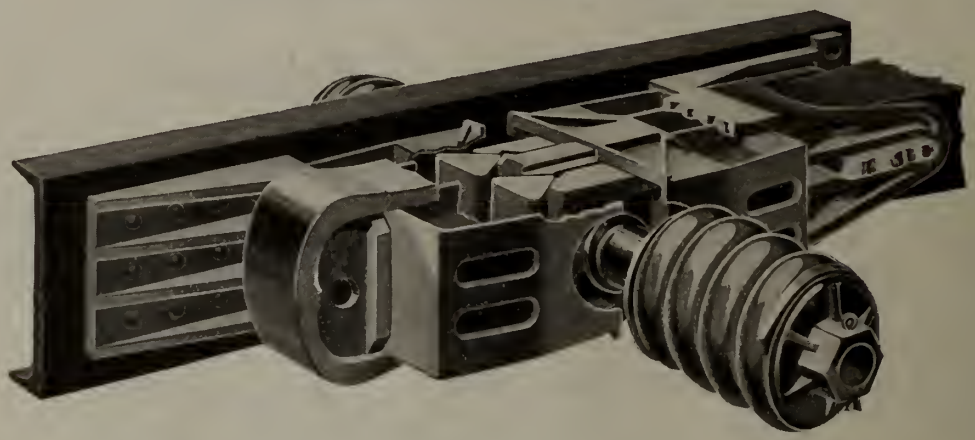

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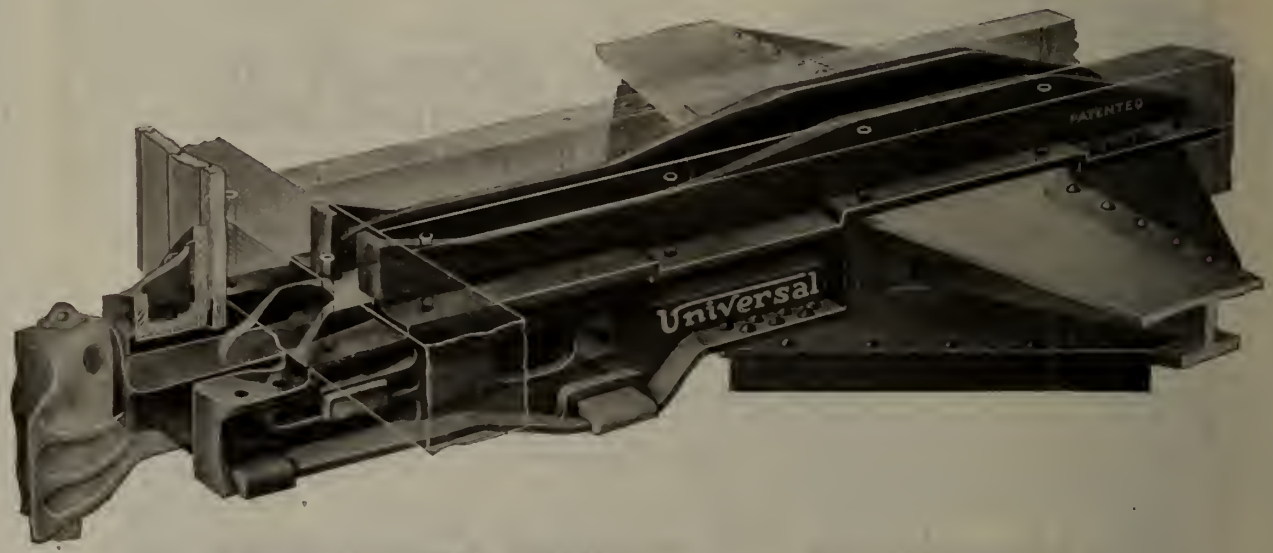


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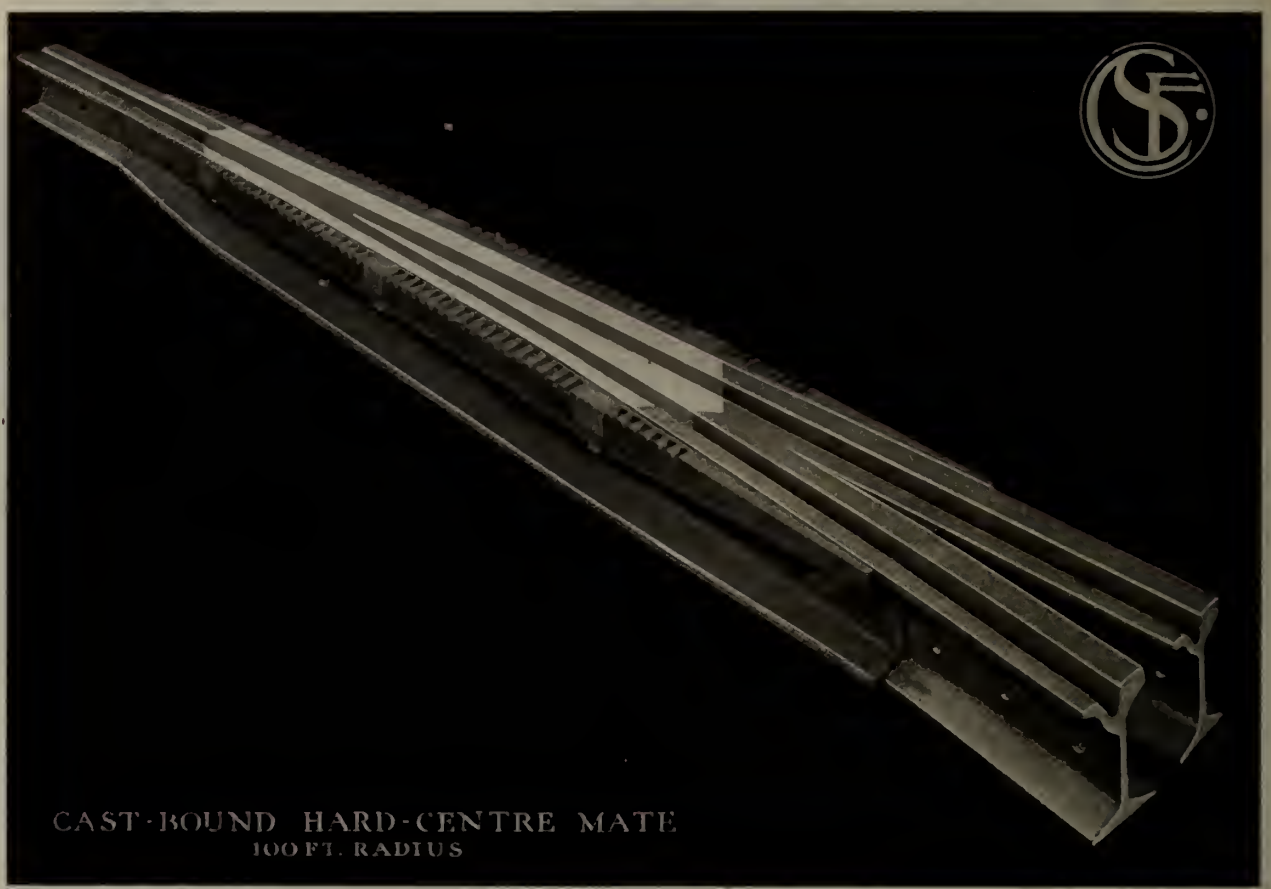
**Limited**
**TORONTO - MONTREAL**

# TRACKWORK

FOR STEAM AND ELECTRIC · RAILWAYS




## COMPLETE INTERSECTIONS

of any size or rail section

FROGS, SWITCHES, MATES, CROSSES, DIAMOND CROSSINGS, ETC.

## MANGANESE-STEEL SPECIAL WORK

*Manufacturers of Balkwill Articulated Manganese-Steel Crossings*

## CANADIAN STEEL FOUNDRIES LIMITED

*General Offices:*

TRANSPORTATION BUILDING - MONTREAL

# 66 Vessels

# Canada's Commerce Carriers

# Total Tonnage 393,000

## Canadian Government Merchant Marine, Limited

Now Afloat.

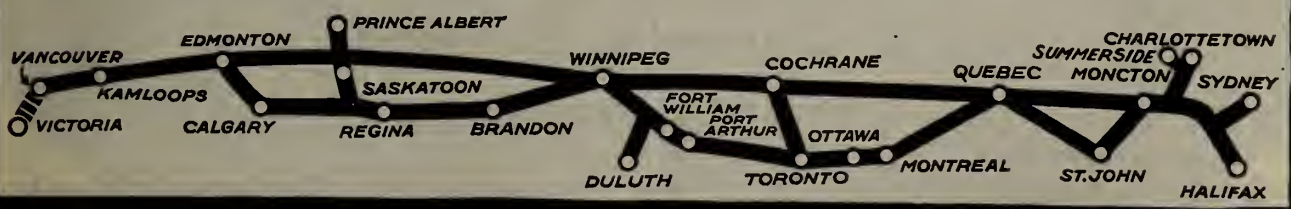
| | | |
|---|---|---|
| "CANADIAN PLANTER" | "CANADIAN PROSPECTOR" | "CANADIAN FARMER" |
| "CANADIAN INVENTOR" | "CANADIAN BEAVER" | "CANADIAN SEALER" |
| "CANADIAN VOYAGEUR" | "CANADIAN TROOPER" | "CANADIAN MINER" |
| "CANADIAN PIONEER" | "CANADIAN SAILOR" | "CANADIAN SEIGNEUR" |
| "CANADIAN WARRIOR" | "CANADIAN SPINNER" | "CANADIAN RAIDER" |
| "CANADIAN SETTLER" | "CANADIAN GUNNER" | "CANADIAN RANCHER" |
| "CANADIAN RANGER" | "CANADIAN TRADER" | "CANADIAN NAVIGATOR" |
| "CANADIAN VOLUNTEER" | "CANADIAN SIGNALLER" | "CANADIAN TRAPPER" |
| "CANADIAN IMPORTER" | "CANADIAN MILLER" | "CANADIAN AVIATOR" |
| "CANADIAN EXPORTER" | "CANADIAN ADVENTURER" | "CANADIAN SOWER" |
| "CANADIAN HUNTER" | "CANADIAN OBSERVER" | "CANADIAN VICTOR" |

Weekly Freight Service to United Kingdom from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Fortnightly Freight Service to West Indies and Cuba from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter.
Monthly Freight Service to South America from Montreal in Summer; Halifax, N.S., and St. John, N.B., in Winter. Monthly Freight Service to Australia and New Zealand from Vancouver.

For further information apply to any Canadian Railway Agent or

D. O. WOOD, Traffic Manager, Exp. & Imp. Dept., Canadian National Rys., Toronto, Ont.

W. A. CUNNINGHAM, Exp. & Imp. Freight Agt., 230 St. James Street, Montreal, Que.



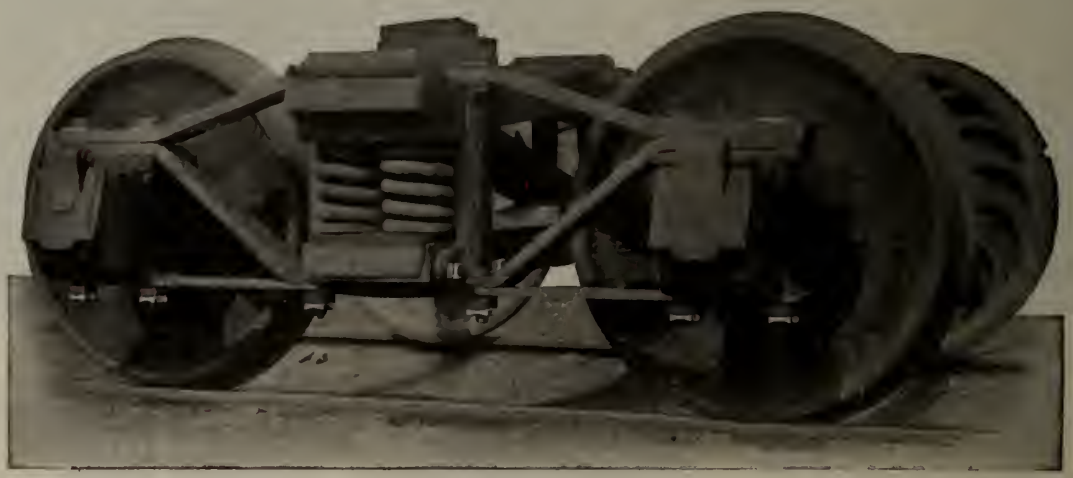

## Canadian National Railways

# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***



Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

## Boss Lock Nut Company
### of Canada, Limited

*Write for latest catalogue.*

HEAD OFFICE:
**263 St. James St.**
**MONTREAL, Que.**

**McIntyre Block**
**Winnipeg, Man.**

Quality

# CONFIDENCE

THE GREATNESS OF BRITAIN IS FOUNDED ON HER INTEGRITY.

HER STRENGTH SHE DERIVES FROM WORLD COMMERCE—HER ENDURANCE FROM CONFIDENCE.

THE WAR TEMPORARILY RETARDED HER CONSTRUCTIVE EFFORTS, BUT THE POWER OF THE CONFIDENCE OF THE PEOPLES OF THE WORLD WILL RESTORE TO HER IN MORE BRILLIANT FORM THE LEADERSHIP SHE HAS JUSTLY EARNED AND PROUDLY HELD.

CONFIDENCE IS THE FOUNDATION OF OUR POSITION IN THE WORLD OF IRON AND STEEL—OUR PROGRESS DEPENDS ON IT.

WE HAVE BEEN SUCCESSFUL IN THE PAST—THE FUTURE IS BEFORE US. TO ADVANCE, WE MUST CONTINUE TO MERIT THE CONFIDENCE OF THE BUYERS OF STEEL AND IRON PRODUCTS OF EVERY DESCRIPTION IN CANADA, AND WE ARE DETERMINED TO ADVANCE.

THE
STEEL COMPANY
OF
CANADA
LIMITED
HAMILTON MONTREAL

Service

KILL
LAST AD.

# HIPOWER NUT LOCKS

## Carry 'em Through

## THE NATIONAL LOCK WASHER CO.

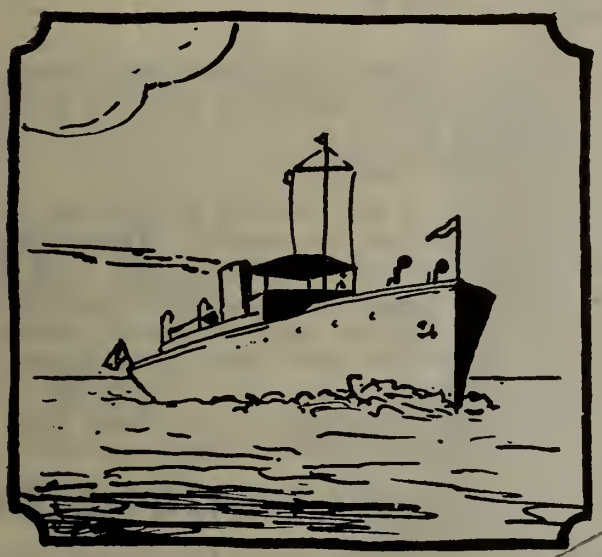
Established 1886

**Newark, N. J.**

**New York** **Chicago** **Detroit**

# INCo Monel metal

## saves polishing time and trouble



*because* it is a nickel copper alloy and cannot corrode.

*because* it is unaffected by salt water and salt air.

*because* handling does not discolor it or affect its lustre.

*because* it takes and retains forever a perfect nickel finish.

MONEL METAL has been found to be the most satisfactory metal for valve parts, turbine blades and all places where high heats or superheated steam are encountered. Not only is it used in these ways, but is generally specified for trimmings because of its permanent polish.

In the galley it is extensively used for urns, table-tops, etc., because it cannot rust and will not stain.

The name *Monel* is given to a line of metal products produced by The International Nickel Company from a natural nickel alloy—67% nickel, 28% copper, and 5% other metals. These products include Monel blocks, Monel rods, Monel castings, Monel sheet, Monel wire, Monel strip stock, etc.

Our Technical Department will gladly furnish you with any information on Monel Metal.

The International Nickel Company of Canada, Limited

HARBOR COMMISSION BUILDING

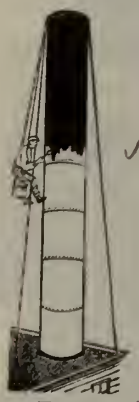
TORONTO, ONT.

INCo MONEL METAL TRADE MARK

INCo NICKEL TRADE MARK

# Barrett Roofings, Cements Industrial Paints etc.

Back of these products stands the reputation of Canada's oldest and largest manufacturer of Roofings and Industrial Paints. You will find them in every case exactly as represented.



## Everjet Industrial Paints

High-grade black carbon paints, developed by our chemists to meet the requirements of the special purposes for which they are intended. We manufacture no products which we can more thoroughly recommend.

Probably no other paints on the Canadian market enjoy such great popularity and fill so many demands in the industrial world as these "Proven Protective Paints." They are used extensively by railroads and large manufacturing companies throughout the Dominion.

| | | |
|---|---|---|
| Everjet Boiler Paint | Everjet Dip Paint | Everjet Smoke Stack Paint |
| Everjet Bridge Paint | Everjet Penstock Paint | Everjet Machinery Paint |

These paints are all exceptionally durable and absolutely waterproof and effectively resist the corrosive action of acids, alkalies, and fumes of all kinds.

Put up in 1, 5 and 10 gallon cans, half barrels and barrels. Our Service Department, composed of experienced chemists, will be glad to help you solve your paint-problem.

## Nox-Aer-Leek Boiler Setting Cement

A tough, elastic, adhesive cement for stopping air leaks in brick boiler-settings. Pays for itself many times in reduced fuel bills and increased boiler efficiency.

Nox-Aer-Leek is composed of elastic bitumen, fused with non-drying oils and asbestos fiber. Low in cost, durable, and wonderfully effective.

Used on exterior walls only; on old or new boiler-settings.

Shipped in barrels (about 550 pounds) and half barrels (about 300 pounds).

## Everlastic "Rubber" Roofing

The biggest value in roll-roofing on the Canadian market. Made of the best grade water-proofing materials, low in cost, easy to lay, staunch and durable.

More than a million rolls of Everlastic "Rubber" Roofing were sold last year throughout the world.

Made in three weights (1-ply, 2-ply and 3-ply.) Rolls contain 108 Sq. Ft. Nails and cement with each roll.

## Everlastic Liquid Roofing Cement

Unequalled for re-surfacing worn-out felt and "Rubber" roofs. Has the consistency of thick molasses; is easy to apply and dries quickly into a hard, elastic, wonderfully durable coat. Proof against moisture, acids, alkalies and fumes. Has same base as Barrett Specification Pitch, which is famous for its waterproofing qualities.

Comes ready for use in packages ranging from 1 pint tins to 40 gallon Barrels.

## Elastigum Plastic Patching Cement

For patching holes and leaks in all kinds of roofs, repairing flashings, relining gutters, etc. Known as the "Plastic Cement of a thousand uses."

Elastigum is tough, elastic, plastic, water-proof, acid-proof and alkali-proof. Requires no heating or mixing. Very inexpensive.

Put up in 1, 5, 25 and 100 lb. packages; ½ Barrels and Barrels.

*Descriptive booklets regarding any of these products sent free on request. Address nearest office.*

ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S.

The Barrett Company LIMITED.

MONTREAL TORONTO WINNIPEG VANCOUVER

# EVAPORATORS

## The New Weir Evaporator

WEIR PATENT
CONTINUOUS BRINING &
AUTOMATIC FEEDING.

## Embodies Three Important Improvements

1. The Patent Brine Ejector.
2. The Automatic Feed Regulator.
3. The Special Tube Coupling.

These devices ensure uniform efficiency, simplify working, and lessen costs of upkeep.

They are fully described and illustrated in our New Evaporator Booklet—Send for it.

## G. & J. Weir, Limited, Scotland

MADE IN CANADA

Contractors to the British Admiralty and War Office and to the Governments of Australia, Canada, Egypt, India, New Zealand, South Africa, Argentine, Belgium, Brazil, Chili, Denmark, France, Greece, Holland, Italy, Japan, Norway, Portugal, Russia, Siam, Spain, Sweden, United States, Etc., Etc., also to the leading Steamship Lines and principal municipalities throughout the world.

MADE IN CANADA

Sole Agents

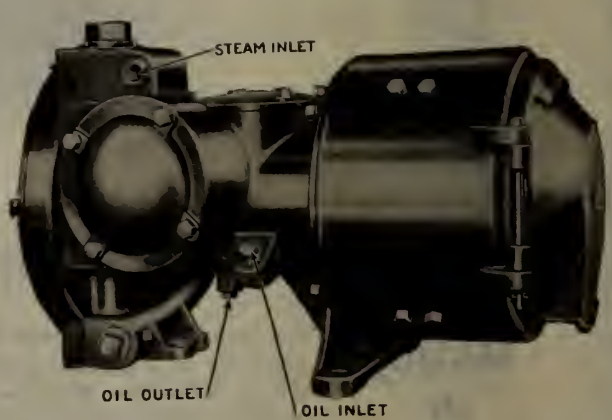
## PEACOCK BROTHERS, LIMITED
MONTREAL

# KEYSTONE LOCOMOTIVE HEADLIGHT EQUIPMENT

*Write for Bulletin No. 166*

## Keystone Material for Steam Railroads

*Wire*
*Keystone Lamp Guards*
*Crane Contact Rail Material*
*Keystone Universal Collectors*
*"Protected" Rail Bonds*
*Overhead Line Material*
*Keystone Turbo-Generators*
*Golden Glow Locomotive Headlights*
*Demountable Mirror Units*
*Focusing Device Adopters*
*Keystone Gauge Lights*
*Keystone Tender Rearlights*
*Keystone Classification Lights*
*Keystone Marker Lights*
*Golden Glow Roundhouse Fixtures*
*Keystone Headlight Switches*
*Junction Boxes*
*Terminal Blocks*
*Connectors*
*Mazda Lamps*
*Miscellaneous Supplies*

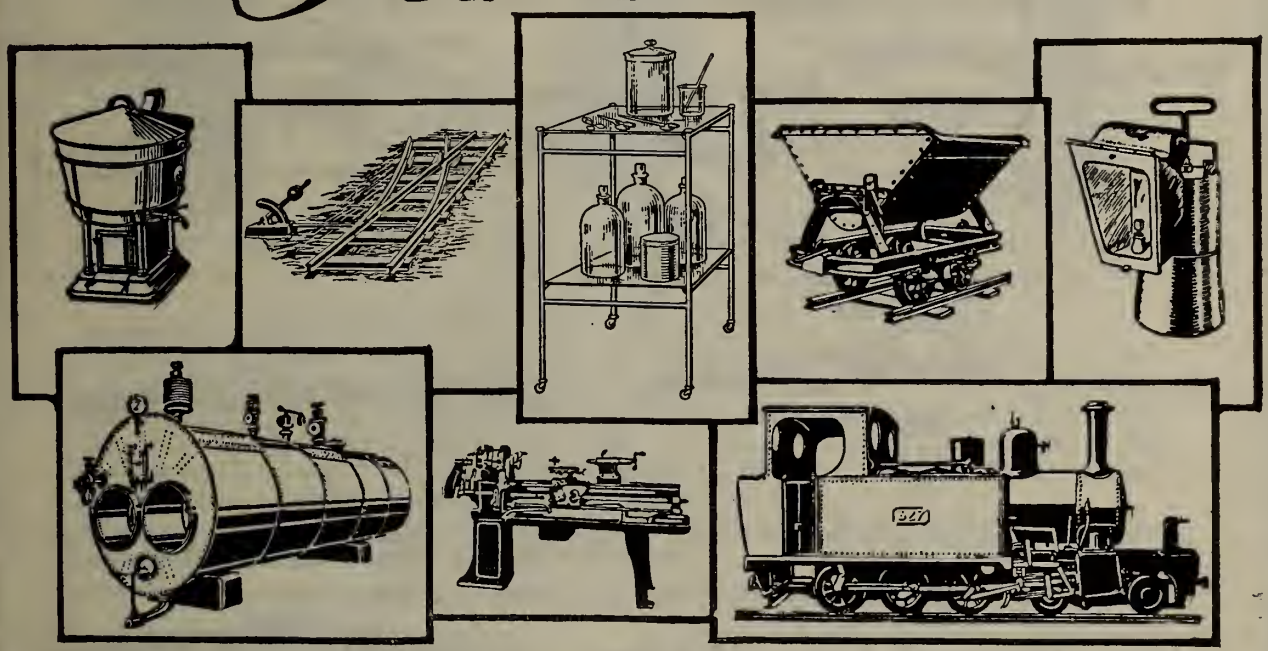



**Electric Service Supplies Co.**
*MANUFACTURERS*
PHILADELPHIA 17th and Cambria Sts.
NEW YORK 50 Church St.
CHICAGO Monadnock Bldg.

**Lyman Tube & Supply Co., Ltd.**
*CANADIAN DISTRIBUTORS*
MONTREAL Lyman Tube Bldg.
WINNIPEG 703 Confederation Life Bldg.
TORONTO 33 Melinda Street

GR MINISTRY of MUNITIONS

# GOVERNMENT PROPERTY For SALE



The Disposal Board
have

## STOCKS

lying in the United Kingdom and Available for Export
of

## ENGINEERING STORES

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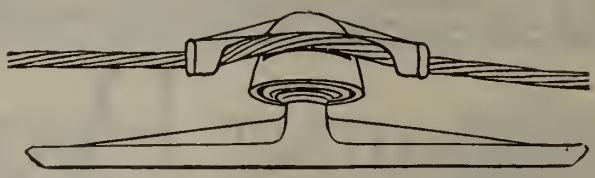
| Ferrous and Non-Ferrous Metals | Contractors' Stores | Agricultural Machinery |
| Plant and Machinery | Electrical Instruments and | Aircraft |
| Steam Engines and Boilers | Machinery | Furniture |
| Factory Stores | Medical Stores | Textiles and Clothing |
| Machine Tools | Chemicals and Explosives | Boots and Leather Equipment |
| Railway Material | Motor Vehicles | Motor Boats, etc., etc. |

Buyers should instruct their representatives in the United Kingdom to communicate with D. B. 8 Canadian Export Department, Ministry of Munitions, Whitehall Place, S.W.

Cable address: "DISPEXPORT, MUNORGIZE, LONDON."

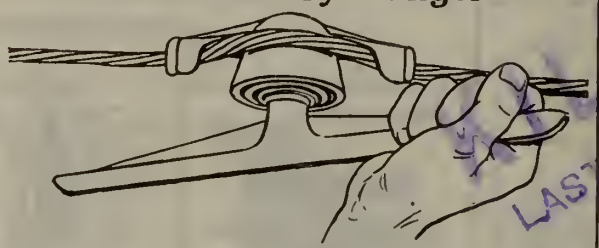
# O-B PRODUCTS

*Quality First*



**Usually the car is out of line with the trolley wire when it first makes contact with the hanger**

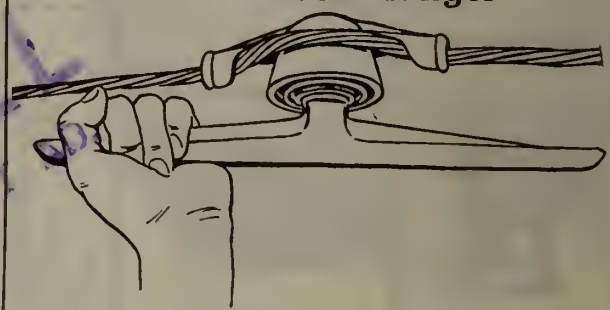
## With Ordinary Hanger—



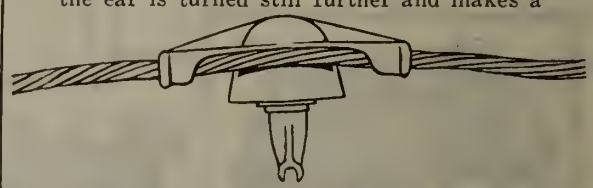
the ear must be backed off—

which leaves a loose joint between ear and hanger.

## With O-B Lock Hanger—



the ear is turned still further and makes a



tight, solid joint between lock hanger and ear when the latter comes in line with the wire.

## That Internal Lock Washer Improves your Line

Tight, weatherproof joint between every ear and every O-B Lock Hanger cuts your maintenance cost. With the ordinary hanger either much time is wasted shimming up the joint or the lineman lets it go as a sloppy job.

This never occurs with O-B Lock Hanger. In addition they have all the essential mechanical and electrical characteristics.

A size and type for every service shown in O-B Catalog No. 17.

## The Ohio Brass Company

**Mansfield, Ohio**

# Davis Expansion Car Wheel Boring Tools

SPECIAL "TWO-IN-ONE"

REGULAR "TWO-IN-ONE"

"STANDARD"

## *Bore 98% of all Car Wheels*

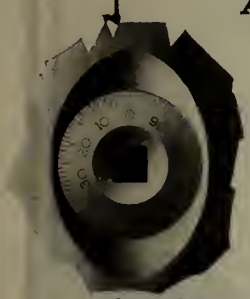
Fully 95% of all car wheels are bored with Davis Expansion Car Wheel Boring Tools —a positive guarantee of their efficiency and economy.

Wheel boring mills, equipped with improved Davis Expansion Boring Tools, will bore more wheels per day—absolutely accurate, and at a 25% saving in costs. Any standard or odd size can be accurately maintained by means of a micrometer adjustment, which expands the cutters to compensate for wear.

Equip all your wheel boring mills with Davis Expansion Car Wheel Boring Tools for increased boring production and decreased cost.

**Save 25% to 50% in Wheel Boring Costs**

### MICROMETER ADJUSTMENT



This graduated micrometer screw controls the travel of a patented, double expanding wedge, which forces the cutters out, uniformly, as the screw is turned.

Cutters are expanded to size within .001 of an inch — in less than one minute.

### EXPANDING CUTTERS

Cutters are expanded, uniformly, by the special wedge which has perfect bearing against angle on cutters, as shown by arrows in illustration.

The cost of replacing worn-out cutters is very nominal and liberal expansion insures maximum service per pair.

*SEND FOR LITERATURE AND FULL INFORMATION*

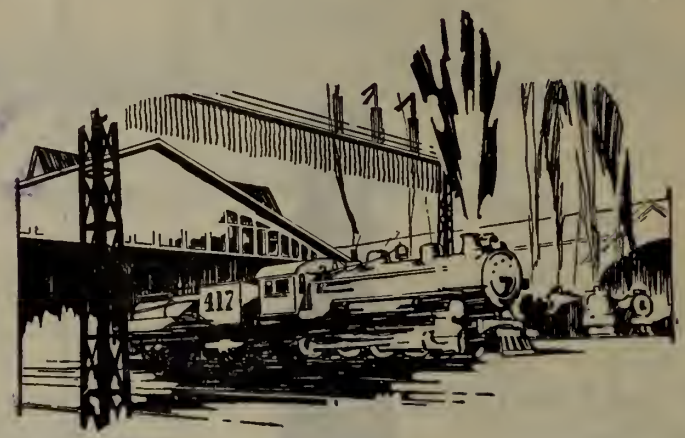
**DAVIS BORING TOOL COMPANY**

INCORPORATED

**3700-24 Forest Park Blvd.** **St. Louis, Mo., U.S.A.**

*Canadian Agents:*

WILLIAMS & WILSON, MONTREAL, QUEBEC. J. BERTRAM & SONS, DUNDAS, ONTARIO.



WHEN building operations, now under way, are completed the Dominion Oxygen Company, Ltd., will offer Canadians atmospheric oxygen of the highest purity.

Not only will the highest standard of quality be rigidly maintained in the production of Dominion Oxygen, but every possible measure will be taken to insure a prompt and never-failing supply of pure gas to Canadian users.

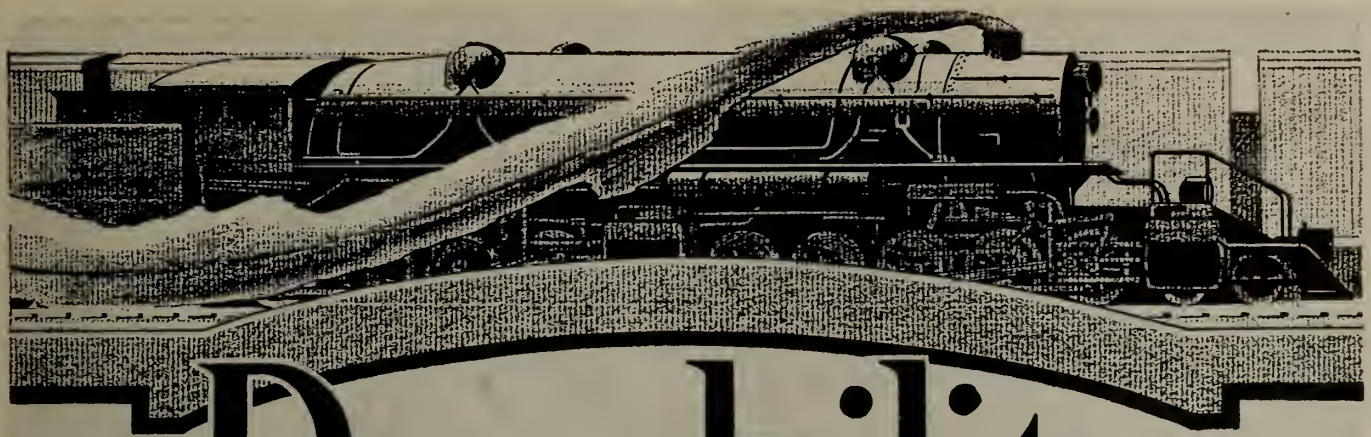
Dominion Oxygen cylinders are of the most modern type, designed to hold the maximum amount of gas with the minimum weight—thus insuring the lowest possible freight and handling charges.

The Company will supply its customers with such cylinders in any necessary quantities—great or small on a liberal loan basis.

The Dominion Oxygen Company, Ltd., invites inquiries from users of oxygen throughout Canada.

DOMINION OXYGEN COMPANY, LTD.
Hillcrest Park
Toronto - Ontario

D-5



# Durability

The HUNTOON ECONOMY BRAKE BEAM means a more durable brake beam. The strut is so constructed that it can be changed from right to left or **vice versa** without taking the beam apart. The strut can be brought to the "right" position by a bar inserted in the lever slot. Lugs located in the correct position hold the strut in correct alignment.

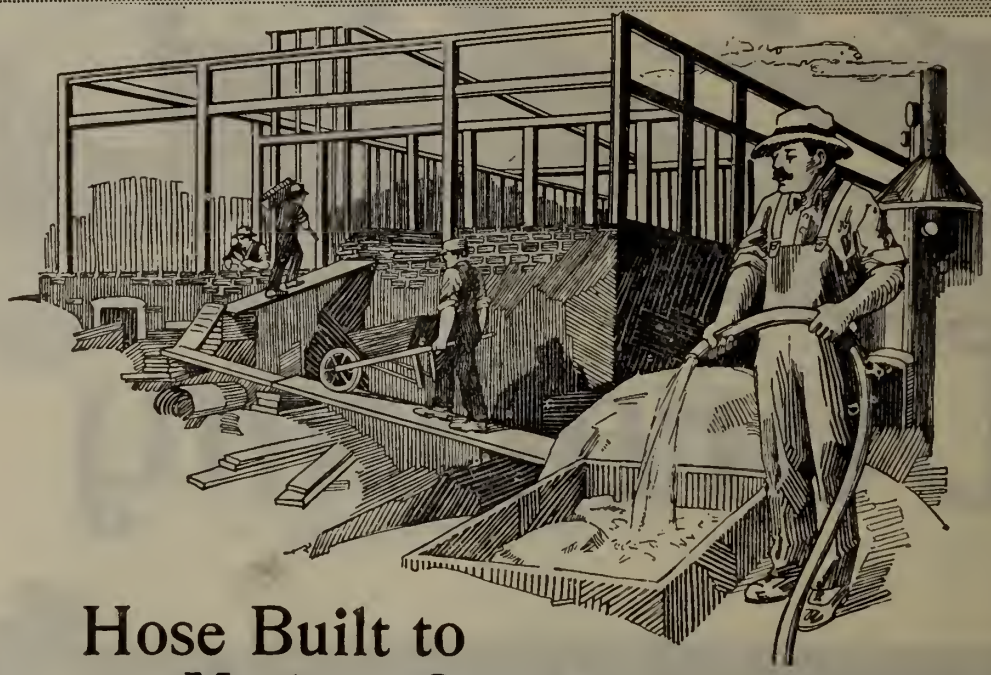
The design of the HUNTOON ECONOMY BRAKE BEAM, method of construction and the distinct innovations afford a brake beam possessing durability and insuring the utmost satisfaction.

**Canadian Representatives: MOORE, CAMERON & HILL, Ltd.**
**284 Beaver Hall Hill, Montreal 431 McIntyre Block, Winnipeg**

## Joliet Railway Supply Co

NORTHWESTERN MALLEABLE IRON CO. PROP.

Railway Exchange Bldg. CHICAGO



# Hose Built to *Modern* Specifications

MOST equipment of fifty years ago has little place in modern industrial plants. Improved methods are constantly needed to keep pace with modern standards of production and efficiency.

Yet until Goodyear entered the hose field, rubber hose was built in much the same old-fashioned manner as it had always been.

But Goodyear went into the foundry, the mine, the paper mill, the railway, the steel plant—studied the *actual* conditions industrial hose must meet in use.

Then new standards were set. A *better* hose was developed to meet the demands of modern industry.

The cover on ordinary water hose was found inadequate to protect it against the sharp objects over which it is constantly dragged. In a great many cases this cover was cut through and the hose destroyed long before it had given the service it should.

To prevent this, Goodyear Water Hose is fitted with a thicker-than-usual cover of exceptionally tough rubber. A cover that prevents wear and gives longer life to the hose.

Added to the good inner tube and strong fabric, it explains why Goodyear Water Hose has set a new standard for economy and freedom from hose troubles.

The efficient construction and unusual economy of Goodyear Water Hose is characteristic of all Goodyear Industrial Hose.

A man trained by Goodyear in hose problems will call upon you without obligation. Phone, wire, or write the nearest branch.

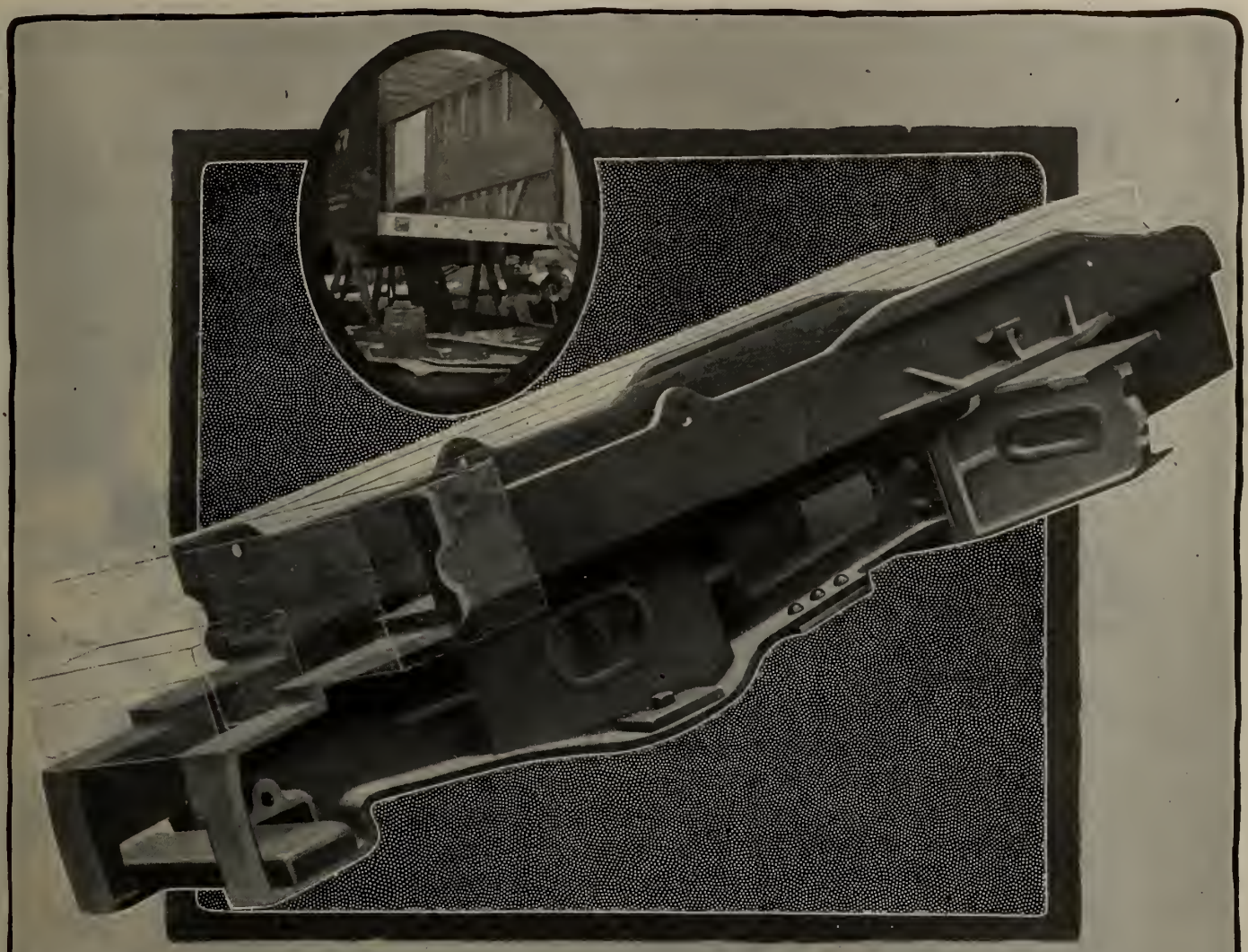
**The Goodyear Tire & Rubber Co. of Canada, Limited**

*BRANCHES—Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver.*

**GOODYEAR**

MADE IN CANADA

**INDUSTRIAL HOSE**



# ECONOMY CAST STEEL DRAFT ARMS

CARS of light design will not stand up when placed in a long train between heavy cars unless they are strengthened along the line of draft.

Economy cast steel draft arms provide the necessary strength. They have no bolts or rivets to shear. They butt against the bolster and extend beyond it, thus distributing buffing shocks evenly throughout the underframe.

Economy Arms are in use on one hundred of the leading railways.

**American Steel Foundries**

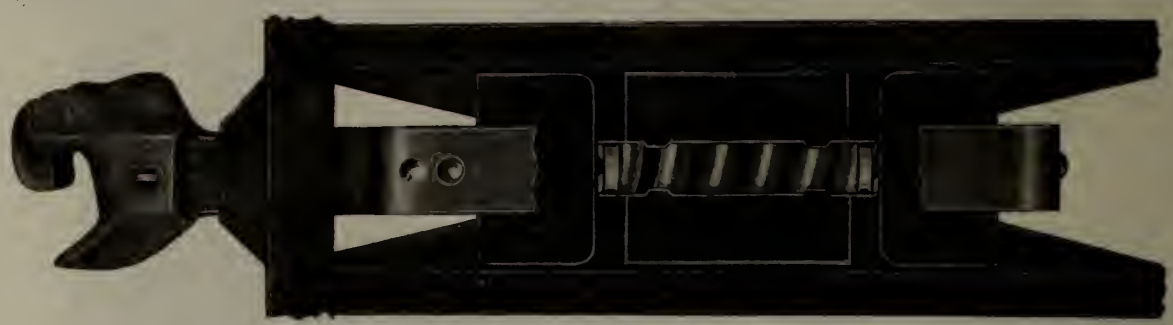
NEW YORK CHICAGO ST. LOUIS

**International Equipment Co., Ltd.**

MONTREAL QUEBEC CANADA

# Murray Cast Steel Friction Draft Gear

**MADE IN CANADA**



If the superiority of this device has never been apparent to you, it will be upon thorough investigation. For it will reveal that our claims for excellence are based on actual facts.

May be used with any draft attachment.

In use on thousands of cars, including U.S. R.A. standard cars.

KEYOKE RAILWAY EQUIPMENT CO.

**Chicago, Ill.**

*Canadian Agents:*

**INTERNATIONAL EQUIPMENT COMPANY, LIMITED**

**Transportation Building, Montreal, Quebec**

# 15 Sales Offices Backed by the 100% Standard of Quality

KILL LAST AD.

THE Canadian Fairbanks-Morse Company Limited reaches out to you through its sales houses and offers the service and satisfaction that is assured by its 100% standard of quality and service.

To be able to turn to an institution that dominates its field in the industrial world is to safeguard the character of the merchandise you buy. To deal with an organizationthat is doing business at your very door puts upon the man you know that "responsibility which is the conscience of business."

Every one of these 15 offices has been established to bring to you the full advantages and benefit that have made The Canadian Fairbanks-Morse Co. Limited a national institution. Here in these offices is offered everything mechanical that your business requires — they centralize your purchasing—group your orders—bulk your shipments and send but one invoice. And when you buy from The Canadian Fairbanks-Morse Co. Limited you are guaranteed the 100% standard of quality and service in product and organization.

Make our nearest office your buying centre—our catalogue is your buying guide —our 100% quality seal your guarantee.

## The Canadian Fairbanks-Morse Co., Limited

*Canada's Departmental House for Mechanical Goods*

Halifax St. John Quebec Montreal
Ottawa Toronto Hamilton
St. Catharines Windsor Winnipeg
Regina Saskatoon Calgary
Vancouver Victoria

# This Real Belt Will Help You in a Real Way

## *"Gibraltar Red Special"*
## *Frictioned-Surface*

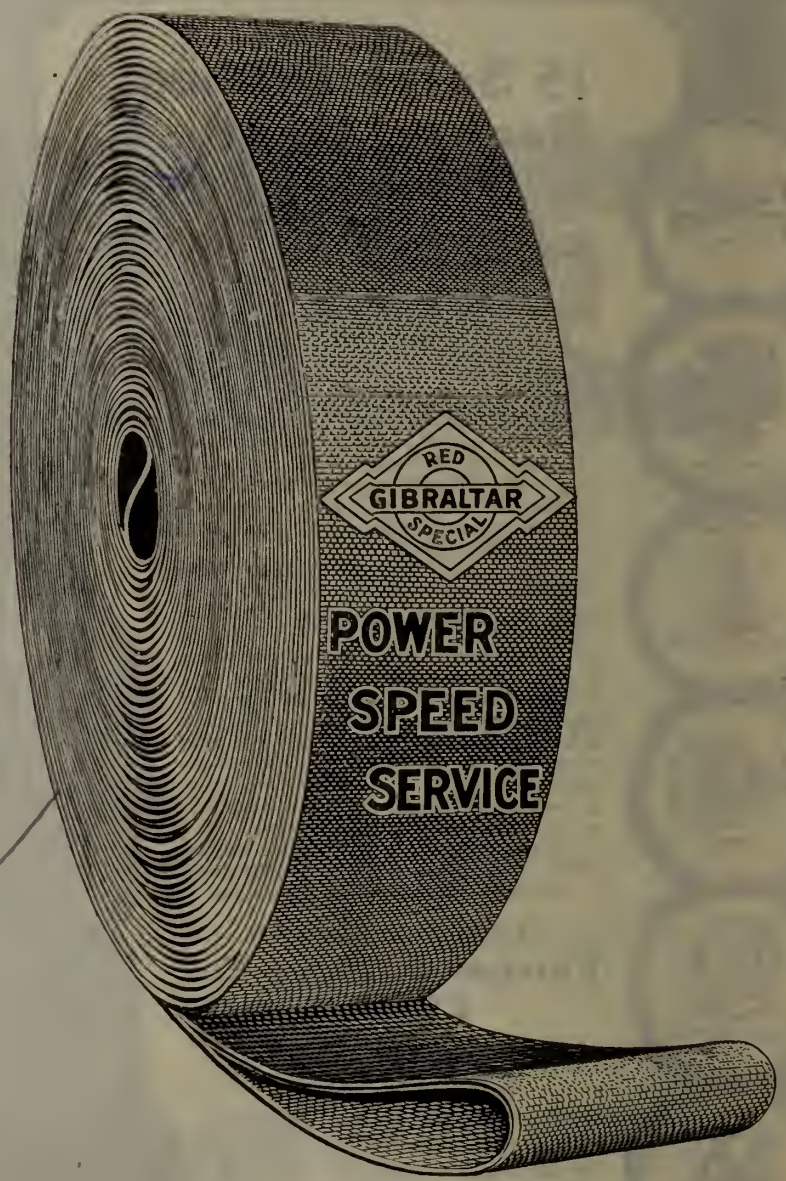
It will cut down your operating expenses — eliminate time-wasting, costly delays.

It will add considerably to the daily volume of work by keeping the machinery on the hum, without slipping, which causes a noticeable reduction in the output, because of the constant slowing up and "jerky" action.

This belt saves power and conserves fuel.

Doesn't even need an occasional adjustment to take up stretch.

Is practically immune to atmospheric changes.



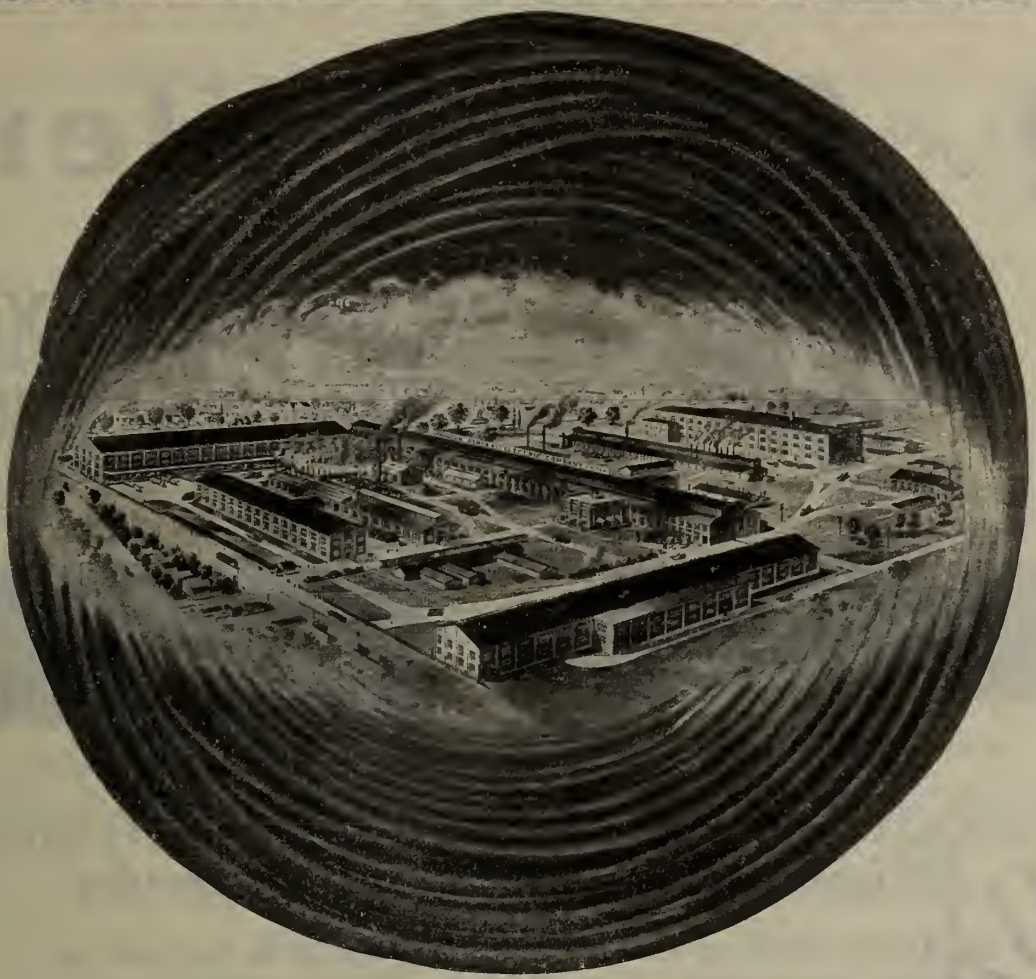

**Pliable,**
**Strong,**
**Pulley-gripping,**
**Non-slipping.**

Our Belt Department will aid you in cutting Belting Costs.

## DUNLOP TIRE & RUBBER GOODS CO., Limited

**Head Office and Factories: Toronto.**
**Branches in the Leading Cities.**

***Makers of High-Grade Tires, Hose and Packings for All Purposes.***



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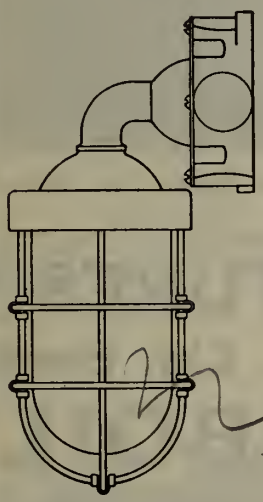

Inside Deck Fitting

## A Steel Cargo Vessel

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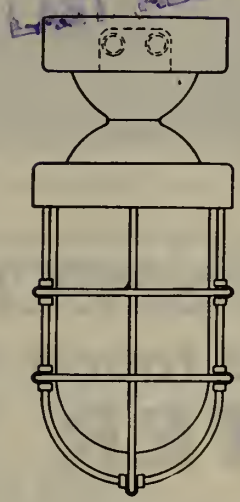

Outside Deck Fitting

Three Conductor Wire Braided Lead Covered Marine Cable

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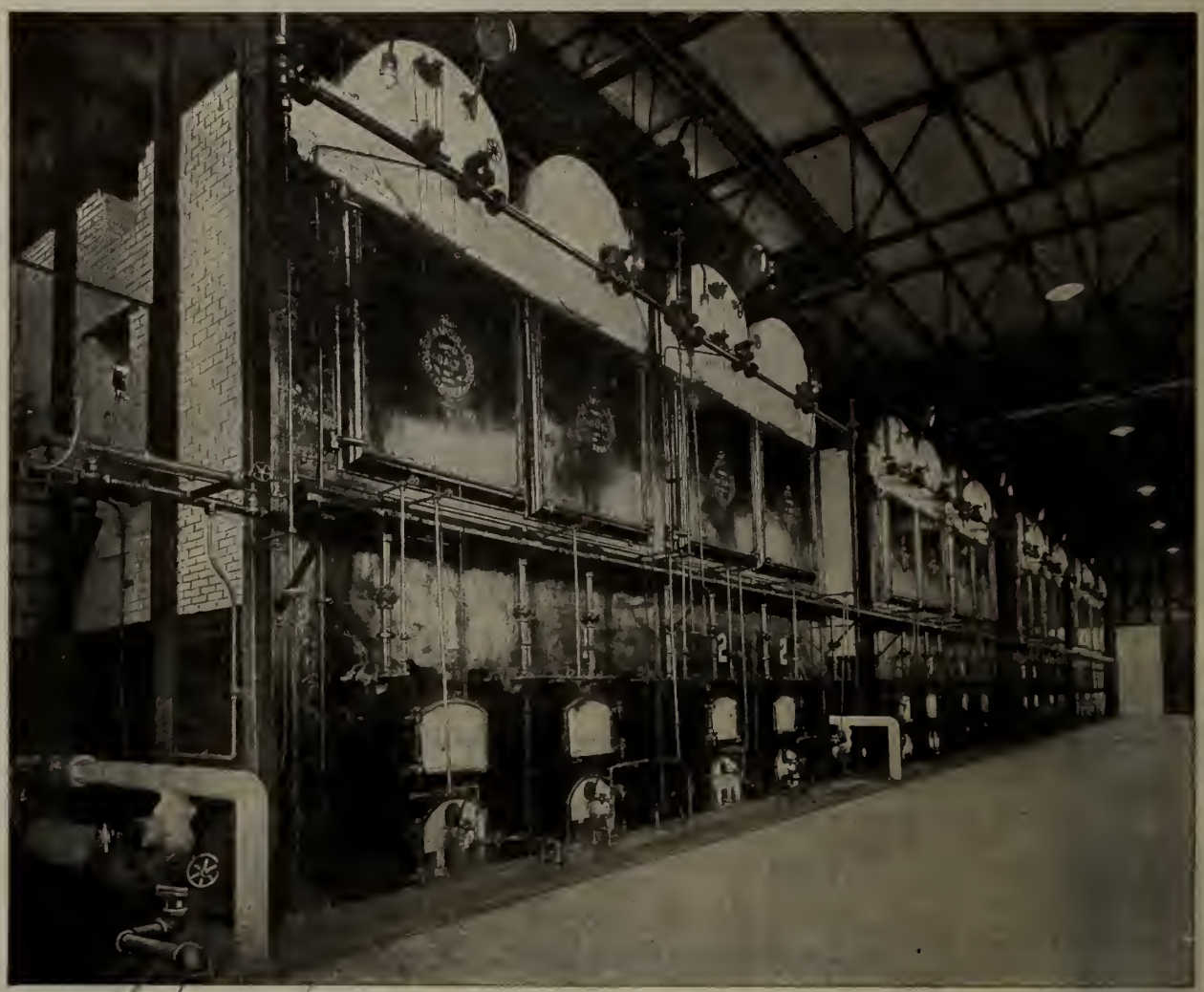

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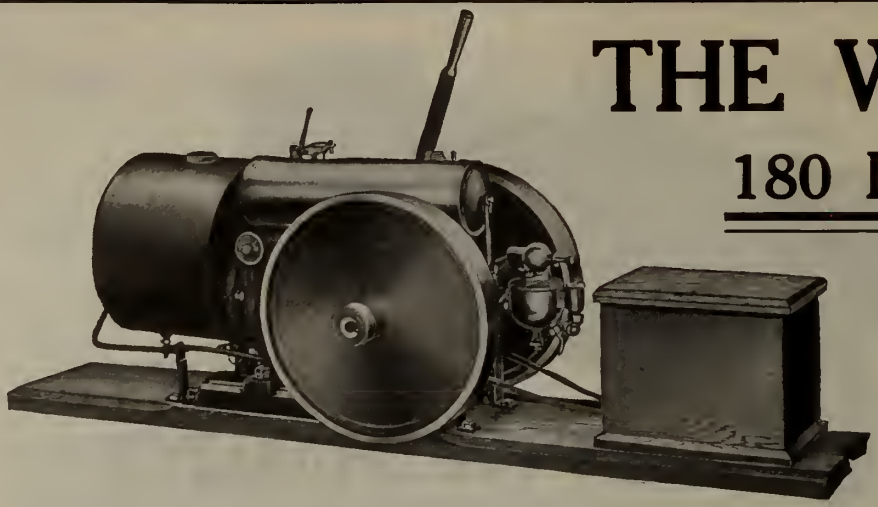

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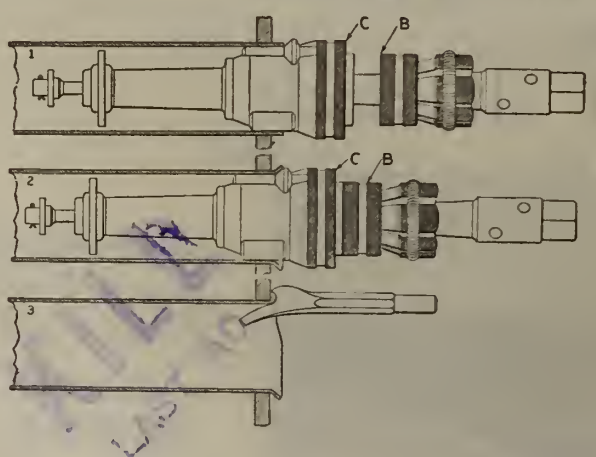


The process does not pinch or thin the tube at the bottom of the flare and the outside edge of the sheet; these parts are left the same thickness of gauge as the bottom of the tube.

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The various operations can be plainly seen by the illustration.

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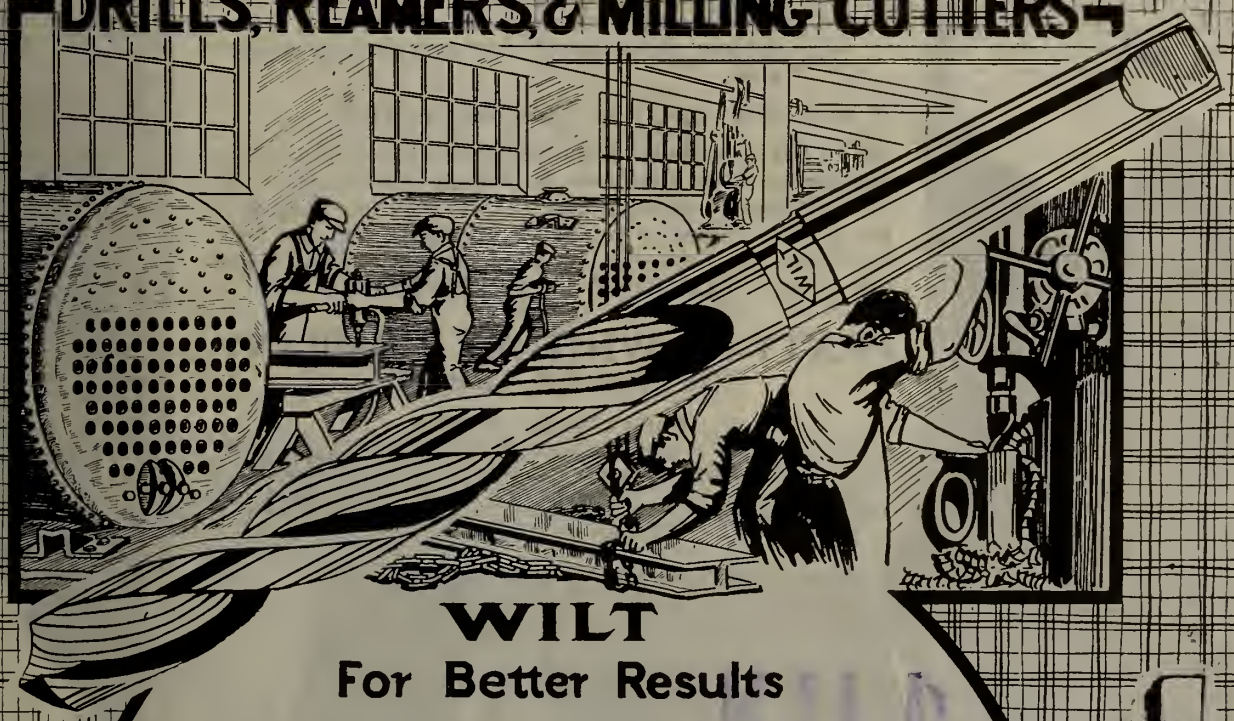

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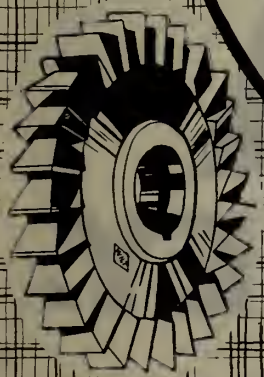

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# PRATT & WHITNEY.

# Canadian Railway and Marine World

September, 1920

## Snow Fighting Equipment.

By W. H. Winterrowd, Chief Mechanical Engineer, Canadian Pacific Railway.

In certain portions of Canada and the United States the successful and regular movement of trains during the winter often depends upon the use of special equipment, the purpose of which is to remove snow and ice from the tracks and from the direct right of way. The object of this paper is to describe briefly the various types of such equipment. In a study of snow fighting equipment, it is interesting to note that its development is very largely due to Canadians and to Canadian railways, although snow conditions in Canada are no more severe than those met with on roads passing over the Rocky or Cascade Mountains in the United States.

The Russell design of snow plough was first put in service in 1885 on the Intercolonial Ry., now a part of the Canadian National Rys. The present rotary snow plough is a development of the invention of a compound revolving snow shovel, patented in 1869 by J. W. Elliott, a Toronto, Ont., dentist. This elementary device was modified by Mr. Orange Jull of Orangeville, Ont. The Jull rotary was taken up by the Leslie Bros., also of Orangeville, who built a full size model which was tried in the C.P.R. yards at Parkdale, Toronto, in 1884. The success of this trial led the Leslie Bros. to have made for them a complete plough which was tried by the Union Pacific Rd. during the winter of 1886-87. This plough was the forerunner of the modern rotary.

Fig. 1. One of the first locomotive snow ploughs.

Orange Jull also invented, in 1889, the Jull centrifugal excavator. This type was not a success. Only one or two were built. The principal types of snow fighting equipment may be generally classified as follows: Locomotive and pilot ploughs, push ploughs, wing ploughs, spreader ploughs, machine ploughs, flangers, ice cutters and snow sweepers.

**Locomotive and Pilot Ploughs.**—As far as the writer can ascertain, the first snow plough ever built was of the push plough type. This was a wedge shaped wooden plough mounted on trucks and pushed in front of a locomotive. As this plough derailed frequently, an endeavor was made to take advantage of the weight of the locomotive. A plough was constructed utilizing the front end of the locomotive as a support. This was called a locomotive plough and fig. 1 shows an application made in 1880. This plough was made of steel. Locomotive ploughs are still in use today and their general arrangement has not been changed, except to adapt them to larger locomotives. The mold plates are generally built on a strong frame, which is bolted to the front bumper in place of the pilot. On some of the original locomotive ploughs a framework fastened to the front of the pilot supported the nose of the mold plates. With the construction shown in the illustration it is usual to apply cast iron wearing shoes, which rest on and slide along the top of the rail if the weight and force of the snow cause a depression of the nose of the plough. Several railways have advised that occasionally locomotive ploughs are permanently secured to the front of a locomotive assigned only to plough service, thus making a complete unit available at any time. For severe work this locomotive may be assisted by others.

The pilot plough was developed for use in light snow. One form of pilot plough is made by either boarding over the front of the pilot or filling between the slats with wood, thus converting an ordinary pilot into a makeshift snow plough. This arrangement has not always proved satisfactory, as the construction of pilots is not always sufficiently substantial to resist the strains imposed when ploughing. The pilot ploughs usually constructed consist of mold boards of steel plate securely fastened in front of and over the pilot, and braced to the front bumper and smoke box. These ploughs vary in size and shape. An early plough of such type is shown in fig. 2.

In moderate snows which do not pack hard or drift, and where the railway is free from deep cuts, and train operation is fairly frequent, locomotive and pilot ploughs are of great assistance in maintaining an open line. They are used on both freight and passenger locomotives.

Some types of modern pilot ploughs are shown in diagrammatic form in fig. 3. To obtain the greatest efficiency the angle formed by the mold plates should be fairly acute so that snow will slide aside instead of being pushed along in front of the plough.

**Push Ploughs and Wing Ploughs.**—A push plough is a self contained unit, consisting of a substantially built car, with a wedge shaped plough attached to its front end. This plough is generally pushed by one or more locomotives. The car may be fitted with flangers for cleaning the space between the rails. When the car is equipped with wings for widening the cut it is called a wing plough. Many railways use, for snow of moderate depth, a plough secured to the front end of a flat or ballast car, as shown in fig. 4, the car being loaded down with scrap iron or other heavy material. A more permanent construction is shown in fig. 6, where the mold plates are attached to the front end of a specially constructed car. This figure shows a plain, square nosed, single track plough without wings or flangers. The side walls are carried down over the trucks to prevent snow from working into them.

Push ploughs were frequently built V-shaped, simply throwing the snow to each side, without lifting it appreciably. These ploughs did not always prove satisfactory, as the snow was crowded aside, and if drifts were deep or in cuts it fell back on the track after the plough had passed. In hard drifts this plough packed the snow. In heavy side drifts, the form of the plough tended to derailment. Also, when backing, unless shields were supplied, snow was picked up on the back of the mold plates and carried into the trucks. The square-nosed plough, fig. 5, was developed to overcome these objections. The front of this plough consists of two wedges. The main, or bottom wedge (a), with its cutting edge horizontally across the track, is a plane inclined upward and backward. Its purpose is to lift the snow. The upper, or vertical superimposed wedge (b) is set some distance back from the front edge and is either V-shaped for single track operation, fig. 6, or triangular for double track operation, fig. 7. The upper wedge thows clear of the track the snow which has been lifted by the bottom wedge. On single track ploughs the vertical wedge is placed centrally and snow is thrown to both sides of the track. On double track ploughs the vertical cutting edge is placed at the side of the plough so that all the snow is thrown to one side.

The advantages of the square nosed plough are obvious. The snow is lifted and thrown without being packed, and with greatly reduced side thrust to the plough. Many modern ploughs of this type have an additional feature known as the drop nose. This consists of a plate hinged to the front of the bottom, or lifting, plane in such manner that it

may be brought down between the rails, removing the snow to a depth of two or three inches. The nose is ordinarily operated by means of either hand levers or by compressed air cylinders controlled from the cupola of the plough. Fig. 8 shows some various types of push and wing ploughs.

Russell Plough.—One well known push plough is the Russell design. This plough, figs. 9 and 10, is of the square nosed type and is generally built of strong timbers reinforced with structural steel. The framing on which the mold boards are laid has as its main feature a heavy timber called the "back bone." Power is applied directly to the front of the plough through a steel reinforced timber bar, hinged or pivoted to the "back bone." This bar extends between the two center sills the entire length of the car frame. At its rear end the coupler is attached. A 4 in. clearance on each side of the bar permits sufficient lateral movement for adjustment on curves. This method of transmitting power directly to the front of the plough is said to be responsible for the claim that Russell ploughs are seldom derailed. On account of the heavy pressure on the front of the square nosed plough, the Russell design is fitted with a front truck which has journal bearings on each side of each wheel. Each axle, therefore, has four journals. The surfaces of the plough which come in contact with the snow have been developed to minimize resistance. The back end of the car is several inches narrower than the front, in order to relieve the car of snow friction against its sides. The top of the plough is fitted with a cupola or lookout from which its operation is controlled. These ploughs are made in several sizes for both single and double track operation and are often equipped with elevator wings and flangers. The wings of the Russell plough are of the elevator type. The face of each wing is formed into two concave chutes called elevators. These chutes slope upward at an angle of approximately 30 deg. This type of wing first loosens the snow at the side of the cut and then carries it up and out. The distance the snow is thrown depends upon the speed at which the plough is travelling. These wings are forced out into position by means of gearing operated within the car. When not in use these wings fit into recesses in the side of the car.

Fuller Plough.—Another style of push plough is that designed by the Union Pacific Rd. and known locally as the Fuller plough, see fig. 11. The framing is 30½ ft. over end sills, and is composed principally of wood. The side sills are 12 in. by 13 in. members. The center sill is 12 x 12 in., and the two intermediate sills are each 6 x 8 in. The end sills are 12 x 16 in., and the entire frame, in addition to being mortised and tenoned, is braced by brackets and held together by ¾ in. bolts. In addition, the coupler castings at each end are connected by two 1½ in. diameter rods, extending the entire length of the frame and passing through the 12 x 24 in. body bolsters. At the front end of the frame is a system of bracing that supports the steel plough. The steel mold plate, 11 ft. wide, is of the square nosed type, the vertical wedge and the horizontal wedge being constructed of continuous 3/16 in. plate, in order to eliminate angles, joints and riveting at the junction of the two wedges. At the nose the mold plate is radiused downward. For 3 ft. back of the lower cutting edge, the framing under the nose is filled solid with wood, se-

Fig. 2. An early form of locomotive pilot snow plough.

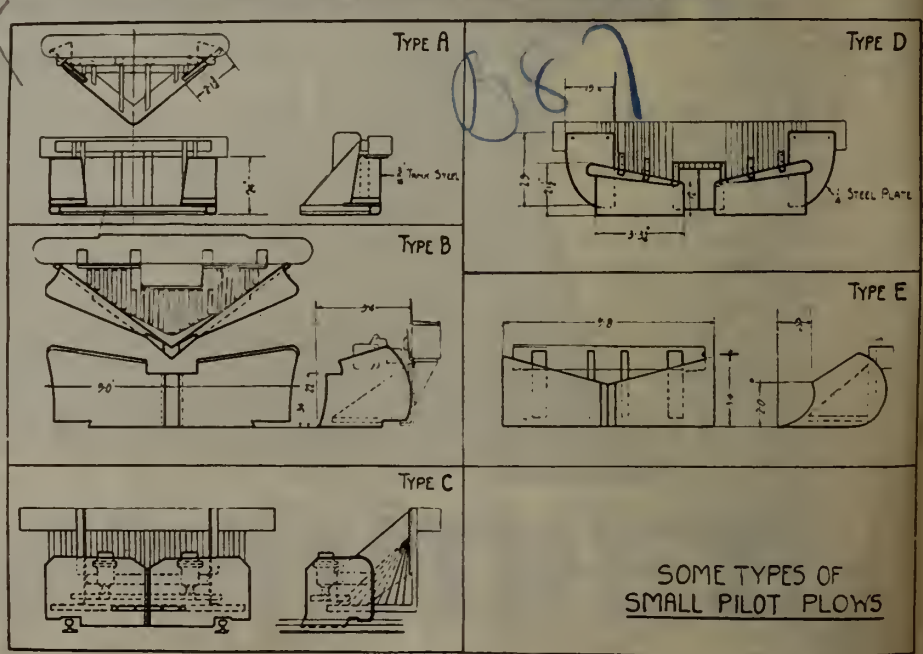


Figure 3.

curely bolted. The nose piece is a triangular steel bar over which the cutting plate is placed. The front end of the plough, when depressed, is carried on cast iron shoes. These slide along the rail and are arranged so they can be readily replaced in case of breakage. The sides below the mold plates are carried

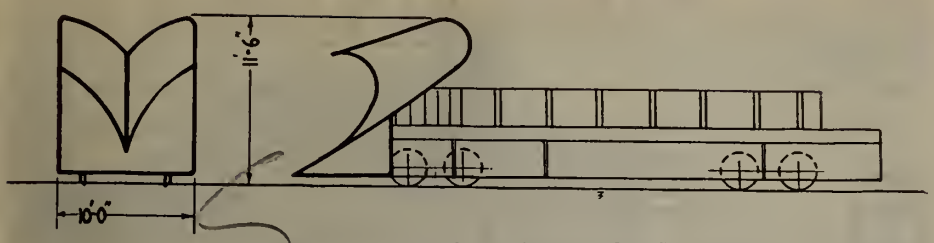


Fig. 4. Snow Plough, attached to Ballast Car.

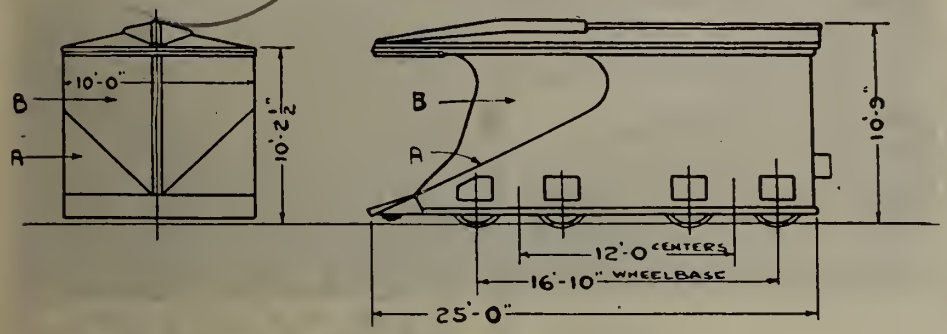


Fig. 5. Push Snow Plough, plain.

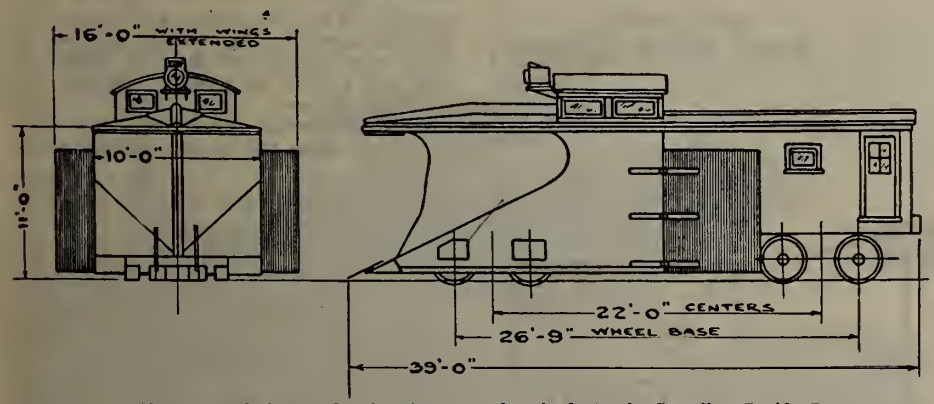


Fig. 6. Push Snow Plough, wing type, for single track, Canadian Pacific Ry.

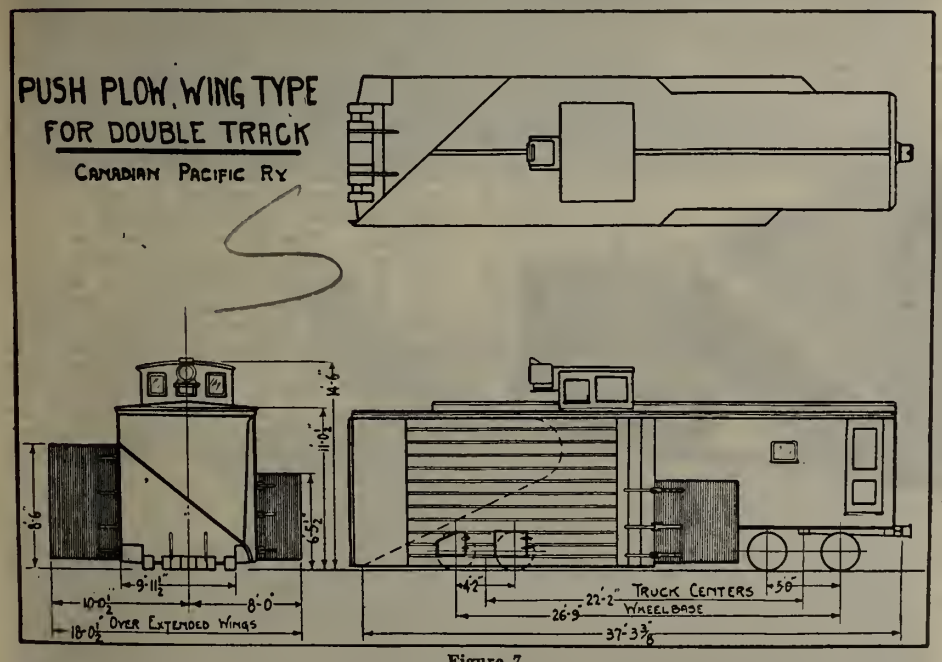


Figure 7.

down to within 8½ in. of the rail, in order to prevent snow crowding in under the front truck. The bottom portion is hinged to facilitate truck inspection.

The car is of the ordinary box type, equipped with doors and windows, and has at the front end a small cupola, with seats for accommodation of the operator. All devices for the operation of the plough are located in this cupola. Over the rear truck is a large box, filled with blast furnace slag to weigh down the back end. The ploughs are fitted with a flanger but have no wings. They have been built for single and double track operation, the only difference being in the construction of the mold plates and the plough framing.

**Canadian Pacific Railway Steel Plough.** For many years the C.P.R. has built its ploughs of steel. It was the first railway to build and use an all-steel plough. The service given by this type has been very satisfactory. The all-steel plough has a number of advantages, including greater strength, lower maintenance cost, and affords greater protection to the men operating it. These steel ploughs have been built for both single and double track operation, and are equipped with drop nose, wings, and in some instances with ice cutters and flangers similar to those applied to rotary snow ploughs, all devices being controlled from the cupola. Two styles of ploughs have been built. The type shown in fig. 12 is used in territory where light, dry snows are frequent. On this type the roof extends forward over the mold plates to prevent snow flying upward. The other type shown in fig. 13 does not have the extension roof and is used where snows are usually wet and heavy. Fig. 14 shows a double track all steel plough, and fig. 15 a general arrangement drawing of the single track type.

Trucks.—The rear truck is of the standard arch bar freight type, with 33 in. diameter cast iron wheels mounted on 4¼ in x 8 in. M. C. B. axles. It is equipped with Simplex truck bolsters, M. C. B. coil springs and roller side bearings. The wheel base is 5¼ ft. The front truck is a special design of arch bar type, with 28 in. diameter steel tired wheels mounted on 5 x 9 in. M. C. B. axles. Simplex truck bolsters are used, the ends of which are fitted with a combination roller and wedge lateral motion device. This truck has no springs, the space usually occupied with springs being fitted with a wooden block. The first front trucks used under these ploughs had no lateral motion arrangement, and the wheels were mounted on locomotive truck axles with inside journals. The bearings and boxes were, therefore, practically inaccessible, except when the plough was standing over a pit. This resulted in numerous hot journals. Occasionally the arch bars bent sidewise, indicating the need of some lateral motion to prevent excessive side strain when the ploughs were passing through sharp curves and guided by the flanged wearing shoe. The present truck, with outside journals, and with lateral motion device, has overcome these troubles.

Brakes.—The rear truck only is equipped with brakes. The air brake consists of a schedule K. D. 812 equipment; the brake pipe extends the full length of the plough with standard angle cock and hose at the rear. On the front end of the pipe an angle cock is located behind the mold plate. Access to it is had through a small hinged door in the mold plate and connection is made by means of a special length of air hose. The hand brake is the ordinary standard box car type.

Draft Attachment.—The rear end is equipped with draft gear. At the front a standard pilot coupler is supported in a large steel casting riveted to the sloping front of the plough.

Underframe.—The center sills consist of two 15 in., 33 lb. rolled steel channels, with top and bottom cover plates. The side sills are 15 in., 33 lb. channels. The bolsters are box section, consisting of pressed plate diaphragms, with top and bottom cover plates. Approximately 6 ft. back of the center of the front truck is a very strong cross strut, consisting of two 15 in., 22 lb. channels applied horizontally to the top and bottom of

the center sills. The strut extends entirely across the plough.

Front End Frame.—The center end post consist of two 15 in., 33 lb. channels, which extend from the top of the center sills, at a point just back of the front center plate, to the roof. The center of the bottom, or lifting wedge, is supported by two 10 in., 20 lb. channels, riveted to the front end of the center sill channels, and to the center end posts. The sides of the lifting wedge are supported by two 10 in., 20 lb. channels. These are supported by the front bolsters and extend diagonally upward and toward the rear to a point near the roof and about midway between the trucks. The roof extension, or hood, is built up of 3/16 in. steel plate, braced with 7 in., 9¾ lb. channels.

Side Construction.—The sides are constructed of 3/16 in. flat steel sheets reinforced by angle iron braces and posts.

End Construction.—The ends are constructed of 3/16 in. flat steel sheets. Attached to the side frames are heavy corner angles extending from the bottom of the side sills to the top of the side plate.

The cupola consists of a steel frame made of plates and angles.

The drop nose consists of a heavy plate, carried on large cast steel hinges. The front edge is equipped with removable flanged rail shoes, provided with hardened steel wear plates. Adjustable cutter plates, which extend down on either side of, and between the rails, are bolted to the front edge of the nose. These plates are beveled to a sharp edge, and are applied in a number of narrow widths, so that sections can be renewed if damaged. The drop nose is operated from the cupola by an air operated toggle arrangement placed under the nose frame.

The plough side sheets extend from the end of the lifting wedge to about midway between the trucks. They are very well braced and stiffened, particularly at the lower edge, where contact with hard ice is likely, in order to resist inward bending caused by side pressure.

Wings.—At the back edge of the side plates, steel extension wings are attached by four heavy steel hinges. The width of plough over sides is 10 ft. The width over ends of wings, when fully extended, is 16 ft. When folded, these wings are flush with the side of the plough. The outer edges of the wings are provided with a beveled extension, about 4 ft. in height. When the wings are folded, this beveled extension fits snugly against the body side sheet, and extends under the side sill as far as proper clearance for the rear journal box will permit. This beveled extension prevents snow from gathering when the plough is backing up.

Interior Finish. — Wooden furring strips are fastened to the interior of the plough body and cupola frame, and to these furrings standard tongue and groove caboose lining is applied. The floor is of 1¾ in. freight car decking. A platform is provided for the plough operator. The cupola windows are fitted with double glass, with air space between. There is one window in each side, and one at the back of the body of the car. Furnishings consist of a work bench, standard caboose stove and oil lamps.

The operating mechanism is shown in fig. 16. The drop nose is raised and lowered by air operated cylinders located inside the car and securely anchored to the center sills. The operating valve is located on the right hand side of the cupola. The wings are forced outward by air pressure applied in large cylinders fastened to the bottom of the underframe. The piston rods in the cylinders are made of large diameter pipe, with a hinged connection fitted at each end. The wings are closed by air pressure, applied in two short stroke locomotive driving brake cylinders, fastened under the side sills. The push rods are attached to levers. One end of the lever is anchored to the underframe and the other end is attached to a chain connected to the wing. Separate operating valves, located in the cupola, are provided for each wing. The supply of compressed air is obtained from the air brake system, and to permit repeated movements of the drop nose, or wings, promptly and without interference to the operation of the air brakes, storage reservoirs of large capacity are provided, these being located inside of the car. In front of the cupola, on a platform, is an electric headlight. Current for this light is obtained from the locomotive headlight set through a suitable extension cord.

This article will be continued in next issue of Canadian Railway and Marine World. Additional illustrations alluding to the article appear on pages 473, 474 and 475.

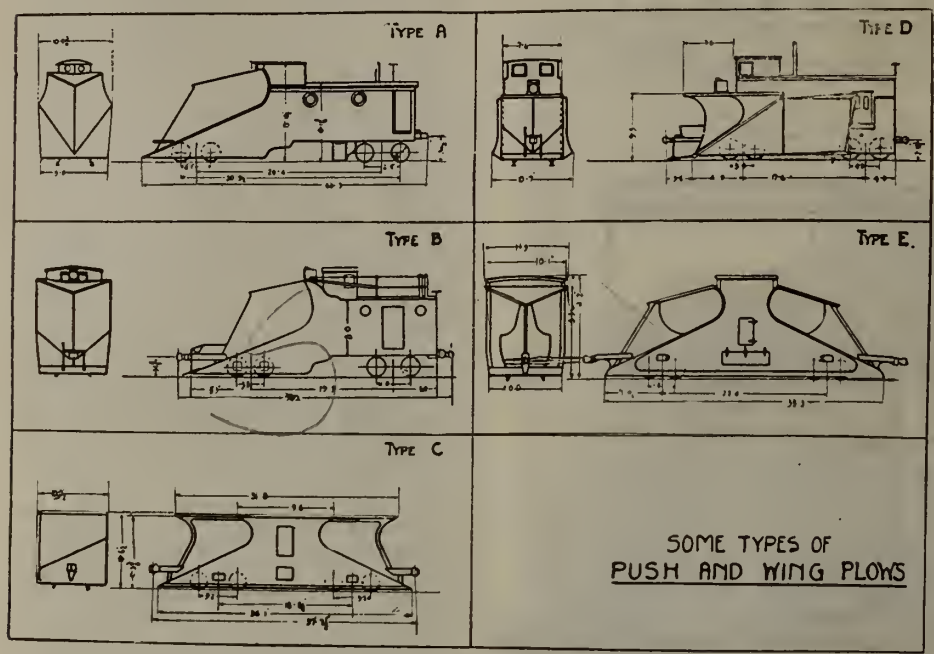


Figure 8.

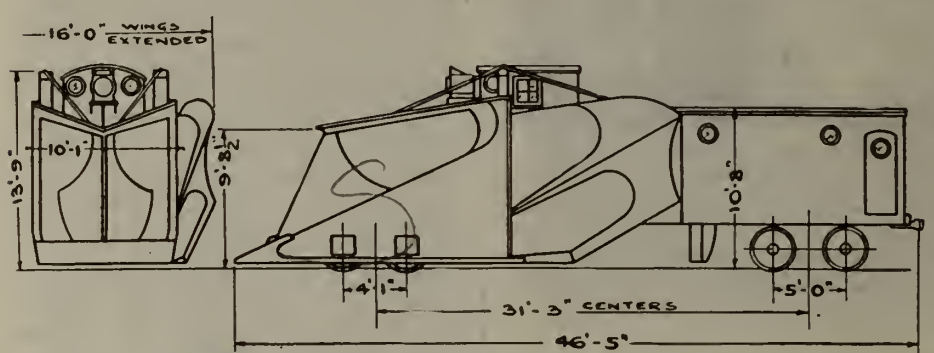


Fig. 9. Russell Snow Plough, with wing elevator.

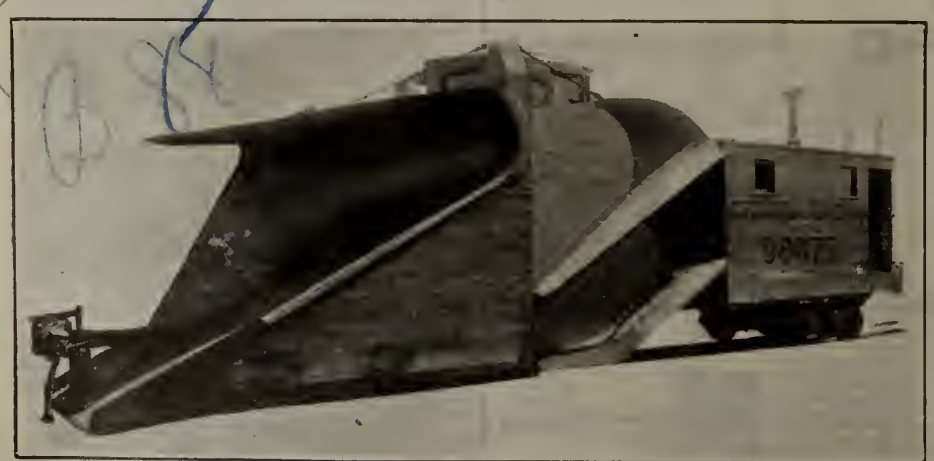

Fig. 10. Russell snow plough, with wing elevator, Grand Trunk Railway.

Fig. 11. Fuller single track snow plough, Pennsylvania Lines. See page 470.

Fig. 12. Single track, steel snow plough, Canadian Pacific Railway. See page 471.

Fig. 13. Single track, steel snow plough, Canadian Pacific Railway. See page 471.

## Electrification of Montreal Harbor Terminal Railway.

Canadian Railway and Marine World for October, 1919, contained some preliminary particulars about the electrification of the Montreal Harbor Commissioners' Terminal Railway, of which the following is a more extended description, from the Commissioners' report for 1919, issued recently:—

The Montreal harbor railway terminals consist of surface lines situated between Victoria Bridge and the Imperial Oil wharf, having a total trackage of 58 miles. During the summer of 1918, nine steam locomotives were in operation, and it was seen that if the service was to be maintained to its highest efficiency additional locomotives would be required to avoid congestion. Important electrified freight terminals were visited, and conditions closely studied, with a view of adopting the best system for the Montreal harbor terminals.

Electrification for freight yards and terminals has been found very economical and satisfactory in every way, electric locomotives being considerably more efficient than steam locomotives, especially during winter. In view of the climatic conditions, and the highly successful operation of the Canadian National Rys. lines through the Montreal tunnel terminals, which have a 2,400 volts direct current overhead system in use, a similar system was considered for the Montreal harbor terminals, and plans and other necessary details were at once got under way for laying out the work, in order that the minimum amount of time would be lost in getting the electric locomotives running. Plans and specifications were sufficiently advanced in July, 1919, to call for tenders for the material, the work being carried out by the electrical department. The work was subdivided into four main sections as follows:—1. Power station machinery equipment. 2. Control, protective and signal equipment. 3. Overhead catenary line material. 4. Rail bonding material. Sufficient material necessary for a start was received during Sept., 1919, and a commencement was made in the latter part of that month. Construction was carried on steadily throughout the winter on the overhead line work, as well as the track, it being found more advantageous to erect this material when the traffic conditions on the system were the least congested.

**The Power Station** is designed for an ultimate capacity of three 1,000 k.w. motor generator sets, the units having a very heavy overload capacity for a short period to meet railway conditions, and capable of carrying 250% load for five minutes. Each set will consist of a 3-piece unit, consisting of a 1,500 h.p. 2,300 volt 3-phase, 60 cycles, 720 r.p.m. synchronous motor, direct connected to a 500 k.w. 1,200 volt, 720 r.p.m. compound wound, d.c. generator on either end, each generator being permanently connected in series giving a 1,000 k.w. at 2,400 volts. Exciters for the synchronous motor and generator fields are mounted on the same bedplate. Each of the motor generator sets, when mounted upon its frame, will weigh 40 tons, and cover a floor space of 28 x 8 ft, and approximately 7 ft. high. Water-cooled, oil insulated power transformers of 2,000 k.v.h. will be installed, taking the power at the incoming lines, voltage of 11,000 volts and stepping it down to 2,300 a.c. for the synchronous motors. These transformers when in

service will weigh approximately 30 tons each.

The switchboards, cell, remote control, oil switches and protective equipment will be mounted on galleries on the second floor, and will consist of 21 marble panels, with indicating mechanism for the complete control of the generator sets, quick acting breakers, storage batteries, power transformers and exciters.

Fig. 14. Double track, steel snow plough, Canadian Pacific Railway. See page 471.

**The overhead line equipment** will consist of cross span and bracket construction supporting the main messenger, which will be 7/16 in. extra galvanized Siemens-Martin steel cable anchored in half-mile sections. The anchor poles will be very heavily guyed in all directions. The cross spans will be supported by wooden and steel poles at spacings of 150 ft. on tangent double track, and 120 ft. or 105 ft., as conditions require on curves or yards.

Cross-span messengers will consist of 5/16 in. high strength galvanized steel cable, the tension on all messengers being maintained at approximately 2,300 lb. Attached to and supported by the main messenger will be the conductor, consisting of 4/0 grooved hard drawn copper, fastened by hangers of various lengths, keeping the trolley at a uniform height of 23 ft. above the top of the rail. The trolley will also be anchored in half-mile sections, feeders energizing the sections as required.

Wooden poles will be used where development is not completed, these poles being Western cedar timber, varying in length from 40 to 65 ft., as conditions demand. The poles will be butt treated with hot carbolineum as a preservative, and should give long life. Steel poles will be used when permanent conditions exist, the poles being set in concrete carried well above the ground level.

**The rail bonding**, while not a very noticeable part of the installation is, however, a highly important section of the system. All the return current must get back to the power station by the rails, and close attention must be paid to the method of welding the copper bonds to the rail joints, in order to get the best results when the road comes in operation. Two bonding crews were at work through the winter and have placed over 7,000 bonds. The cross bonding at the switch points and cross-overs will be carried on as soon as the frost leaves the ground (spring of 1920). The type of bond used is a steel armored terminal gas welded, copper stranded, bond, capacity 4/0, 7 in. long, cold pressed and headed. The welding outfits are composed of oxygen-acetylene cylinders, connecting to welding torches with regulating valves, flexible hose and gauges.

Steady progress is being maintained with all four sections of the construction, notwithstanding the difficulty of getting this special material, and a considerable amount of the work is well advanced.

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**Seats on Locomotives.**—The Board of Railway Commissioners passed general order 302 July 23 as follows: Re general order 293, April 26, 1920, providing, inter alia, that all locomotives of railway companies subject to the board's jurisdiction be equipped with a seat for brakemen: Upon reading what is filed on behalf of the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen, and the Railway Association of Canada, it is ordered that paragraph 1 of general order 293 be amended by adding thereto the following, viz.: "Provided, however, that such seat shall not be located in a position that will interfere with the seating space or seats provided for engineer and firemen, or that will obstruct their view from side windows."

**Railway Lands Patented.**—Letters patent were issued during July for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

| | Acres. |
|---|---|
| Alberta & Great Waterways Ry. | 6.20 |
| Canadian Northern Ry. | 158.00 |
| Canadian Northern Western Ry. | .83 |
| Canadian Pacific Ry. | 6.65 |
| Edmonton, Dunvegan & British Columbia Ry. | .25 |
| Grand Trunk Pacific Ry. | 99.91 |
| Total | 271.84 |

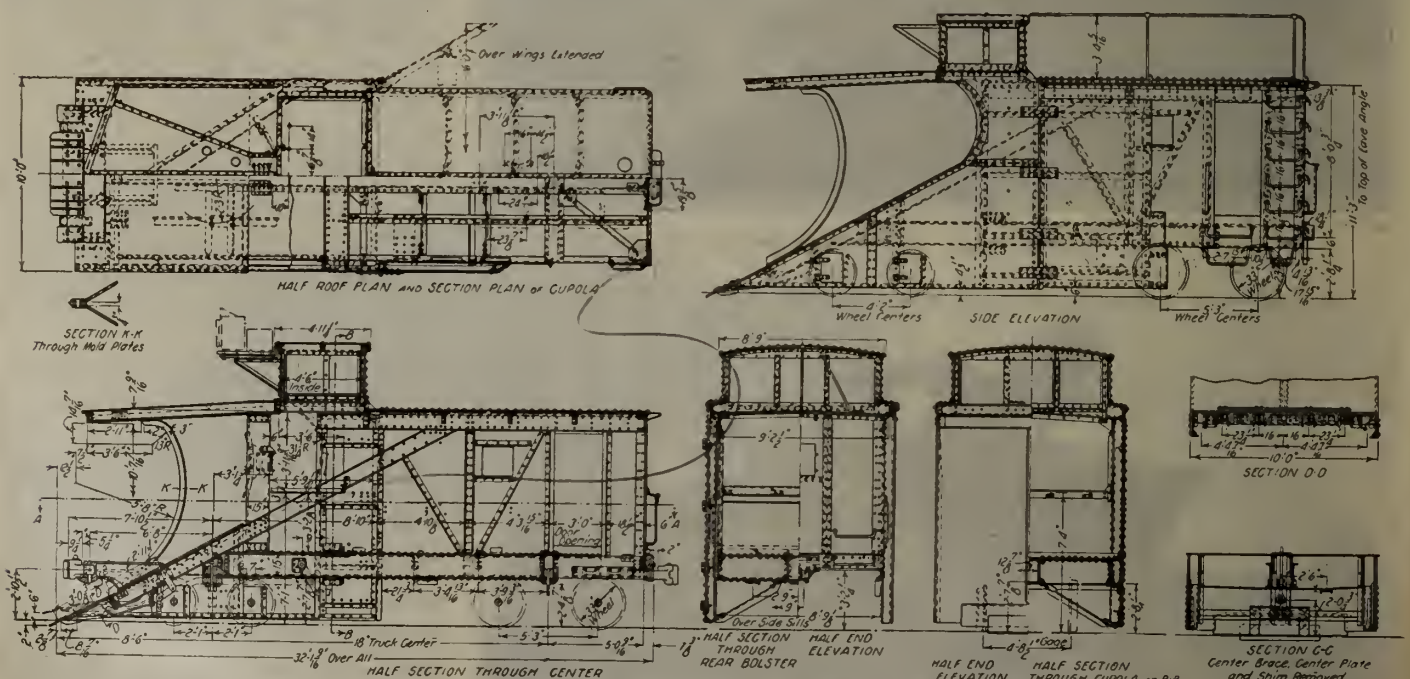


Fig. 15. General arrangement, single track snow plough, C.P.R. See page 471.

# Birthdays of Transportation Men in September.

Many happy returns of the day to:—

W. B. Bamford, District Freight Agent, C.P.R., Nelson, B.C., born at Belleville, Ont., Sept. 10, 1863.

O. E. Becker, Chief Dispatcher, Canadian National Railways, Saskatoon, Sask., born at Montreal, Sept. 20, 1873.

G. T. Bell, Passenger Traffic Manager, G.T.R., Montreal, born there, Sept. 7, 1861.

W. H. Biggar, K.C., Vice President and General Counsel, G.T.R. and G.T.P. R., Montreal, born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852.

E. J. Blais, Foreman Tinsmith, Canadian National Rys., Transcona, Man., born Sept. 26, 1876.

V. T. Boughton, Assistant Superintendent, Chapleau Division, Algoma District, C.P.R., Chapleau, Ont., born at Troy, N.Y., Sept. 9, 1888.

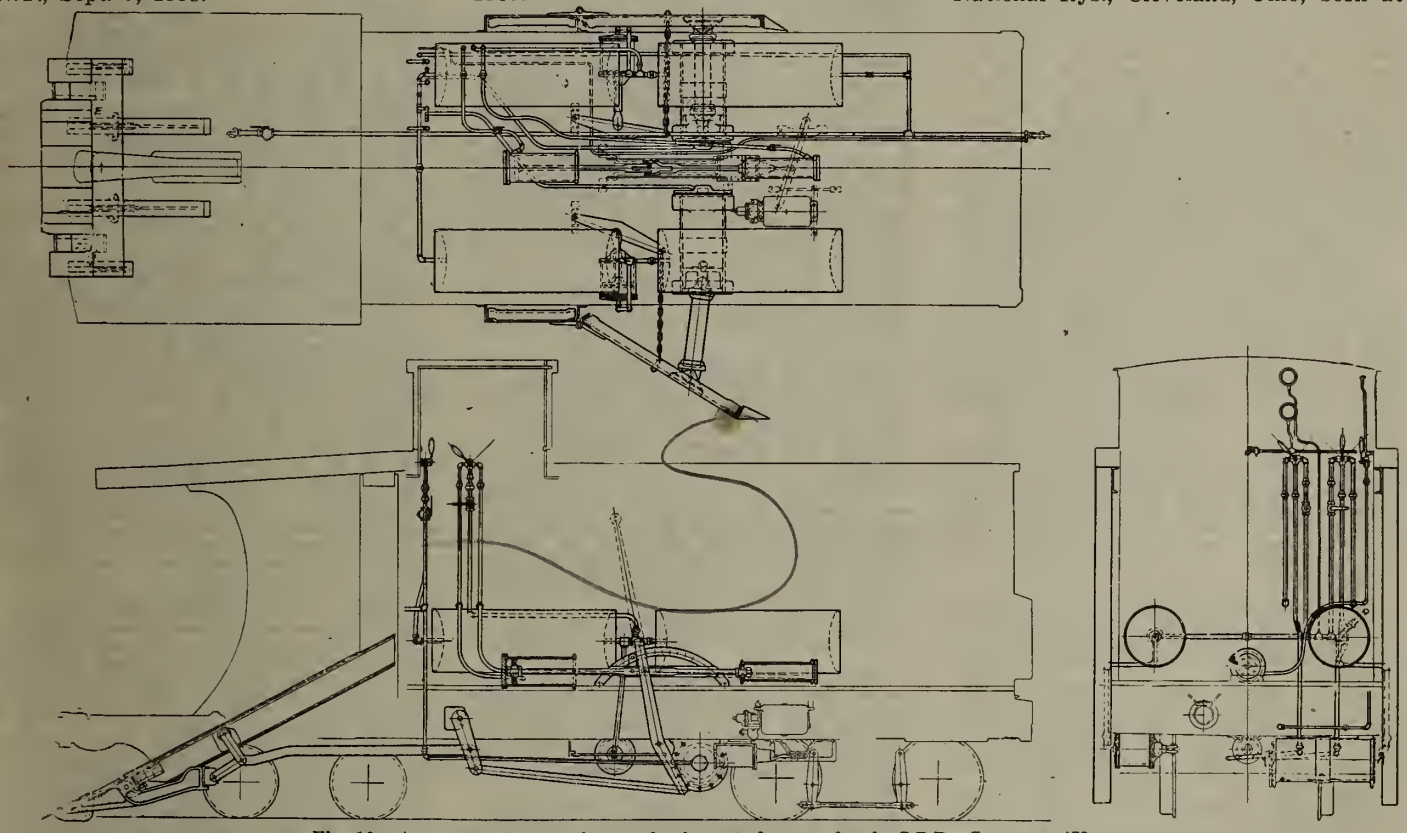

Fig. 16. Arrangement, operating mechanism, steel snow plough, C.P.R. See page 472.

E. R. Bremner, ex-Division Freight Agent, Ottawa Division, G.T.R., Ottawa, born at Toronto, Sept. 9, 1875.

W. B. Bulling, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., now of Knowlton, Que., born at Montreal, Sept. 16, 1858.

W. E. Burke, Director of Operation, Canada Steamship Lines, Ltd., Montreal, born at Belleville, Ont., Sept. 23, 1881.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 30, 1864.

A. S. Dawson, Chief Engineer, Department of Natural Resources, C.P.R., Calgary, Alta., born at Pictou, N.S., Sept. 6, 1871.

H. B. Dufief, Assistant to Solicitor, Grand Trunk Pacific Ry., Winnipeg, born at Washington, D.C., Sept. 16, 1883.

W. E. Duperow, General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., Sept. 4, 1872.

R. S. Elworthy, General Agent, Passenger Department, Canadian Pacific Ocean Services Ltd., Chicago, Ill., born at London, Eng., Sept. 10, 1877.

H. G. Foreman, Assistant Treasurer, Canadian Northern Ry. System, Toronto, born there, Sept. 2, 1882.

C. B. Foster, Assistant Passenger Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, N.B., Sept. 30, 1871.

G. J. Fox, Superintendent, Calgary Division, Alberta District, C.P.R., Calgary, Alta., born at Montreal, Sept. 24, 1883.

W. H. Gordon, Trainmaster, C.P.R., Field, B.C., born at Montreal, Sept. 21, 1875.

R. S. Gosset, Auditor of Disbursements, Canadian Northern Ry., Toronto, born there, Sept. 28, 1879.

E. Goulet, Agent, C.P.R., New Westminster, B.C., born at Quebec, Que., Sept., 1865.

A. Hector, Port Agent, Canadian Government Merchant Marine Ltd., Halifax, N.S., born there, Sept. 12, 1882.

W. B. Howard, District Passenger Agent, C.P.R., Toronto, born at Chatham, N.B., Sept. 15, 1877.

W. R. Howard, dispatcher, C.P.R., Brownville Jct., Me., born at St. Andrews, N.B., Sept. 14, 1871.

Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., Montreal, born at Brockville, Ont., Sept. 15, 1858.

G. C. Jones, Assistant to President, G.T.R., Toronto, born at Clyde, N.Y., Sept. 24, 1869.

C. B. King, Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.

S. King, London, Ont., ex-director, National Steel Car Co., Hamilton, Ont., born at Thetford, Norfolk, Eng., Sept. 12, 1853.

C. C. Labrie, Purchasing Agent, Canadian National Rys., Vancouver, B.C., born at Quebec, Que., Sept. 8, 1882.

R. E. Larmour, General Freight Agent, Eastern Lines, C.P.R., Montreal, born at Brantford, Ont., Sept. 26, 1868.

C. D. MacKintosh, Superintendent, Lethbridge Division, Alberta District, C.P.R., Lethbridge, Alta., born at Auckland, New Zealand, Sept. 24, 1882.

W. A. Mather, General Superintendent, Saskatchewan District, C.P.R., Moose Jaw, born at Oshawa, Ont., Sept., 1885.

M. B. Murphy, Manager, Winnipeg Joint Terminals, Winnipeg, born at Napa, Cal., Sept. 11, 1866.

J. Paul, District Freight Agent, Canadian National Rys., Winnipeg, born in Euphrasia Tp., Ont., Sept. 13, 1858.

W. J. Pickrell, Master Mechanic, New Brunswick District, C.P.R., St. John, born at London, Ont., Sept. 15, 1880.

H. T. Rawlings, Lake Forwarding Agent and Fuel Inspector, Canadian National Rys., Cleveland, Ohio, born at London, Eng., Sept. 27, 1883.

C. S. Richardson, District Freight Agent, C.P.R., Buffalo, N.Y., born at New York, Sept. 26, 1870.

W. D. Robb, Vice President, Transportation and Maintenance, G.T.R., Montreal, born at Longueuil, Que., Sept. 21, 1857.

A. Scott, Resident Engineer, Prince Edward Island Ry., Charlottetown, P.E. I., born at Kirkcaldy, Scotland, Sept. 6, 1884.

R. A. Sewell, Superintendent of Car Service, Eastern Lines, C.P.R., Montreal, born at Brampton, Ont., Sept. 2, 1880.

J. M. Silliman, Engineer, Maintenance of Way, Susquehanna Division, Delaware & Hudson Rd., Oneonta, N.Y., born at Easton, Pa., Sept. 8, 1885.

F. W. Sterling, District Freight Agent, C.P.R., Edmonton, Alta., born at Thornbury, Ont., Sept. 13, 1879.

H. A. Young, formerly with Ontario Storage & Cartage Co., Ltd., Toronto, now of Buffalo, N.Y., born at Brooklyn, N.Y., Sept. 1, 1864.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 301. July 22.—Prohibiting, on and after Aug. 1, the exportation of coal from the Atlantic, St. Lawrence River and Gulf ports of Canada, except to the U.S. or Newfoundland, unless otherwise permitted and in accordance with regulations to be promulgated by the board.

General order 302. July 23.—Amending par. 1 of general order 293, Apr. 26, re brakemen's seats on locomotives. This order is given fully on another page.

29,874. July 19.—Authorizing C.P.R. to rebuild bridge 17.1 over Spuzzum River, Cascade Subdivision, B.C.

29,875. July 19.—Authorizing C.P.R. to rebuild bridge 45.5, Crowsnest Subdivision, Lethbridge Division, Alta.

29,876, 29,877. July 15.—Authorizing City of St. Thomas, Ont., for three months from date, to operate pay as you enter, one man cars over London & Port Stanley Ry., on Elm St., and over Pere Marquette Rd., on Wilson Ave., St. Thomas, Ont.; the city to erect semaphore in angle of crossing on Elm St., equipped with single arm and light arranged normally clear for L. & P. S. R., the municipal car operator to stop 30 ft. clear of nearest L. & P. S. R. rail, go forward and set signal against that line, take car across, clear of the track, return and restore signal to normal position; at crossing of P. M. R. on Wilson Ave., to provide additional watchman between 6 and 12 p.m. or until it ceases operating cars.

29,878. July 14.—Authorizing Canadian Northern Ontario Ry. to close station at Cobourg, Ont.

29,879 to 29,888. July 20.—Authorizing Halifax & South Western Ry. (Canadian National Rys.) to rebuild the following bridges,—over East Pubnico River, mile 217.8; over Pubnico River, mile 220; over Big Brook, mile 221.3; over Rider's Brook, mile 227.7; over Argyle River, mile 229.6; over Tusket River, mile 238.1; over Salmon River, mile 239.7; over Acadia Stream, mile 242.8, all on the Liverpool Subdivision; 9.8 over Riverdale River, Port Wade Subdivision; and over Pleasant River, mile 12.5, Caledonia Subdivision, all in Nova Scotia.

29,889. July 14.—Authorizing Canadian Northern Ontario Ry. to close station at Colborne, Ont.

29,890. July 20.—Authorizing C.P.R. to make highway over its track at New Fortune Road, south of Enderby, B.C., existing crossing, about 1,570 ft. south, to be closed; cost of construction and maintenance and of closing existing crossing, to be paid by British Columbia Public Works Department.

29,891. July 20.—Authorizing G.T.R. to rebuild bridge carrying highway over its tracks at milepost 127.98, 1¾ miles east of Komoka, Ont.

29,892. July 17.—Ordering G.T.R. to stop train 95 at Winona, Ont., on flag, to pick up fish shipments.

29,893 to 29,895. July 20.—Authorizing Halifax & South Western Ry. (Canadian National Rys.) to rebuild bridges over La Have River, mile 18.2; Feindels bridge, mile 18; and bridge over Shannon River, mile 37.5, Port Wade Subdivision, Bridgewater Division, N.S.

29,896. July 20.—Authorizing C.P.R. to rebuild bridge 41.85, Heron Bay Subdivision, Algoma District, Ont.

29,897. July 20.—Authorizing G.T.R. to build spur for the Seaman, Kent Co., Toronto, Ont.

29,898. July 20.—Authorizing C.P.R. to rebuild bridge 29.89, North Bay Subdivision, Algoma District, Ont.

29,899. July 14.—Approving agreement, June 24, between Bell Telephone Co. and Ross Telephone Co., Algoma District, Ont.; and rescinding order 27,398, July 6, 1918.

29,900, 29,901. July 13, 20.—Authorizing C.P.R. to rebuild bridges 276, Govenlock Subdivision, Sask., and 27.7, on Walkerton Subdivision, Ont.

29,902. Aug. 4.—Authorizing Lac du Bonnet rural municipality, Man, to carry highway over C.P.R. spur in n.w. ¼ Sec. 17, Tp. 15, Range 11, east principal meridian, Man.

29,903. July 20.—Approving agreement, June 24, between Bell Telephone Co. and Rydall Banplummer Telephone Co., Algoma District, Ont.; and rescinding order 27,391, July 3, 1918.

29,904. July 13.—Approving agreement, Apr. 29, 1915, between Bell Telephone Co. and Eldon Union Telephone Association, Victoria and Ontario Counties, Ont.

29,905. July 13.—Authorizing Canadian Northern Pacific Ry. to build spur for North River Lumber Co., near Thunder River, B.C.

29,906. July 14.—Authorizing C.P.R. to build three spurs for Prest-O-Lite Co. of Canada, Toronto, and to cross under Toronto & Niagara Power Co.'s wires; spurs to be completed within three months from date.

29,907. July 13.—Approving plan and specifications of Tilbury Tp., Ont., showing character of work on Baptiste Creek, or Big Creek, drain, under G.T.R.

29,908. July 14.—Approving agreement, June 30, between Bell Telephone Co. and Zorra Telephone Co., Oxford County, Ont.; and rescinding orders 7,059, May 22, 1909, and 24,074, Aug. 11, 1915.

29,909. July 13.—Authorizing C.P.R. to rebuild bridge 28.6, Nakusp Subdivision, B.C.

29,910. July 14.—Approving plan, profile and book of reference combined, showing revised location (Alberta Land Survey), of portion of C.P.R. Langdon North Branch (Acme to Empress) from Sec. 18, Tp. 29, Range 22, at mile 59.94, to Sec. 7, Tp. 29, Range 20, west 4rth meridian, at mile 75.73.

29,911. July 23.—Ordering C.P.R. forthwith to restore daily service between Nelson and Slocan, B.C., pending compliance with requirements as to notice of circular 139, Jan. 13, 1915, and such action by the Board, if any, as it shall deem necessary.

29,912. July 19.—Extending for three months from date time within which C.P.R. shall erect new station at Islington, Ont.

29,913. July 14.—Approving Canadian National Rys. plan and profile showing location through Tps. 26 and 25, Ranges 1 and 2, west 4th meridian, Alta.; and authorizing its construction across 8 highways.

29,914. July 19.—Ordering Great Northern Ry. to file by Aug. 1, 1920, and by Apr. 1, of each succeeding year, until otherwise ordered, a list showing locomotives, designated by number, assigned to service between Michel, B.C., and International Boundary near Gateway, Mont.; and between Nelson, B.C., and International Boundary; at any time, should G.N.R. substitute or make an emergency assignment of any locomotive not so listed, it must immediately give advance notice of such intention by telegram to Board at Ottawa, and District Fire Inspector of Board at Cranbrook and Nelson, B.C.; a certificate showing fire protective appliances have been examined to be posted in cab of every locomotive actually operated over any portion of G.N.R.

29,915. July 22.—Relieving C.P.R. from providing further protection at highway crossing at milepost 2, Carleton Subdivision, at Westboro, Ont.

29,916. July 23.—Authorizing C.P.R. to divert road allowance on north boundary of n.w. ¼ Sec. 21, Tp. 20, Range 28, west 3rd meridian, and close diverted portion within right of way at mile 19.3, Leader Southeasterly Branch.

29,917. July 23.—Authorizing G.T.R. to operate over spur to Niagara Sand Co.'s premises, Toronto.

29,918. July 21.—Authorizing C.P.R. to divert road allowance on east boundary of Sec. 13, and road diversion extending through n.e. ¼ Sec. 13, and s. ½ Sec. 24, Tp. 29, Range 21, west 4th meridian, mile 73.11 to 74.51, Langdon North Branch (Acme to Empress); to build at grade, across same; and close diverted portion within right of way.

29,919. July 21.—Authorizing Canadian National Rys. to close freight house at Belleville, Ont.

29,920. July 21.—Ordering G.T.R. to provide day and night watchmen at Cherry St., Toronto, employing two men from 7 a.m. to 11 p.m., and one man from 11 p.m. to 7 a.m., daily; cost to be paid 65% by G.T.R., 35% by city; and rescinding orders 10,099, Apr. 6, 1910; 10,768, May 23, 1910; 19,707, June 26, 1913, and 29,686, June 2, 1920.

29,921. July 22.—Authorizing C.P.R. to build spur for Independent Coal Co., in Lot 32, Con. A, Ottawa Front, Carleton County, Ont.

29,922. July 14.—Approving route map showing general location of Canadian Northern Saskatchewan Ry. line from Turtleford, mile 0, to Sec. 4, Tp. 48, Range 12, mile 68.7, Sask.

29,923. July 3.—Ordering G.T.R. to rebuild bridge over its tracks at Main St., Toronto, so as to make it 46 ft. wide, with sidewalks 10 ft. wide on each side, approach to be of earth or gravel up to standard provided under agreement of June 25, 1884; bridge to be decked with cement, upon which can be placed any surfacing City of Toronto decides to use; city to pay cost of surfacing both bridge and approaches and any necessary curbing, to have right to make bridge wider, but must pay cost of such additional width; bridge to be built by Sept. 30, 1921.

29,924. July 27.—Authorizing C.P.R. to build spur for Modern Flour Mills, Morden, Man.

29,925. July 22.—Ordering C.P.R. to build team track on west side main track at Nanton, Alta.; to be done within 30 days from date.

29,926. July 27.—Authorizing G.T.R. to connect with Canadian National Rys. on Lot 10, Con. 1, Brighton Tp., Ont.

29,927. July 27.—Authorizing C.P.R. to rebuild bridge 3.1 over Assiniboine River, at St. James, Man.

29,928. July 27.—Authorizing C.P.R. to build new crossing over its track 133 ft. south of south main line switch on East Railway Ave., Nanton, Alta.; existing crossing through railway yard to be closed; cost of road between points A and C, the crossing at C, and closing existing crossing to be paid 25% out of railway grade crossing fund, 25% by Town of Nanton, and 50% by C.P.R.; maintenance of crossing to be paid by municipality.

29,929. July 27.—Extending for 60 days from July 20, time within which G.T.R. shall remove trees on northwest corner of crossing of Kingston Road, near West Hill, Ont., as directed by order 29,710, June 2.

29,930. July 30.—Suspending until further order, tbose portions of undermentioned schedules which would, on Aug. 2, abrogate existing interswitching arrangements with Cornwall St. Ry., Light & Power Co., Cornwall, Ont.; C.P.R. supplement 6 to C.R.C. no. E-3668; G.T.R. supplement 5 to C.R.C. no. E-4073, and New York Central Rd. C.R.C., N.Y.C. 2139.

29,931. July 27.—Approving agreement, July 12, between Bell Telephone Co. and Montreal (Ontario) Telephone Co., Ontario County, Ont.

29,932. July 28.—Authorizing G.T.R. to operate siding for Carroll Bros., Humberstone Tp., Ont.

29,933. July 29.—Authorizing C.P.R. to build spur for Gas City Brick Co., Medicine Hat, Alta.

29,934. July 27.—Approving agreement, June 24, between Bell Telephone Co. and Aberdeen Plummer Center Line Telephone Association, Algoma District, Ont., and rescinding order 23,584, Apr. 21, 1915.

29,935. July 28.—Approving plan, profile and book of reference showing revised location of C.P.R. Moose Jaw Southwesterly Branch (Assiniboia to Consul), from Sec. 4, Tp. 4, Range 27, mile 0, to Sec. 3, Tp. 3, Range 23, west 3rd meridian, mile 32.2.

29,936. July 28.—Relieving Canadian National Rys. from providing further protection at first crossing 462 ft. from station at Elie, Man.

29,937. July 29.—Authorizing C.P.R. to build spur for Warren Bituminous Paving Co., York Tp., Ont.

29,938. July 28.—Authorizing C.P.R. to build its passing track, at grade, across Lee St., Portage la Prairie, Man.

29,939. July 28.—Approving plan showing changes in C.P.R. interlocking plant at mile 37.2, Hamilton Jct., Ont., to take care of proposed track changes authorized under order 29,838.

29,940. July 28.—Approving plan, profile and book of reference showing revised location (Saskatchewan Land Survey) of portion of C.P.R. Rosetown Southeasterly Branch from Sec. 27, mile 20.23, to Sec. 3, Tp. 27, Range 16, west 3rd meridian, mile 24.64.

29,941. July 28.—Authorizing C.P.R. to divert road allowance between Secs. 22 and 27, Secs. 23 and 26, Tp. 21, Range 15, west 3rd meridian, Sask., and close diverted portions within right of way, at mile 61.3, Rosetown Southeasterly Branch.

29,942. July 29.—Approving plan, profile and book of reference showing revised location of C.P.R. Rosetown Southeasterly Branch from mile 55.41 to 60.22, and authorizing construction, at grade, across 4 highways.

29,943. July 29.—Authorizing G.T.R. to connect with Canadian National Rys. on Lot 21, Con. 2, Richmond Tp., near Napanee, Ont.

29,944. July 29.—Approving crossing of D'Arcy St., Cobourg, Ont., by C.P.R., except when trains are standing on siding at distance of less than 100 ft. from crossings, in which event it is ordered that one of the trainmen shall remain at crossing to provide protection.

29,945. July 30.—Approving plan, profile and book of reference of Canadian Northern Pacific Ry., showing revised location through D.L. 474, Group 1, Kamloops Division, Yale District, B.C.

29,946. July 28.—Amending order 29,307, Jan. 23, 1920, by authorizing Vancouver Power Co. to make changes in interlocking plant where its railway crosses New Westminster Southern Ry. at Cloverdale, B.C.; signals to be set normally clear on Vancouver Power Co. line and at danger on N. W. S. Ry.; interlocking plant to be operated by N. W. S. R. trainmen.

29,947. July 27.—Amending order 29,834, July 5, re Canadian National Rys. highway crossing at Winchester Ave., Fort Garry, Man.

29,948. July 29.—Approving agreement, June 24, between Bell Telephone Co. and Plummer Additional Tp., operating Plummer Additional & Lefroy Municipal Telephone Systems in Algoma District, Ont., and rescinding order 24,103, Aug. 19, 1915.

29,949. July 31.—Authorizing C.P.R. to divert road allowance between Secs. 17 and 18, Tp. 21, Range 18, now known as First St. East, Bassano, Alta.; to build diversion, at grade, across its tracks opposite Second St. West; and close diverted portion within right of way.

29,950. July 30.—Ordering C.P.R. to move automatic bell at highway two miles east of Belleville, Ont., to north side of road and closer to track crossing, and to install wigwag signal in addition to bell there; work to be completed by Sept. 1.

29,951 to 29,953. July 31.—Approving Bell Telephone Co. agreements, June 24, with Plummer, Aberdeen and Galbraith Rural Telephone Association, Ltd., Algoma District, Ont., and rescinding order 23,244, Feb. 1, 1915; July 10, with Back Line Telephone Co., Dufferin County, Ont., and rescinding order 25,815, Jan. 23, 1917; and July 20, with South Norfolk Telephone Co., Norfolk County, Ont.

29,954, 29,955. July 30.—Authorizing Beauharnois municipality, Que., to make highway crossing over St. Lawrence & Adirondack Ry. on Jacques Cartier St., Ste. Cecile, Que., dismissing application to extend Saraille Road across St. L. & A. Ry. main line and siding on Lots 147 and 258, and authorizing crossing on Lot 258, at point 437.77 ft. farther north; also authorizing it to make crossing over G.T.R. on Lots 120 and 121, Ste. Cecile Jct., Que., change in interlocking plant to be paid for by municipality.

29,956. Aug. 4.—Authorizing Canadian National Rys. to build spur to gravel pit near Wiseton, Sask., and to cross and divert certain highways.

29,957. Aug. 5.—Authorizing C.P.R. to build passing track at grade across road allowance in Stoney Indian Reserve, Tp. 25, Range 7, at Morley, Alta.

29,958. Aug. 5.—Authorizing G.T.R. to build siding and spur for Canadian Industrial Alcohol Co., Corbyville, Ont.

29,959. Aug. 5.—Authorizing Canadian Northern Quebec Ry. to build siding extension across public road at St. Elizabeth, Que.

29,960. Aug. 5.—Approving agreement, July 21, between Bell Telephone Co. and Upper Admaston Telephone Co., Renfrew County, Ont., and rescinding order 25,942, Mar. 16, 1917.

29,961. Aug. 3.—Approving Canadian National Rys. plan showing additions to station grounds at Junkins, Alta.

29,962. July 31.—Approving agreement, July 22, between Bell Telephone Co. and Halton Telephone Co. Ltd., Halton County, Ont., and rescinding order 25,306, Aug. 21, 1916.

29,963 to 29,966. Aug. 10.—Approving plans, profiles and books of reference of Canadian National Rys. (Canadian Northern Pacific Ry.) showing revised location through s.e. ¼ sec. 19, s.w. ¼ sec. 19, Tp. 19, Range 14; s.e. ¼ sec. 24, n.e. ¼ sec. 24, n.w. ¼ sec. 24, s.w. ¼ sec. 25, s.e. ¼ sec. 26, s.w. ¼ sec. 26, s.e. ¼ sec. 27, n.e. ¼ sec. 27, part of n.w. ¼ sec. 27, and s.w. ¼ sec. 24, Tp. 19, Range 15; through lots 297 and 296, G.I.; through s.w. ¼ sec. 4, Tp. 19, n.w. ¼ sec. 32, Tp. 18, Range 14, west 6th meridian, and D.L. 442, G.1; and through lots 297 and 296, G.1, Kamloops Division, Yale District, B.C.

29,967. Aug. 11.—Authorizing Grand Trunk Pacific Ry. to build spur for Edmonton Stockyards Ltd., Edmonton, Alta.

29,968 to 29,970. Aug. 11, 10, 13.—Approving C.P.R. route maps showing general location of its Kelfield Southeasterly Branch from Tp. 34, Range 10, mileage 0, to Tp. 32, Range 14, west 3rd meridian, mile 35.9; its Moose Jaw Southwesterly Branch, Assiniboia to Consul, from sec. 6, Tp. 3, Range 1, to sec. 14, Tp. 3, Range 19, west 3rd meridian, mile 84.5 to 211; and its Asquith to Cloan Branch, from Tp. 36, Range 10, to Tp. 42, Range 20, west 3rd meridian, mile 0 to 84.2.

29,971. Aug. 11.—Approving Canadian National Rys. (Canadian Northern Pacific Ry.) plan, profile and book of reference showing revised location of its Okanagan Branch from mile 44.7 to 46.11, east from Kamloops Jct., B.C.

29,972. Aug. 11.—Extending for six months from date time within which Oshawa Ry. shall complete siding and two spurs for Pedlar People Ltd., Oshawa, Ont., authorized by order 29,414.

29,973. Aug. 12.—Authorizing Canadian Northern Ontario Ry. to rebuild bridge over Moira River, Madoc Tp., Ont., mile 76.84 from Picton, and to improve grade there.

29,974. Aug. 10.—Approving C.P.R. plans B-1-1597, July 23, and B-1-1595-2, June 4, showing proposed replacement of 60 ft. d.p.g. span by two 32 ft. reinforced concrete spans, at bridge 38.92 of Cartier Subdivision, Ont.

29,975. Aug. 12.—Authorizing Grand River Ry. to rebuild bridge 4 over Spring Creek, Preston Jct., Ont.

29,976. Aug. 12.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for Burnt Mountain Lumber Co., on its Mountain Park Branch, in n.e. ¼ Sec. 24, Tp. 48, Range 22, west 5th meridian, Alta.

29,977. Aug. 10.—Authorizing Boston & Maine Rd. to rebuild overhead highway bridge 95, 0.1 mile north of Smiths Mills station, Que.

29,978. Aug. 12.—Approving agreement, July 9, between Bell Telephone Co. and Colchester North Tp., operating Colchester North Municipal Telephone System, in Essex County, Ont., and rescinding order 24,047, July 26, 1915.

29,979. Aug. 12.—Authorizing Canadian Northern Pacific Ry. to build across Shuswap Ave., Lumby, B.C.

29,980. Aug. 10.—Authorizing C.P.R. to build spur for Lignite Utilization Board of Canada, near Bienfait, Sask.

29,981. Aug. 11.—Ordering G.T.R., forthwith, to provide fruit shed and siding at Grimsby Beach station, Ont.; roadway leading to siding to be provided and maintained by North Grimsby municipality.

29,982. Aug. 11.—Approving Canadian National Rys. (Canadian Northern Pacific Ry.) plan, profile and book of reference showing revised location of its Okanagan Branch, mile 27 to 28, east from Kamloops Jct., B.C.

29,983. Aug. 10.—Extending to Sept. 30 time within which G.T.R. is required by order 29,746, June 11, to install wigwag signal at crossing of Parkdale Ave., Ottawa, Ont.

29,984. Aug. 13.—Approving agreement, July 23, between Bell Telephone Co. and New Dundee Rural Telephone Co., Waterloo and Oxford Counties, Ont., and rescinding order 24,130, Aug. 26, 1915.

29,985. Aug. 13.—Approving C.P.R. route map, showing general location of its Rosetown to Keppel Branch, from Tp. 30, Range 15, mile 0, to Tp. 35, Range 13, west 3rd meridian, mile 37.2.

39,986. Aug. 13.—Approving Canadian Northern Pacific Ry. plan, profile and book of reference showing revised location of its Okanagan Branch from mile 31.5 east from Kamloops Jct., B.C., in Lot 475 G.1., Sec. 15, and n.e. ¼ Sec. 10.

29,987. Aug. 14.—Approving agreement, July 26, between Bell Telephone Co. and Bexley Telephone Co., Victoria County, Ont.

29,988. Aug. 13.—Approving C.P.R. route map, July 14, showing general location of its Amulet to Dunkirk Branch, from Tp. 7, Range 21, to Tp. 12, Range 28, west 2nd meridian, mile 0 to 60.2.

29,989. Aug. 13.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for McLeod Hard Coal Co., in s.w. ¼ Sec. 25, Tp. 48, Range 22, west 5th meridian, on its Mountain Park Branch, Alta.

29,990. Aug. 13.—Approving C.P.R. plan showing proposed alterations to masonry to suit new reinforced concrete span crossing roadway at bridge 21.12, North Bay Subdivision, Algoma District, Ont.

29,991, 29,992. Aug. 14.—Approving Bell Telephone Co.'s agreements; July 2, with Arundel Development Co., Terrebonne, Argenteuil and Ottawa Counties, Que., and rescinding order 24,642, Jan. 10, 1916; and July 20, with Rutherglen Rural Telephone Co., Ltd., Nipissing District, Ont.

29,993. Aug. 13.—Authorizing C.P.R. to build its Lanigan Northeasterly Branch at grade across 23 highways between miles 47.80 and 84.32.

29,994. Aug. 17.—Amending order 29,756, June 15, re Esquimalt & Nanaimo Ry. bridge over Stamp River, B.C.

29,995. Aug. 12.—Approving Canadian National Rys. plan showing shelter to be built at Monkland Boulevard, near Lazard, Que.

29,996. Aug. 10.—Approving new location of the Canadian National Rys. station at Margo, Sask.

29,997. Aug. 10.—Relieving C.P.R. from providing further protection at highway crossing near Myrtle, Ont.

29,998. Aug. 17.—Dismissing Canadian National Rys. application for order that 50% of cost of subway at Pembina St., Winnipeg, be paid by Winnipeg Electric Ry. Co.

29,999. Aug. 13.—Ordering C.P.R. within 60 days to install improved type of automatic bell at highway crossing about one mile north of Guelph, Ont.

30,000. Aug. 16.—Amending order 29,239, Jan. 13, re Hillcrest Lumber Co.'s railway crossing of Esquimalt & Nanaimo Ry., Cowichan Subdivision, Vancouver, B.C.

30,001. Aug. 16.—Ordering C.P.R. to restore train service between Calgary and Macleod, Alta., which was discontinued in Jan., 1920; restoration to take place with the autumn change of timetable, and in any case, by Oct. 1, and rescinding order 29,627, May 11.

30,002. Aug. 16.—Approving agreement, July 29, between Bell Telephone Co. and Dover Tp., operating Dover Municipal Telephone System, Kent County, Ont.

30,003. Aug. 14.—Ordering Grand Trunk Pacific Ry. to provide farm crossing for John Weber, in north half of Sec. 7, Tp. 28, Range 17, west 2nd meridian, Sask.

30,004. Aug. 17.—Authorizing Toronto, Hamilton & Buffalo Ry. to build two spurs for Hoover Suction Sweeper Co. of Canada, Hamilton, Ont.

30,0005. Aug. 16.—Authorizing C.P.R. Co. to build spur for Beatty Bros., Fergus, Ont.

30,006. Aug. 14.—Authorizing Canadian National Rys. to build spur for Northern Groceries Ltd., Fort Frances, Ont.

30,007. Aug. 17.—Authorizing ....iagara, St. Catharines & Toronto Ry. to build siding for Provincial Paper Mills Co., Thorold, Ont.

30,008. Aug. 16.—Approving plan of C.P.R. standard coaling plant of 50 tons capacity.

30,009. Aug. 16.—Approving plan, profile and book of reference showing revised location of Rosetown Southeasterly Branch from Sec. 3, Tp. 27, Range 16, at mile 24.64, to Sec. 31, Tp. 23, Range 15, west 3rd meridian, at mile 44.37.

30,010. Aug. 16.—Approving cableway to be erected by Grand Trunk Paacific Branch Lines Co. for Blackstone Coal Co., over its Alberta Coal Branch at mile 53.6.

20,011. Aug. 17.—Approving proposed replacement by C.P.R. of deck lattice span by three reinforced concrete slabs on new piers at bridge 83.23, North Bay Subdivision, over Amable Du-Fond Creek, Ont.

30,012. Aug. 14.—Authorizing Essex Terminal Ry. to build spur for Dominion Forge & Stamping Co., Sandwich East Tp., Ont.

30,013. Aug. 17.—Approving C.P.R. revised plan showing proposed replacement of existing span by three reinforced concrete spans at bridge 98.76, over Kaibakong Creek, North Bay Subdivision, Ont.

30,014. Aug. 16.—Authorizing C.P.R. to build passing track at grade across highway on east boundary of station grounds at Rosser, Man.

30,015. Aug. 14.—Approving Michigan Central Rd. revised plan showing proposed change in interlocking plant at crossing of G.T.R. at Welland, Ont.

30,016. Aug. 16.—Authorizing C.P.R. Co. to build spur for Hunter & Co., at mile 18.76, North Bay Subdivision, Ont.

30,017. Aug. 19.—Ordering C.P.R. to complete station at Metiskow, Alta.

30,018. Aug. 17.—Authorizing Canadian Northern Pacific Ry. to divert portion of road through s.e. ¼ Sec. 23, n.e. ¼ Sec. 14, Tp. 14, and Lot 15, Osoyoos Division, Yale District, B.C., and for such purpose to occupy certain lands of Mrs. A. McKay.

30,019. Aug. 16.—Authorizing Canadian National Rys. to build crossing at Second St. west, Fonehill, Sask.

30,020. Aug. 16.—Authorizing C.P.R. to build spur for Canadian General Electric Co., Toronto.

30,021, 30,022. Aug. 18.—Dismissing application of Matlock Beach Club, in Manitoba, for order directing C.P.R. to grant campers there commutation privileges, and also, application of Winnipeg Beach Community Club, in Manitoba, against excessive increase in passenger fares between Winnipeg and Winnipeg Beach.

30,023. Aug. 17.—Declaring that Great Northern Ry. application (under sec. 345 of the Railway Act, 1919, for permission to issue annual pass in favor of C .T. Tawney, U.S. Veterinarian, is within the spirit and intent of general order 274, Nov. 20, 1919.

30,024. Aug. 16.—Approving location and details of C.P.R. station at Murray, Ont.

30,025. Aug. 20.—Authorizing G.T.R. to use bridge 221 over stream at mile 24.07, near St. Isidore Jct., Que.

General order 302. July 23.—Amending general order 293, Apr. 26, re brakemen's seats on locomotives. This is given in full on another page.

General order 303. Aug. 13.—Increasing proportions of through rates, fares and charges between U.S. and Canada, in both directions in effect at this date, accruing within Canada, to the extent that they shall conform to increases authorized by I.C.C. order, dated at Washington, D.C., July 29, except on coal and coke, increases on which are reserved pending Board's judgment in application of carriers for increased rates within Canada; said increases to become effective Aug. 26 on not less than five days notice. This order is given in full on another page.

General order 304. Aug. 19.—Ordering that rates and charges on export freight traffic from Canadian shipping points to Montreal, Quebec, St. John, West St. John, and Halifax, be increased in conformity with order of Interstate Commerce Commission, to become effective on or after Aug. 26, on not less than 5 days notice. This order is given in full on another page.

General order 305. Aug. 19.—Authorizing Canadian carriers of interstate traffic to publish and file tariffs in accordance with Special Permission 50,321 of Interstate Commerce Commission, to apply, at points in Canada, only on traffic en route from any U.S. point through Canada to any U.S. destination. This order is given in full on another page.

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**Canadian National Rys., Directors' Inspection Trip.**—D. B. Hanna, President, Canadian National Rys., who returned to Toronto early in August, from a trip over the Canadian National and Grand Trunk Pacific Railways to the Pacific Coast, in company with the Minister of Railways and Canals, will leave Toronto again on Sept. 4, for an inspection trip over the C.N.R. via Port Arthur and Winnipeg, to Vancouver, and will possibly go thence to Prince Rupert and return east by the G.T.P.R. part of the way and then by the C.N.R. On the return trip he will go, via Montreal and Quebec, to St. John, Halifax, Sydney, and probably Prince Edward Island. He will be accompanied by a number of the directors, those likely to go being Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals; A. P. Barnhill, K.C., St. John, N.B.; Thos. Cantley, New Glasgow, N.S.; Robt. Hobson, Hamilton Ont.; and R. T. Riley, Winnipeg. The last mentioned will join the party at Winnipeg.

**The Interstate Commerce Commission** has announced that the larger of class 1, U.S. railways have reported a deficit of $25,881,485 in railway operating for April. The government's guarantee to the railways for loss, to Sept. 1, amounts to approximately $75,000,000,000 a month and the April deficit makes a loss to the government of more than $100,000,000 for the month.

**The Canadian Ticket Agents' Association** will hold its annual meeting and outing at Montreal on Sept. 22 and 23.

# Increases Authorized in United States Freight and Passenger Rates.

The Interstate Commerce Commission gave judgment at Washington, D.C., July 29 on the application made in April and May by the official, southern and western classification territories for authority to increase rates, the original application asking for an increase of freight rates to a basis that will enable them to earn an aggregate annual net railway operating income equal, as nearly as may be, to 6% upon the aggregate value of the railway property of such carriers held for and used in transportation service. The judgment, which is a very voluminous one, deals with the groups into which the territory should be divided, viz., eastern, southern and western, and mountain-Pacific, efficiency in operation, property investment, the constructive year, revenue needs of carriers in the different groups and proceeds as follows:—In the original application the carriers proposed to obtain the desired additional revenue by general percentage increases in the respective groups, applicable to freight traffic only. No increases were suggested upon passenger, express, or mail traffic. In their amended proposals, following the wage award of the Labor Board, they propose to make increases upon all classes of traffic.

**Passenger Traffic.** — During the last nine years there has been a substantial increase in the number of revenue passenger miles. The increase for the country as a whole from 1911 to 1919 was over 40%.

Passenger fares were increased to a minimum rate of 3c. a mile on June 10, 1918, resulting in an increase of 50% where 2c. a mile was the basic fare, 20% where 2½c. applied, and no increase where the fare was 3c. or higher. It appears that rates per passenger mile have increased since 1916, as follows: In the eastern group, 27%; in the southern group, 27½%; and in the western group, 22½%. The relatively small increase in the western group is due to the fact that a 3c. basis prevailed more generally in that territory than in other parts of the country.

In part because of conditions growing out of the war the passenger traffic has become relatively more profitable during the last three years. A reduction in the number of passenger trains occurred simultaneously with a substantial increase in the number of passengers carried, resulting in heavier loading of passenger cars and trains. In 1919 the number of passenger miles was 30% greater than in 1916, but the number of passenger train miles was 12% less. Thus, in spite of the curtailment in service, the passenger revenue for the railways as a whole was greater by $470,362,485 in 1919 than in 1916. This increase in revenue is regarded by the carriers as net, "almost more than net, because it was actually moved in fewer trains."

Following request of counsel for certain shippers, the carriers provided for the record an analysis of the freight and passenger earnings and expenses for certain designated railway companies for the calendar year 1919. In making this analysis, the expenses that could not be allocated to freight or passenger traffic were apportioned generally in accordance with instructions issued by us on Jan. 1, 1920. A recapitulation of the figures showing the ratio of freight and passenger service expenses to freight and passenger revenues is as follows:

| | Operating ratio, freight service. | Operating ratio, passenger service. |
|---|---|---|
| Atchison, Topeka & Santa Fe | 74.53 | 67.84 |
| Atlantic Coast Line | 89.54 | 80.21 |
| Baltimore & Ohio | 97.88 | 75.96 |
| Chicago & North Western | 90.41 | 75.93 |
| Chicago, Burlington & Quincy | 85.8 | 67.98 |
| Erie System | 95.74 | 89.72 |
| Great Northern System | 80.70 | 84.08 |
| Louisville & Nashville | 95.3 | 76.9 |
| New York Central | 91.45 | 60.22 |
| Cleveland, Cincinnati, Chicago & St. Louis | 83.45 | 63.84 |
| Pennsylvania Railroad, East | 98.16 | 99.16 |
| Michigan Central Railroad | 81.20 | 58.50 |
| Southern Railway | 98.50 | 78.40 |

It will be noted that in the great majority of instances, the operating ratio was decidedly more favorable for the passenger traffic than for the freight traffic. However, there appears to be a wide discrepancy between the figures presented for the various lines, and too much reliance should not be placed upon this showing. Resumption of more frequent train service will tend to increase the operating ratio for passenger traffic. The carriers contend that it is uncertain whether an increase in the general level of passenger fares will yield increased revenue proportionate to the increase in the fare level, because of possible reduction in travel following a material increase in fare. The foregoing would seem to indicate that such increase as is approved upon passenger traffic may properly be less than the percentage increase applied to freight traffic.

There has also been suggested the desirability of obtaining additional revenue for the rail carriers from an extra charge placed upon passengers in sleeping and parlor cars. Such a charge amounting to ½c. a mile was in effect for a brief period during federal control. A charge of this character has much in its favor. Unquestionably the service is more valuable to the passengers, and more expensive to the rail carriers. The Pullman Co. opposes the re-establishment of a surcharge for Pullman occupancy, on the ground that such a charge reduces the travel in cars of that type. It submitted a statement showing the revenues by weeks from Mar. 1 to Sept. 30, 1918, compared with corresponding weeks of the previous year. The surcharge imposed by the Director General was in effect from June 10 to Nov. 30, 1918. The statement submitted by the Pullman Co. shows that beginning with the third weeks of June there was a reduction in the revenue, as compared with the same weeks of the previous year, whereas, during the period from Mar. 1 to June 15, the earnings in 1918 were greater than in 1917. These figures appear in part at least to sustain the contention that the surcharge operated to reduce revenues. An analysis of the situation, however, indicates that factors other than the surcharge were in part responsible for the decreased revenue from passengers in sleeping and parlor cars in 1918, as the very large reduction in service rendered during that year undoubtedly accounts for a portion of the reduction in revenue. It is well known that the policy of the U.S. Railroad Administration at that time was to discourage luxury travel and reduce the mileage of sleeping and parlor cars, particularly the latter. Figures quote above in this report indicate that the total number of passenger miles in 1918, notwithstanding that the surcharge was in effect for half the year, increased 8% over the previous year and were greater than in any year prior thereto, which indicates that travel on the whole was not materially affected by the surcharge. In the amended application of the carriers following the wages award, it is proposed that a surcharge on passengers in sleeping and parlor cars be established amounting to 50% of the charge for space occupied in either class of equipment. The carriers estimate that a charge of this amount will produce in te eastern, southern and western groups a total of $43,639,344.

We conclude that increases as indicated next below may be made by all steam railways subject to our jurisdiction serving the territory embraced in the groups hereinbefore designated.

1. All passenger fares and charges may be increased 20%. The term "passenger fares" may be considered to include standard local or interline fares; excursion, convention, and other fares for special occasions; commutation and other multiple forms of tickets; extra fares on limited trains; club car charges.

2. Excess baggage rates may be increased 20%, provided that where stated as a percentage of or dependent upon passenger fares the increase in the latter will automatically effect the increase in the excess-baggage charges.

3. A surcharge upon passengers in sleeping and parlor cars may be made amounting to 50% of the charge for space in such cars, such charge to be collected in connection with the charge for space, and to accrue to the carriers.

4. Milk and cream are usually carried in passenger trains, and the revenue therefrom is not included in freight revenue. Rates on these commodities may be increased 20%.

**Switching and Special Services.** — The carriers' original petitions asked for percentage increases in freight revenue only. In their reports to us, revenue from switching and certain other special services is stated separately from freight revenue, and therefore, accepted literally, the proposal would result in no increase on switching service. However, it is conceded that the submission of the proposal in this form was due to a misunderstanding, and it is now proposed to apply increases to switching and other special services as well as to freight rates proper. No substantial reasons have been developed for exempting charges for switching from the general increases. It is our opinion that the charges for this service should be increased, together with the charges for transit, weighing, diversion, reconsignment, lighterage, floatage, storage (not including track storage), and transfer, where the carriers provide separate charges against shippers for such services. The charges for other special services are not to be subject to the general increases herein authorized. The percentage to apply should be determined by the percentage applicable in the group where the service is performed, except that at points on the boundary line between two groups taking different percentages the higher percentage should apply. It should be understood that where tariffs now provide for the absorption by one carrier of the charges of another carrier in specific amounts such absorptions should be revised in harmony with the increase in charges herein authorized.

Freight Rate Increases.

In their original applications the carriers proposed general percentage increases in freight rates in the respective groups as follows: eastern, 30%; southern, 31%; western, 24%. Following such general percentage increases, they indicate their willingness, where necessary, to revise rates to restore in so far as is deemed practicable existing recognized relationships and differentials, and as to coal and grain in certain important situations such readjustments are proposed in this proceeding. It is stated that the percentage method is not only on the whole the fairest to all interests by distributing the burden in proportion to the haul, but that it is the only way in which the desired increased revenue may be obtained without complications and delays due to tariff difficulties and to the lack of accurate statistics from which to determine the amount of revenue which may reasonably be expected from flat or maximum increases on particular commodities. It would be desirable, if it were possible, to determine definitely the commodities, the sections of the country, and even the individual rates which can best bear the burden of increases, and the relationships of the rates and differentials which will be disturbed by a percentage increase. This is precluded by the necessity of prompt action upon the main issues presented.

Percentage Increases Versus Flat Increases and Maintenance of Differentials and Relationships.—Many shippers have directed their testimony and argument principally to the method of increasing the rates rather than to the amount of the increases. Shippers are far from unanimous in their views and may be divided into three groups, viz., those who seek the preservation of existing relationships and differentials either by specific or flat increases or by applying the percentage increase to base rates and employing in connection therewith differentials from and to other points; those who advocate a percentage invance in instances, contending that differentials should increase in the same ratio as all other rates and charges; and those whose advocate a percentage increase with a maximum. While established or differential relationships of rates are not general, there are many such adjustments; some fixed by the carriers and others by us, and it is contended by some shippers that in such cases it is desirable in readjusting the rates to maintain the differentials. Many relationships in cents per unit were disturbed by the increases made by the Director General, except upon a few commodities of heavy movement which were subject to specific increases in cents or dollars and cents per unit. A relatively small proportion of these relationships have subsequently been restored. It is evident that there are many competitive situations where no recognized differentials have ever existed but where, nevertheless, the rates have been made to reflect competitive conditions. Such situations greatly outnumber those where "fixed relationships" have been established.

It is generally understood that on traffic to and from western trunk line territory and the southwest Chicago enjoyed for years a differential of 20c., first class, over St. Louis. This was thought to be a fixed, long-standing difference, and well entitled to bear the title differential. Under general order 28 it was increased to 25c. We are now asked on behalf of certain Chicago interests not to increase this differential. In this connection it is interesting to note that on traffic to and from the east the St. Louis rates are made uniformly 117% of the Chicago rates, so that under any general increase in rates the spread between the St. Louis rates and the Chicago rates is automatically widened. In 1914 the first-rate from New York to St. Louis was 13c. higher than to Chicago. The difference is now 19c., although the percentage relationship is the same now as it was in 1914. There is apparently no more justification for maintaining Chicago's differential over St. Louis on traffic to the west than for maintaining the differential of St. Louis over Chicago on traffic from the east. Practically all rates in official classification territory are constructed upon a percentage basis, and attention is directed to the important fact that not a single interest has here maintained, with the possible exception of Chicago, that we should depart generally from the percentage basis which has so long prevailed.

In favor of maintaining differentials, it is said that they have been fixed in most cases after careful investigation, and that they represent the proper measure of differences in the rates; that often they represent the maximum differences which will permit more distant shippers to compete with those in close proximity; that to increase rates by a percentage tends to decrease the radius in which goods are marketed, and thus by lessening competition prices are advanced; and that in all cases the margin of profit has not increased proportionately to prices. Those who oppose maintaining differentials at this time contend that the value of the dollar expressed in terms of commodities shipped today is in reality but one-half its former value, and, therefore, a differential which was fixed at a given amount several years ago should, to have the same economic effect, be greater today; that there have been general increases in the prices of practically all commodities, in wages, and in the charges for nearly all services, and that differentials should not be made an exception to the rule; and that as increased operating costs are the underlying reason for the proposed increased rates, the additional service represented by the differential, being more expensive that heretofore, should pay greater rates as well as other services. The adoption of specific increases in cents per unit instead of percentage advances will, of course, maintain existing relationships. However, the carriers almost uniformly oppose this method and it is not generally advocated by shippers. Further, the difficulty of its adoption is apparent because of the lack of reliable statistics from which to determine the probable additional revenue from a given increase. It should also be noted that everyone who advocated this method insisted that flat increases be applied but once to combination rates. The complicated nature of tariff publication to make such an arrangement effective, when different percentages of increase are being made in different groups, is apparent.

Without attempting to pass finally upon the question whether in given cases differentials should or should not be maintained, it is evident that no general programme of maintaining differentials can be made effective coincident with the increases here approved without materially delaying their effective date as definite testimony covering individual situations is before us in only a very few cases. To maintain differentials by applying the percentage increases to basing rates and adding thereto existing differentials cannot be done without materially lessening the amount of additional revenue to be derived by the carriers, as generally differentials are added to rather than deducted from base rates. After carefully considering the situation we find that with the exceptions hereinafter noted general percentage increases made to fit the needs of the groups of lines serving each of the four groups must be considered for present purposes the most practicable. This conclusion is without prejudice to any subsequent finding in individual situations.

Provisions for Improvements, Betterments, or Equipment.—Section 15a of the Interstate Commerce Act provides that during the two years beginning Mar. 1, 1920, the Commission shall take as such fair return a sum equal to 5½% of such aggregate value, but may, in its discretion, add thereto a sum not exceeding one-half of one per centum of such aggregate value to make provision in whole or in part for improvements, betterments or equipment, which, according to the accounting system prescribed by the Commission, are chargeable to capital account. The increases here authorized are intended to yield the additional ½ of 1%. The record leaves no doubt as to the needs of the country for additional transportation facilities. All carriers participating in the increases will be expected to make appropriate provision for additional improvements, betterments, or equipment of a character chargeable to capital account and to make report to us semi-annually, as of Dec. 31 and June 30, showing what portion of the increased revenue resulting from the increases here authorized has been devoted to that purpose.

Conclusion as to General Increases.—We are of opinion and find that the following percentage increases in the charges for freight service, including switching and special services, together with the other increases hereinbefore approved, would under present conditions result in rates not unreasonable in the aggregate under sec. 1 of the act and would enable the carriers in the respective groups, under honest, efficient, and economical management, and reasonable expenditures for maintenance of way, structures, and equipment, to earn an aggregate annual railway operating income equal, as nearly as may be, to a return of 5½% upon the aggregate value, for the purposes of this proceeding, of the railway property of such carriers held for and used in the service of transportation and ½ of 1% in addition; eastern group, 40%; southern group, 35%; 2 western group, 35%; mountain-Pacific group, 25%.

In view of the different percentages of increase herein approved, it becomes necessary to make provision for rates between the various groups. Where rates are constructed by the use of combinations upon gateways between any two groups, the through rates should be increased by applying to each factor its respective percentage. Rates between points within a group and points on the border line of such group should be increased according to the percentage applicable to the group. Where a river constitutes a boundary line between two groups, points on both banks thereof shall be considered as border line points. Joint or single line through rates between points in one group and points in other groups should be increased

33 1/3%. In cases where the rates over different routes between the same points would, by a strict application of the varying percentages of increase herein approved, be subject to different percentages, the lowest percentage applicable to any of the routes may be applied to the rates over all of such routes. In the construction of rates in accordance with these findings it is not intended that the group boundaries hereinbefore designated should be strictly observed, but the territorial boundaries heretofore recognized should be observed. For example, Richmond, one of the so called Virginia cities, should continue on the basis which it has heretofore enjoyed.

The above findings apply to all steam railways subject to our jurisdiction, including so called "short lines," but not to railways in Alaska. While the New England carriers are included in the eastern group and are subject to the percentage for that group, the evidence as to the disproportionate needs of the New England lines makes it desirable that the carriers give careful consideration to the divisions of joint rates accruing to these lines.

Individual Commodities.—Considerable evidence was presented with respect to the rates upon a number of individual commodities, including coal, lumber, cement, fruits and vegetables, petroleum, brick, sand, gravel and rock, asphalt, slag, grain, live stock, packing house products, ore, bullion, potash, salt, fertilizers, and terra cotta. Various issues have been raised or are presented as to these commodities, the principal of which are as follows: Whether there should be departures from the general parcentage increases by maintaining differentials or by the application of specific increases instead of percentages; whether maximum increases should be provided in order to avoid the full percentage increase upon relatively high rates from distant points of production to important markets; whether because of the high cost of production and marketing of some commodities, the precentage increases proposed by carriers will result in a cost delivered at points of market or consumption so great as to curtail production and distribution, an undesirable situation at this time of world shortage of commodities; whether a more general necessary use warrants a lower transportation charge; whether the rates effective June 24, 1918, before general order 28 became effective, should be made the basis of readjustment now by applying thereto a 25% increase and superimposing thereon the percentage increases now found reasonable. Our general conclusions as to the impracticability of specific increases or of attempting now to maintain differentials dispose of a number of these contentions. It should also be said that while we do not here sanction specific increases in lieu of percentages, we are not to be understood as expressing disapproval of increases of that character made by the Director General. Such increases were made under war conditions and under circumstances that do not now exist.

Our attention was called at the hearing to a number of formal complaints now pending, and we are asked to except from the general increase the rates in issue in those complaints. This would have the effect, during the pendency of those proceedings, of giving the rates in question a preferred standing and of exempting them from the general increase. In our opinion, a fairer disposition will be attained by applying the general increase to these rates, with the understanding that this action is without prejudice to any future findings.

Coal.—Carriers serving the Pennsylvania-Ohio-West Verginia coal fields propose to continue the existing differentials in coal rates, and have worked out a scheme of rates to effect that result. Carriers in the southern and western groups propose to ignore existing differentials in coal rates within those groups. The proposal of the eastern lines to preserve existing relationships is approved, and carriers in the other groups should work out a similar plan for restoring the relative adjustments of coal rates now obtaining in those groups. An effort should be made promptly to devise rates in each group that will yield, as nearly as practicable, the same revenue in the aggregate as would be afforded by a straight percentage increase on the bases herein approved.

Lumber moves in large volume, and it is under ordinary conditions a commodity of comparatively low value and highly competitive in nature. It is produced in almost all parts of the country. The greatest consuming region is in the middle west and the states east of the Mississippi River and north of the Ohio, including New England. Lumber from both the west and the south is marketed in large volume in this region, and the competition between the two producing sections is keen. There is no definite or fixed relationship in the rates from the south and the west to the consuming territory described, but carriers from each of these sections have endeavored to maintain rates relatively so adjusted as to permit free movement from each. The volume of production in the west has grown materially in the past decade, until today it is such that if excluded from eastern markets it is claimed a considerable curtailment of production will result. The Director General applied a maximum increase of 5c. upon lumber, which had the effect of maintaining in most cases the existing spread in cents per 100 lb. between southern and western lumber in the northern and eastern markets. The western lumber producers urge in this proceeding also the adoption of a maximum. Most of the southern producers, including those in the Carolinas and others who ship on comparatively short hauls to the northern markets, urge the application of a straight percentage increase. For the purpose of this report it is our opinion that the percentages hereinbefore approved should apply to this commodity.

Petroleum and its products.—The principal sources of the petroleum marketed in the U.S. are in the southwest, which will be termed the midcontinent field; in Wyoming, in California, and in Mexico. In the past 10 years many refineries representing a considerable investment have been established in the midcontinent field and the refined oil there produced is marketed to a considerable extent in the middle west and in the states east of the Mississippi and north of the Ohio. In competition with the refineries of the midcontinent field in the northern and eastern markets are the refineries of Mexican petroleum located along the Atlantic coast and other refineries in the northern and eastern states, which obtain their crude oil in large part from the midcontinent and other fields through pipe lines, though some of these refineries use rail transportation for the movement of crude oil. The Director General imposed on petroleum a flat increase of 4½% per 100 lb. in lieu of the standard 25%. The midcontinent shippers claim that a percentage increase now applied without modification to petroleum will in all probability tend to restrict the long haul movement by rail. Other shippers contend that the percentage increase should be applied without exception. It is concluded that no exception to the general percentage increases herein approved need at this time be made upon petroleum or its products. As has been observed in connection with other situations, the carriers should give careful consideration to the effect of the percentage increases approved on petroleum and, if necessity arises, should arrange for such modifications as he situation may seem to warrant.

Fruits and vegetables are produced in large volume in the far western states and in the south, particularly in Florida. These products are shipped in season to practically all sections of the country, but the most important consuming territory lies east of the Mississippi River and north of the Ohio. Comparatively long hauls to the latter territory are involved both from the south and from the Pacific coast states, and it has been contended that the effect of the proposed percentage increases applied to these rates will produce charges so high as to restrict consumption because of the resultant high delivered cost. It has been shown that in some instances it has not been possible to market profitably some fruits and vegetables, but the facts before us in this proceeding do not warrant the conclusion that transportation charges are the controlling factor in producing this result, or that the percentage increases applied to the present rates will in fact have the effect feared by the fruit and vegetable shippers. The western apple producers claim that in the past they have had difficulty in marketing in the east and that percentage increases will add materially to this difficulty. It appears, however, that the size, varying widely from year to year, of the eastern and western crops, respectively, is an important factor in determining the prices received by western growers and the ability to market in the east. A number of the fruit and vegetable rates covering long hauls, upon which there is a heavy movement, are now before us in other proceedings, and our prior observations as to the effect of our present findings with respect to rates so pending upon complaint are applicable. It is concluded that no exceptions to the general percentage increases will now be made.

Sand, Gravel, Rock, and Slag.—The Director General increased rates on sand, gravel, and stone by specific amounts. Rates on slag in the east were increased 25% and in the south generally by 1c. per 100 lb., the same as applied to sand and gravel. Shippers of all of these commodities contend that the 1c. increase made by the Director General averaged much more than 25% and that to apply to the present rates the percentage increases proposed by the carriers will produce rates so high as to materially restrict movement. The eastern carriers concede that rates on slag should not be less than upon sand and gravel. We are not convinced that exceptions should be made at this time from the percentages approved for traffic generally. However, the record does suggest that rates in eastern territory are out of proportion to those in the other groups. The carriers have indicated a willingness promptly to readjust rates in cases where

hardship results from the general percentage increases, and their special attention is called to these commodities to the end that such action may be taken as the facts may seem to warrant.

Live Stock and Packing House Products.—Shippers contend that the condition of the live stock industry is such as to make it probable that the full percentage increase proposed by the carriers will discourage production and distribution. Live stock is produced throughout the country, but the consuming markets in the north and east are to a considerable extent dependent upon the stock produced in the west and southwest. Drought conditions have prevailed here and there in recent years and the present condition of the producers does not appear favorable. However, it is not clear that this condition results from transportation charges. The Director General in increasing rates on live stock applied a maximum of 7c. per 100 lb., while the full 25% increase was applied to packing house products. To apply again a maximum to live stock, as requested by shippers, without similar maximum upon packing house products, will in all probability tend to lessen the movement of the southwestern and western stock to local packing plants and increase the movement to the larger and more distant plants in the middle west. One of the principal difficulties of which complaint has been made by the live stock producers is the lack of prompt and efficient service. To encourage the long haul movement as against the short haul movement under present conditions of car supply would tend to increase rather than reduce the transportation difficulties. From Montana to Chicago the rate is 55c. and on hogs 62c. per 100 lb. These are among the highest rates now in effect applicable to heavy movements. Under the general basis of increase herein approved, these rates would be advanced 18c. and 21c., respectively, approximately 1/5c. per lb. It is concluded that the facts before us at this time do not warrant any exception to the percentage method of increasing the rates on either live stock or packing house products.

Iron ore.—A considerable proportion of the iron ore consumed in the U.S. originates on ranges in Minnesota and Michigan near the head of Lake Superior. This ore moves to furnaces on Lake Michigan and Lake Superior; to furnaces on Lake Erie and in Pennsylvania, Ohio, and other states. The movement is by rail to the upper lake ports, and when destined beyond, by lake vessels to the lower lake ports. Because of the keenly competitive situation between the respective furnaces, the Director General adopted a specific increase of 30c. a ton upon iron ore in lieu of a percentage, which was applied to the movement from the Michigan and Minnesota ranges to the upper lake ports, but not from lower lake ports to eastern destinations, thus resulting in an equal increase in cents per ton for the rail transportation to each of the competing furnaces. Under this plan the rates of the western carriers up to the lake ports were increased approximately 57%, whereas the rates of the eastern carriers from the lower lake ports were not increased. In this proceeding the eastern carriers propose first to apply an increase of 22c. a ton and then impose thereon the general percentage increase. The testimony of ore shippers is conflicting, some proposing no further increases from the ranges to the lake ports, some favoring double increase in the rates from the lower lake ports, others proposing no exceptions to the general percentage increases proposed on traffic generally. The returns made by the principal ore carrying roads from the Minnesota ranges to Lake Superior ports indicate that such lines are in a much more prosperous condition than the western carriers generally. It is concluded that at this time no increases should be made in the rates on iron ore from the Minnesota or Michigan ranges to Lake Superior or upper Lake Michigan ports. Other rates on iron ore may be increased according to the percentages herein approved.

Other Ores.—In some of the western states there is a considerable movement of low grade ores, some of which are valued at $5 a ton or less. Shippers of these low grade ores contend that further increases in the rates thereon will result in curtailing or destroying their movement. The evidence before us in this proceedings, however does not warrant exceptions to the general percentage increases at this time.

On grain and grain products we are asked to apply in connection with such percentages as may be approved, a maximum increase. For the same reasons that have led to the conclusion that neither specific nor maximum increases are desirable, we find that upon this record no exception should be made of the general percentages upon these commodities, except as noted. There are in the middle west a number of important grain markets through which it has been customary to maintain an equalization of the rates from important producing states to important consuming regions, under which the sum of the rates into and out of the various markets is in most cases equal. This adjustment differs from an ordinary differential basis in that it is in substance providing an equal through charge over various routes between the same points by the use of sums of proportional rates rather than the estabment of joint through rates or of transit. The application of different percentages in the various groups will result in dislocation of this equalization. Carriers and shippers unite in recommending that this equalization be continued, because of the keenly competitive situation of the various markets and of the lines of railway serving such markets. However, sufficient detailed information to cover fully the situation is not before us upon this record. We find that the grain rates into and out of these markets may be increased by the general percentages herein approved, with the understanding that the carriers will, within thirty days after the service of this report, file tariffs restoring the equalization through the grain markets now enjoying that basis. This should be done after conference with interested shippers, and, if desired, we will lend our co-operation in the premises.

Port Differentials.—The eastern carriers express of record their willingness to preserve existing relationships between the rates to and from the eastern ports. No objection to this proposal was made. This result can be readily accomplished for the reason that all rates in official classification territory between the ports and points west of the Buffalo-Pittsburg line are based on the New York-Chicago rates. The base rates may be increased and existing port differentials maintained. It is our view that in filing the increased rates here authorized a provision of this character should be made.

Applications of Boat Lines. — There have been filed in this proceeding applications for increased rates by a number of boat lines. The record shows that the expenses of the boat lines have increased in general at least in the same proportion as expenses of the railways. Authority is therefore granted to boat lines subject to our jurisdiction to increase their rates to the same extent as increases are herein granted to railroads operating between the same points or in the same territory. In the construction of rail and lake rates, the present parity between Chicago and Duluth should be maintained.

Freight Rates of Electric Lines.—Petitions have been filed in this proceeding by a national organization of electric lines, seeking permission to increase their rates in the same proportion as the rates of trunk lines are advanced. The operating costs of these lines have, on the whole, increased in approximately the same ratio as those of steam railways. In some instances there is competition between the electric lines and the steam railways. We conclude that the freight rates of electric lines may be increased by the same percentages as are approved herein for trunk lines in the same territory. This is not to be construed as an expression of disapproval of increases, made or proposed in the regular manner, in the passenger fares of electric lines.

Minimum Carload Charge, Minimum Class Scale, and Minimum Charge per Shipment.—There is now in effect, with certain important exceptions, a minimum charge of $15 a car on carload traffic, applicable to line haul movements. There are also minimum class rates in the three classification territories. We find on the record no explanation of the underlying basis of the minimum carload charge or the minimum class scales and no justification for increasing them. It is our understanding that these minima were imposed as a revenue measure in connection with rates substantially lower than those authorized in this report. We also find that the minimum charge per shipment for less than carload traffic should not be increased.

Specific Divisions.—In many cases divisions between carriers are in the form of specific amounts per unit. It is obvious that unless divisions of this character be increased, such lines will receive no benefit from the increases herein approved, while the other carriers will receive more than the respective percentage increases applicable to the traffic. It is concluded that where carriers earn specific amounts as their compensation out of through rates or fares, such amounts should be increased in the same percentages as the through rates or fares. Where the divisions of carriers participating in through rates or fares are in fixed amounts per unit and are absorbed by other carriers, such absorptions should be increased in the same percentage as the through rates or fares.

Joint Rates to and from Foreign Countries.—Nothing herein should be construed as authorizing any increases in the proportions of joint through rates to or from points in foreign countries accruing in such foreign countries. The proportions of such rates accruing within the U.S. may, however, be increased to the extent herein approved for domestic rates in the same territory.

Fourth Section Departures. — In instances where the approval herein of different percentages of increase results in departures from the provision of sec.

4 of the act, the carriers will be expected either to correct such departures by tariffs filed not later than Nov. 1, 1920, or to file on or before that date applications seeking permission to continue such departures. Temporary 4th section relief will be granted by appropriate order.

Disposition of Fractions.—In computing and applying all increased rates authorized herein fractions will be treated as follows: Where rates are stated in amounts per 100 lb. or any other unit, except as provided in the succeeding paragraph, fractions of less than ¼c. will be omitted. Fractions of ¼c. or greater but less than ¾c. will be stated as ½c. Fractions of ¾c. or greater will be increased to the next whole cent. This rule will also be followed in computing passenger fares. Where rates are stated in dollars per carload, including articles moving on their own wheels, when not stated in amounts per 100 lb. or per ton, amounts of less than 25c. will be dropped; thus, $25.24 will be stated as $25. Amounts of 25c. or more but less than 75c. will be stated as 50c.; thus, $25.65 will be stated as $25.50. Amounts of 75c. or more, but less than $1, will be raised to the next dollar.

Outstanding Orders.—An order will be entered modifying outstanding orders of the Commission to the extent necessary to permit the carriers to make effective the increases herein authorized.

Effective Date of New Rates and Subsequent Adjustments.—In view of the existing situation it is important that the increased rates be made effective at as early a date as practicable. The increases herein approved may be made effective upon not less than five days notice to the Commission and to the general public by filing and posting in the manner prescribed in the Interstate Commerce Act. The authority herein granted will not apply to any rates, fares, or charges filed with this Commission to become effective later than Jan. 1, 1921.

Most of the factors with which we are dealing are constantly changing. It is impossible to forecast with any degree of certainty what the volume of traffic will be. The general price level is changing from month to month and from day to day. It is impracticable at this time to adjust all of the rates on individual commodities. The rates to be established on the basis hereinbefore approved must necessarily be subject to such readjustments as the facts may warrant. It is conceded by the carriers that readjustments will be necessary. It is expected that shippers will take these matters up in the first instance with the carriers, and the latter will be expected to deal promptly and effectively therewith, to the end that necessary readjustments may be made in as many instances as practicable without appeal to us.

An order putting the judgment into effect was passed on the same date and a supplemental report was made Aug. 11, indicating specifically the percentages of increase that should apply to freight rates within Illinois territory; between points in Illinois territory and points in the eastern group; and between points in Illinois territory and points in the western group. The new rates went into effect Aug. 26.

The following change was made in regard to passenger fares:—In our original report we said, in effect, that in computing passenger fares the carriers should follow the same rule for the disposition of fractions as was approved for the publication of freight rates where stated in amounts per 100 lb. or any other unit, except as otherwise specifically provided. Our attention is now called to the fact that it has long been the custum of the carriers in constructing passenger fares to round out fractions to the next full cent. It is our view that the practice heretofore observed may be applied in constructing the increased passenger fares, the surcharges for occupants of sleeping and parlor cars, and baggage charges, authorized in our original report.

## Cost of Railway Stationery.

An Erie Rd. official has compiled figures showing the company's expenditure for stationery and for steel rails from 1915 to 1919, inclusive, as follows:—

| Year. | Stationery. | Rails | Rail price per ton |
|---|---|---|---|
| 1915 | $403,125.20 | $660,386.00 | $30.00 |
| 1916 | 395,980.10 | 872,410.00 | 31.50 |
| 1917 | 560,565.83 | 658,839.00 | 31.50 |
| 1918 | 497,933.36 | 889,292.00 | 40.80 |
| 1919 | 541,474.55 | 781,143.00 | 40.80 |

Commenting on this, he says:—"It will surprise many employes to know, as these figures demonstrate, that stationery calls for such enormous outlay; and it will help to justify the efforts we have been making to convince employes who use paper and other articles included under the heading of stationery, that the subject is deserving of all the attention it is receiving."

## Regulations Respecting Great Northern Railway Locomotives in British Columbia.

The Board of Railway Commissioners passed order 29,914, July 19, as follows: Re fire protective appliances on Great Northern Ry. locomotives: Upon reading the reports and recommendations of the Board's Chief Operating Officer, and Chief Fire Inspector, it is ordered as follows:—

1. That the Great Northern Ry. file with the Board, on or before Aug. 1, 1920, and on or before April 1 of each succeeding year, until otherwise ordered, a list showing the locomotives, designated by number, assigned to service on its railway between Michel, B.C., and the International Boundary, near Gateway, Montana, and between Nelson, B.C., and the International Boundary, during the intervening part of the year before Nov. 1.

2. That, should it be necessary for the railway company, at any time during the said period, to substitute, or to make an emergency assignment to the lines in question, of any locomotive not so listed with the Board, the company shall immediately give advance notice of such intention, in the form of a telegram addressed to the Board at Ottawa and to the Board's district fire inspectors at Cranbrook and Nelson, B.C.

3. That in the cab of every locomotive actually operated over any portion of the said railway between Michel and the International Boundary, there shall, during the period between April 1 and Nov. 1, be posted a certificate, signed by a responsible official of the company, to the effect that the fire protective appliances on such locomotive have, within a period of not to exceed one week, been thoroughly examined, all defects repaired, and that such fire protective appliances, at the time of the issue of the certificate, are in good order, in full compliance with the requirements of the Board pertaining thereto, such certificate to show the date of such inspection and the character of defects found and repaired, and to be available for inspection by any authorized officer of the Board. A copy of each such certificate shall also be forwarded promptly to the Board's Chief Operating Officer at Ottawa.

## Freight and Passenger Traffic Notes.

The Canadian National Rys. put in operation on Aug. 5, from Toronto, and on Aug. 9, from Winnipeg, compartment-observation-library cars on trains 3 and 4 between Toronto and Winnipeg. These cars are of steel construction throughout.

The Board of Railway Commissioners has ordered the C.P.R. to restore the train service between Calgary and Macleod, Alta., which was discontinued in January, such restoration to take place with the autumn change of timetables, and in any case not later than Oct. 1.

The Board of Railway Commissioners passed order 29,911, July 23, as follows: Upon its appearing that the C.P.R. Co. reduced its daily passenger train service between Nelson and Slocan, B.C., to a tri-weekly service without notice, as required by the Board's circular 139, of Jan. 13, 1915, and upon reading the protests filed against the change made in such service, it is ordered that the C.P.R. be directed forthwith to restore the daily service formerly in existence between Nelson and Slocan, pending compliance by the company with the requirements as to notice of the said circular 139, and such action by the Board, if any, as it shall deem necessary in the premises.

The Caraquet & Gulf Shore Ry., acquired as from June 1 by the Dominion Government, has been incorporated in the Canadian National Rys. (Levis and east) as Caraquet Subdivision. A mixed train leave Bathurst main line station at 8.40 a.b., arriving Tracadie, N.B., at 6.20 p.m., and a mixed train leaves Tracadie at 7 a.m. and reaches Bathurst main line station at 4.20 p.m. Both trains run in and out of Shippegan, but do not run into or out of East Bathurst.

The C.P.R. Tourist Department's statistics show that in 1919 the foreign tourist travel in Canada was 85% more than in 1919, and that up to midsummer this year last year's record had been passed, so that this season will be by far the best on record.

## Inverness Railway & Coal Co.'s Property Sold.

The Inverness Ry. & Collieries Ltd. is the title of a new company which is reported to have bought the Inverness Ry. & Coal Co.'s assets, the title passing to the new company by an order of a Nova Scotia court on July 31. The purchase is said to include the developed coal mines, the mining areas, the railway, and the shipping wharf. The railway extends from Inverness Jct., about a mile from Point Tupper, N.S., on the Intercolonial Ry. section of the Canadian National Rys., and runs northeasterly on Cape Breton Island to Inverness, 62 miles. The company's properties have been operated by a receiver for the bondholders, under an agreement, for some time. During 1919 the purchase of the line by the Dominion Government was urged, and although there were negotiations, nothing defienite was arrived at.

# Canadian Pacific Railway Construction, Betterments, Etc.

**St. John, N.B., Bridge.**—The bridge over the St. John River, at the reversible falls, St. John, N.B., is to be replaced by a new structure a few feet further up stream and work has been started on the foundations for the abutments and on the rock excavation for the approach from the St. John end. We were advised Aug. 24 that the plans were being prepared for submission to the Board of Railway Commissioners at an early date. There have been some negotiations between the company and the city in regard to the bridge, and the city is reported to have decided to ask the Board to require that the new bridge be 90 ft. above high water, which is the same as the highway bridge, a little farther down the stream. The present railway bridge is 84 ft. above high water.

**McAdam Jct.**—A press report states that a contract has been let to J. A. Grant & Co., for the erection of three frame construction double houses at McAdam, N.B., for employes. The company is also reported to have let contracts for the erection of an addition to the car repair shops, and a brick addition to the machine shop at McAdam.

**Block Signals in Maine.**—A press report of Aug. 16 states that an order had been given for the installation of block signals on 25 miles of the company's lines in Maine, and that A. Price, General Manager, Eastern Lines, Montreal, and J. W. Woodman, General Superintendent, New Brunswick District, had gone to Augusta, Me., to confer with the Public Utilities Commission with respect to he matter.

**Palais Station, Quebec.**—A press report states that extensions to 2 umbrella train shelters at the Palais Station, Quebec, are under construction. The original shelters were each 250 ft. long, and the additions will make them each 403 ft. long.

**Chateau Frontenac Extension.**—Excavation work for the addition to the Chateau Frontenac, Quebec, is, a press report states, being proceeded with rapidly, and it was expected that work on the foundations would be started by the end of August.

**Timiskaming-Kipawa Line.** — We are officially advised that negotiations have been in progress for some time between the Quebec Government and the C.P.R. Co. with reference to the construction of a railway from Timiskaming to Kipawa, Que., under the Subsidy Act passed by the Legislature last session, but the agreement has not been signed at the date of our advice.

**Islington Station.**—The Board of Railway Commissioners has extended for three months the time within which the company shall erect a station at Islington, Ont.

**Walkerton Subdivision.**—The Board of Railway Commissioners has authorized the rebuilding of bridge at mile 27.7, Walkerton Subdivision, Ont.

**Algoma District.**—The Board of Railway Commissioners has authorized the rebuilding of bridges 28.89, North Bay Subdivision, and 41.85, Heron Bay Subdivision, Ont.

**Winnipeg Subways.**—A recent press report states that a meeting has been called in Winnipeg to ascertain the public feeling regarding a suggestion that a proposed subway under the C.P.R. tracks be at Sherbrooke St., and not at Salter St.

**Manitoba District.**—The Board of Railway Commissioners has authorized the rebuilding of bridge 3.1 over the Assiniboine River, at St. Thomas, Man.

**Donan, Man., Interlocking Plant.**—A press report states that the company has ordered a 28 lever Saxby & Farmer interlocking machine, with working levers and 4 spare spaces, for installation at Donan, Man. The machine will be installed by the company's signal construction forces.

**Govanlock Subdivision.**—The Board of Railway Commissioners has authorized the rebuilding of bridge 276, Govanlock Subdivision, Sask.

**Rosetown Southeasterly Branch.**—The Board of Railway Commissioners has approved plan, profile and book of reference of the portion of this branch from mile 20, in Sec. 27, Tp. 27, Range 16, west 3rd Meridian, to mile 24.64 in Sec. 3, Tp. 27, Range 16, west 3rd Meridian; the revised location of the branch from mile 55.41 to 60.22, and has authorized the construction of the line at grade across four highways.

**Saskatchewan Locomotive Houses.**—A press report states that tenders were received to Aug. 18 for heating the locomotive house extensions at Regina, Weyburn and Moose Jaw, Sask.

**Moose Jaw Southwesterly Branch.** — The Board of Railway Commissioners has approved plan, profile and book of reference for revised location of extension of the Moose Jaw Southwesterly Branch, Assiniboia to Consul, Sask., from mile 0, in Sec. 4, Tp. 4, Range 27, to mile 32.3, in Sec. 3, Tp. 3, Range 23, west 3rd Meridian. This branch is already in operation from Moose Jaw to Assiniboia, connecting there with the Weyburn-Lethbridge line, and the section approved of covers the 32.3 miles southerly and westerly, through the Wood Mountain district towards Consul, also on the Weyburn-Lethbridge line. A contract for grading of 35 miles southerly and easterly from Consul was let in 1919 and it was reported in the Saskatchewan Legislature last spring that 12.3 miles had been graded at the end of 1919. Work is reported to have been gone on with during this year.

**Acme to Empress.**—The Board of Railway Commissioners has approved combined plan, profile and book of reference showing revised location (Alberta Land Survey) of portion of the Acme to Empress section of the Langdon North Branch, from Sec. 18, Tp. 20, Range 22, west 4th Meridian, mile 59.94, to Sec. 7, Tp. 29, Range 20, west 4th Meridian, mile 75.73.

**Alberta District.**—The Board of Railway Commissioners has authorized the rebuilding of bridge 45.5 on the Crowsnest Subdivision.

**Alberta District Betterments.**—Tenders were reported to be under consideration recently for the following works:—Replacing a 12 ft. concrete arch culvert at Lacombe; waterproofing, abutments, Saskatchewan Ave. bridge, Edmonton; alteration and extension of station at Stettler; replacing timber trestle bridge at Nevis, and erection of 30 miles of woven wire fencing.

Contracts have been let, a press report states, for the following works in this district:—To Bennett & White Construction Co., Calgary, Alta., turntable, coaling plant and ash plant, at an estimated cost of $40,000; to A. G. Creelman & Co., Calgary, Alta., locomotive house and boiler house at an estimated cost of $60,000.

Bassano, Alta. — Contracts for construction of turntable, coaling plant and ash plant costing $40,000 for C.P.R. has been let to Bennett & White Construction Co., Calgary, and for construction of roundhouse and boilerhouse costing $60,000, to A. G. Creelman & Co., 212 7th Ave. W., Calgary.

**British Columbia District.**—The Board of Railway Commissioners has authorized the rebuilding of the following bridges:—17.1 over the Spuzzum River, Cascade Subdivision, and 28.6, on Nakusp Subdivision.

**Coquitlam Freight Shed.**—The freight shed at Port Coquitlam, B.C., was destroyed by fire Aug. 5, and the passenger station narrowly escaped catching fire, in a fire which destroyed a number of stores and houses.

**Nanoose Bay Ferry Slip.**—A press report states that the new ferry slip at Nanoose Bay, Vancouver Island, is practically completed. The apron hoisting machinery was reported to have been shipped to the site on Aug. 9. (Aug., pg. 428.)

## Canadian National Railways Earnings.

| | 1920 | 1919 |
|---|---|---|
| January | $ 7,727,562 | $ 6,787,517 |
| February | 6,516,059 | 6,265,562 |
| March | 7,761,326 | 7,160,036 |
| April | 8,207,478 | 6,936,635 |
| May | 8,305,860 | 7,884,287 |
| June | 7,776,538 | 6,433,035 |
| July | 9,003,674 | 7,896,685 |
| | $54,838,497 | $49,363,757 |

### Canadian Northern Railway System.

| | 1920 | 1919 |
|---|---|---|
| January | $4,200,700 | $4,026,000 |
| February | 3,862,300 | 3,363,800 |
| March | 4,587,700 | 3,554,350 |
| April | 4,732,623 | 3,878,149 |
| May | 4,863,500 | 4,337,750 |
| June | 4,364,600 | 3,131,000 |
| | $26,611,423 | $22,291,049 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $13,914,569 | $13,328,628 | $ 585,941 | *967,571 |
| Feb. | 13,557,104 | 12,843,231 | 713,873 | *267,242 |
| Mar. | 15,715,937 | 13,758,171 | 1,957,766 | 418,721 |
| Apr. | 15,929,416 | 13,587,570 | 2,341,846 | 253,222 |
| May | 16,459,986 | 13,262,044 | 3,197,942 | 164,182 |
| June | 16,480,574 | 13,849,757 | 2,630,817 | *359,604 |
| July | 17,375,761 | 15,756,275 | 1,619,486 | *1,377,218 |
| | $109,433,347 | $95,385,675 | $13,047,672 | *$2,135,510 |
| Incr. | $17,990,717 | $20,126,227 | ..... | ..... |
| Decr. | ..... | ..... | $2,135,510 | ..... |

*Decreases.

The expenses for July include provision for estimated increase under new wage award for July.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Decrease |
|---|---|---|---|---|
| Jan. | 5,054,034 | $ 5,867,445 | $ *813,441 | $ 97,406 |
| Feb. | 4,660,831 | 5,159,742 | *498,911 | 188,987 |
| Mar. | 5,756,372 | 5,491,293 | 265,079 | 575,215 |
| Apr. | 5,477,816 | 5,187,340 | 290,476 | 465,592 |
| May | 5,878,934 | 5,547,513 | 331,421 | 337,200 |
| | $26,827,987 | $27,253,333 | *$ 425,346 | $1,664,400 |
| Incr. | $2,194,867 | $3,859,267 | ..... | ..... |
| Decr. | ..... | ..... | $1,664,400 | ..... |

# Canadian National Railways Construction, Betterments, Etc.

**Tenders for Ties.**—Tenders were received to Aug. 31 for ties to be made and delivered between Dec. 1, 1920, and Nov. 1, 1921, as follows:—Eastern Lines:—400,000 to be delivered on District 5 National Transcontinental Ry. south of the St. Lawrence River; 1,000,000 to be delivered on Halifax Division, Intercolonial Ry., and 100,000 to be delivered on Halifax & Southwestern Branch.

Central Lines:—50,000 to be delivered on Canadian National lines in Lake St. John District; 625,000 to be delivered on Canadian National lines between Armstrong and Quebec; 25,000 to be delivered on Canadian National lines between Otwa and Quebec; 50,000 to be delivered on Canadian National lines in Central Ontario; 750,000 to be delivered on Canadian National lines between Pembroke and Port Arthur.

Western Lines:—50,000 to be delivered on Duluth, Winnipeg & Pacific Ry. in Minnesota; 400,000 to be delivered on Canadian National lines between Port Arthur and Rainy River; 25,000 to be delivered on Canadian National lines in Minnesota; 50,000 to be delivered on Canadian National lines in Manitoba; 1,000,000 to be delivered on Canadian National lines between Armstrong and Winnipeg; 600,000 to be delivered on Canadian National lines in Alberta, and 875,000 to be delivered on Canadian National lines in British Columbia.

**Halifax Southwestern Ry.**—The Board of Railway Commissioners has authorized the rebuilding of the following bridges between Halifax and Yarmouth, N.S.:—Port Wade Subdivision:—Over Riverdale River, mile 9.8; Feindels bridge, mile 18; over La Have River, mile 18.2; over Shannon River, mile 37.5. Caledonia Subdivision:—Over Pleasant River, mile 12.5. Liverpool Subdivision: Over East Pubnico River, mile 217.8; over Pubnico River, mile 220; over Big Brook, mile 221.3; over Rider's Brook, mile 227.7; over Argyle River, mile 229.6; over Tusket River, mile 238.1; over Salmon River, mile 239.7; and over Acadia stream, mile 242.8.

**Coaling Plant Contracts.**—We are officially advised that a contract has been given to Williams & Wilson Co., Montreal, for the construction of mechanical coaling plants as follows:—Point Tupper, N.S., 100 tons capacity; Pirate Harbour, N.S., 100 tons; Truro, N.S., 250 tons; Newcastle, N.B., 100 tons.

**St. John Improvements.**—A press report says that the work in progress at the C. N.R. Island yard at St. John, N.B., comprises grading for yard extension, diversion of creek, construction of three pile trestles, signal and telegraph changes, drainage and fencing changes, rearrangement of existing main line and yard tracks, and the laying of new tracks. The approximate quantities of the principal items which this work covers are: rock cut, 5,000 cu. yd.; fill, 45,000 cu. yd.; creek diversion, 60,000 cu. yd.; ballast, 10,000 cu. yd.; lifting and relaying tracks, 3.3 miles; switches, 27; laying new tracks 4.7 miles, switches 31; relining existing tracks, 2.3; two double track pile trestles; one single track pile trestle.

A recent press report states that the warehouse leased to T. McAvity & Sons on McLeod's Wharf, St. John, was being valued preparatory to being sold to the C.N.R., and that it will be pulled down and the site used for additional tracks to be laid next spring.

**St. John River Bridge, Fredericton.**—Tenders were received to Aug. 21 for the construction and completion of the substructure for a single track railway bridge over the St. John River at Fredericton, N.B., which will be part of the work being done in connection with the development of the through C.N.R. route from the National Transcontinental line at McGivney Jct., over a section of the old Canada Eastern Ry. into Fredericton, and thence over the recently completed section of the St. John & Quebec Ry. to St. John. The bridge will be 1,932 ft. 7½ in. long from face to face of ballast walls on abutments, with an elevation of 34 ft. to base of rail, the ordinary high water level being 19.87 ft., low water being 1.98 ft., and lowest point in the river bed being 19.0. The bridge will be built 65 ft. south, or down stream, from the present bridge. The substructure will consist of 2 concrete abutments, 9 piers with granite faced noses, 1 pivot pier, 2 dock-filled timber rest piers for swing span. One pier is to be taken to solid rock foundation and the others will be on pile foundations. The superstructure will consist of one 70 ft. deck plate girden span; two 163¼ ft. through truss spans, five 238½ ft. through truss spans, one 241½ ft. through truss swing span and one 60 ft. deck plate girder span.

**Petitcodiac River Bridge.** — Tenders were received to Aug. 28 for the construction of the substructure of a single track railway bridge near Salisbury, N. B., at mile 1.4 on the Albert Subdivision, viz., the line from Salisbury to Albert. The bridge will be located on the center line of the present bridge. It will be 433 ft long face to face of ballast walls on abutments, and will have an elevation of 49 ft. to base of rail. The extreme high water at spring freshet is 36 ft. 5 in., at ordinary high tide 26 ft. 2 in., and at ordinary low tide 16 ft. 8 in. The substructure will consist of 3 concrete piers, on solid rock foundation, and an alteration of 2 old abutments. The superstructure will consist of 4 pony truss spans, each 105 ft. long.

**St. Lawrence Subdivision Revisions.**—Contracts have been let for clearing, fencing, grading and building trestles, culverts and bridge substructures, on the following deviations of main line on the St. Lawrence Subdivision, Canadian Northern Quebec Ry. as follows:—Burril deviation, between Glenada and St. Boniface, mile 87.6 to 91.6; East Yamachiche deviation, between St. Boniface and Charette, mile 94.82 to 96.3; St. Ursule deviation, between Fremont and St. Justin, 110.15 to 114.89; to Angus Sinclair, contractor, Toronto; St. Paulin deviation, between Charette and St. Paulin, mile 101 to 104.6, to V. T. Bartram, contractor, Toronto. Full information as to the objects of these deviations, their character, etc., was given in Canadian Railway and Marine World for July.

**Charney to Quebec Bridge.**—A press report states that a contract has been let to J. R. O'Neil for building a line from Charney, about 8 miles east of Levis, Que., to the Quebec Bridge, and that work has been started.

**Quebec District Structures.**—A press report states that a contract has been let to W. M. Fletcher & Co., Toronto, for the erection of 8 concrete bridge and other structures at points on Quebec District.

**Forfar to Findley, Ont.** — A recent Kingston press report stated that an engineering party had arrived at Seeley's Bay to lay out a line for a connecting railwaya to be built from Forfar, mile 195 from Toronto on the C.U.R. Toronto-Ottawa line, to Findleyfi mile 173.90 from Toronto on the G.T.R. Toronto-Montreal line, and that the construction of this piece of line would place Kingston in direct communication with Ottawa and shorten by 25 miles the distance between the two cities, by combining the C.N.R. and G.T.R. lines. We are advised that a preliminary survey of a rough kind was made, but that the building of such a line has not been seriously considered by the management, nor have outside representations been made as to the desirability of building it.

**Western Line Betterments Contracts.** A press report states thta contracts for the following works have been let:—Locomotive house addition at Fort Frances, Ont., estimated cost of $20,000, to Claydon Co., Winnipeg; addition to locomotive house at Swan River Man., estimated cost $20,000, to Claydon Co., Winnipeg; locomotive house and water tank at Eaton, Sask., to E. M. Nesbitt Co., Edmonton, Alta.; alteration to station buildings and locomotive house at Prince Albert, Sask., to H. H. Luke, Prince Albert; erection of locomotive house and machine shop at Saskatoon, Sask., estimated cost $125,000, Shannon Bros., Saskatoon.

**Moose Jaw Subway.**—A press report states that a reinforced concrete subway is under construction at Moose Jaw, Sask., at an estimated cost of $60,000, P. M. Graham being the contractor.

**Prince Albert to Paddock Wood.** — The route map of the branch under construction from Prince Albert, Sask., northeasterly to the Paddock Word district, shows a line branching off fram the present line on the north bank of the Saskatchewan River and proceeding northerly to Little Red River, thence northerly and easterly, crossing the Garden River, in the direction of Paddock Wood. Hatt & Sibbald have a contract for grading the first 22 miles of the line.

**Turtleford Southeasterly Branch.**—The Board of Railway Commissioners has approved of location plans for an extension from Turtleford, Sask., to Sec. 4, Tp. 48, Range 12, west of the 3rd Meridian, mile 0 to 68.7. A contract was let in June to the Western Construction Co., North Battleford, Sask., for grading 22 miles of this line.

**Alberta Line Plans.**—The Board of Railway Commissioners has approved of plan and profile showing location of a line through Tps. 26 and 25, Ranges 1 and 2, west 4th Meridian, Alta., and has authorized the construction of the line across 8 highways. The area within which this line is routed is just west of the Saskatchewan-Alberta boundary and south of the Saskatoon-Calgary line, which crosses that boundary at Alsask.

**Kamloops - Vernon - Lumby - Kelowna Branch.**—The Board of Railway Commissioners has approved of plan, profile and book of reference showing revised location through D.L. 474, group 1, Kamloops Division, B.C. D. B. Hanna, President, C.N.R., is reported to have met the Kamloops City Council, Aug. 2, while on his trip over the western lines, and to have stated that he expected that all C.N.R. trains would run into the city within 30 days thereafter. He, how-

ever, held out little hope that the branch line to Vernon and other points in the Okanagan Valley would be completed this year, as he feared it would be impossible to procure the rails.

Vancouver Terminals.—Various questions connected with the terminal and other works for the C.N.R. in Vancouver, B.C., was under discussion between the Minister of Railways and D. B. Hanna, President, C.N.R., on the one hand, and the Vancouver City Council on the other, during the recent visit of the Minister and the President. The provision of these terminal facilities and other works is called for under an agreement made between the city council and the Canadian Northern Pacific Ry. Co., to which agreement the B.C. Government is a party, and for the carrying out of which works the government has guaranteed the principal and interest of terminal bonds. In connection with the carrying out of a large work of reclamation at False Creek flats. The transfer of the C.N.P. Ry. properties to the Dominion Government brought in a new factor, and the negotiations which took place resulted in the laying before the city council of a memorandum from Mr. Hanna, setting out the work the Canadian National Rys. proposed to do, and the adoption of a resolution by the city council on July 28 approving of the same. The memorandum, after an introductory statement as to the changed conditions since the original agreement was signed, stated that the Canadian National Rys. did not desire to evade the terms of the original agreement, but would carry them out in their entirety, with the following exceptions:—The building of the proposed hotel; the electrification of the terminals, and the construction of a tunnel. These two latter works would only be proceeded with at a future date when they might be essential in the public interest and when financial conditions permitted. The Canadian National Rys. will proceed to carry to completion the terminal work at False Creek, which includes filling, the removal of the bridge, lowering of Main St., paving the same and so forth, and in addition will assume any and all liability in connection with the Champion and White difficulty, so that the injunction may be removed and the work of completing the sea wall proceeded with at once. The memorandum pointed out that there had already been expended on these works a larger amount than the agreement called for, and that in order to complete them according to the terms of the memorandum additional sums aggregating over $1,000,000 would be required. Since the agreement as to the construction of the tunnel and the electrification of the terminal lines was made, an agreement had been made with the Great Northern Ry. which secured the C.N.R. entrance into Vancouver, provision being made for the construction of additional lines. In view of this and in view of the government policy as to capital expenditures, it was considered to be in the best interests of all to defer these works.

New Westminster-Vancouver Line. — The Minister of Railways, and D. B. Hanna, President, C.N.R., met representatives of the New Westminster City Council and the New Westminster Board of Trade, July 28, with regard to the agreement between the city and the Canadian Northern Pacific Ry. Co. for the construction of its main line to Vancouver through the city. Mr. Hanna is reported to have said that the company had agreed to carry its industrial track to the North Arm of the Fraser River. That agreement would be carried out as soon as the money was available, but as to whether the line would then go on further towards Vancouver he could not say. The Minister of Railways is reported to have said that as far as he was concerned as soon as finances permitted the C.N.R. main line would be built through New Westminster, practically upon the terms of the original survey.

In connection with this matter the New Westminster City Council is reported to have given permission Aug. 11 for the building of a commercial track from the Fraser River Bridge along Front St. to near Lytton Square, and for the erection of a temporary freight shed at the end of the line in Lytton Square, subject to the railway agreeing to continue to pay city taxes on the property.

Victoria Terminals.—Work is reported to have been started upon the erection of a locomotive house and machine shops at Point Ellice bridge, on the Songhees Reserve, as part of the C.N.R. terminal facilities in Victoria, B.C., Robertson & Partners being the contractors. The contract price is said to be $39,500.

The Minister of Railways and D. B. Hanna, President, C.N.R., visited the terminal site, July 26, and inspected the work in progress. The Minister is reported to have advised the Premier of British Columbia that the survey of the land required for terminal purposes south of Point Ellice bridge would be proceeded with, and that upon the transfer of the property from the B.C. Government to the C.N.R. the construction of the remainder of the terminal would be gone on with. (Aug., pg. 436.)

## Suggestions to Shippers by Rail.

The Railway Association of Canada has issued the following bulletin:—

A machine broke down from being run at too low a speed! For lack of moisture in the factory air, a cotton fabric failed to take smoothly its rubber surfacing—the air made the nap stand out. In other words, your goods or any man's goods or service require at least some consideration from the user if they are to do justice to themselves. All your pains go to waste if your customer or client neglects to use your product as it is intended to be used. And so with railway service to you. While the constant vigilance of the managements must keep up the performance of actual railway staffs, nothing but voluntary co-operation can maintain the shipping efficiency of that other part of the transportation machine, the consignor and the consignee. Consequently, while attending as closely as possible to their own interior efficiency, Canadian railways must appeal to the users of railway service with regard to the exterior efficiency of the transport system. May we suggest, therefore, that you instruct your secretary to prepare for you a report somewhat along the following lines:

1. As to containers.—What is our shipping room staff using to pack our goods? Is it really a cheap container? Or is its seeming cheapness offset by the loss of time, or temper, and possibly of customers by its frequent failure to protect our shipments? Or by the worry and fuss and loss of time in having to duplicate orders that should have gone through unbroken in the first place?

Is our container pilfer-proof? Is it, for example, a carton sealed with strip paper? Easily slit and resealed? Or is it protected with wire seals less easily violated?

Are our men using a crate where they could use plain sacking—as in the case of a certain cushion manufacturer, who cut the weight of a shipment in two by using burlaps? Or should we crate our goods on six sides where we now protect only four?

Are we using cardboard where we should use crating, or a solid box?

2. Marking.—How does our shipping room staff address our shipments? With good clean whole stencils? Or with daubs of a worn-out paint brush? Do the invoices show the name and address of our customer clearly and accurately—including the name of the county and province? Or is there a temperamental scribbler making them out? Do the markers copy them from the invoice just as clearly? Or with one eye on the invoice and the other on Bill Brown's imitation of Babe Ruth on the ball field?

Do they use tags that are easily torn off? Or is the marking placed where it can't come off? And will be seen easily?

Has your head shipper a copy of the Canadian Freight Association's rules and regulations?

3. Bills of lading.—Who makes them out. Does he or she write a fair hand? Even so, why are they not made out on the typewriter, most people can use a machine well enough for that purpose?

4. Time of shipment.—Does our shipping room work overtime? If so, is it necessary? Is there any reason why the work should be bunched at the end of the day? Or could some of it be got rid of, for example, in the morning when the freight sheds are not so rushed?

We venture to suggest enquiry along these lines, and improvement wherever possible along the lines indicated. Your co-operation in using railway service in the best possible way will be of great assistance to the carriers, and, therefore, to all Canadian industry.

## Postal Railway Tunnel in London.

A 9 ft. tunnel about 6½ miles long for carrying automatic railway trains to transport mail is about to be built in London, Eng. Plans were developed some years ago, and in fact the operating system was worked out by the help of an experimental line reproducing both grades and curves of the proposed railway. The tunnel is to extend from the Paddington district post office to the Whitechapel post office. It is to carry two tracks of 24 in. gauge, and the trains operating on these tracks are to be handled by remote control. On account of the necessity of avoiding other tunnels and subsurface structures, the depth of the tunnel below ground surface will vary from 28 to 87 ft. At stations the tracks are to be separated about 20 ft., to accommodate elevators and mail chutes between them.

Railways Employes Wages. — In appearing before the Board of Railway Commissioners, in Ottawa, Aug. 20, in support of the Railway Association of Canada's application for increased freight and passenger rates, H. G. Kelley, President of the Association, and of the G.T. R. and the G.T. Pacific Ry., said that the association had decided to recommend Canadian railways to adopt the new schedule fixed by the U.S. Labor Board, at Chicago, July 20, which would involve an increased expenditure of some $65,000,000 a year.

# Merging the Grand Trunk Ry. System into Canadian National Railways.

### Transfer of Grand Trunk Pacific Ry. Management to Canadian National Railways.

The following order in council, no. 1,595, was approved by the Governor General on July 12, but not made public until about the middle of August:—"The committee of the Privy Council have had before them a report, dated July 9, from the Minister of Railways and Canals, submitting as follows: That by virtue of an order in council passed on Mar. 9, 1919, confirmed by chapter 22 of the statutes of 1919, he was appointed receiver of the Grand Trunk Pacific Ry. System as in such order defined. That pursuant to the provisions of the Grand Trunk Ry. Acquisition Act, 1919, and of the agreement made thereunder, which was confirmed by statute passed at the last session of Parliament, a committee of management of the G.T.R. System has been appointed for the purpose of ensuring the operation of that system, in so far as it is possible to do so, in harmony with the Canadian National Rys., the two systems being treated, in the public interest, as nearly as possible as one system. That by reason of the appointment of such committee of management and the co-operation therewith of the board of directors of the Canadian Northern Ry. Co., which board controls the management and operation of the Canadian National Rys., large economies have already been effected, and improvements made, through co-operation in respect of both the G.T.R. System and the Canadian National Rys.. and other improvements in facilities and service are in contemplation, with the view of effecting still further savings in the joint management and operation.

"That the board of directors of the Canadian Northern Ry. Co. have advised the Minister that still further economies may be effected, without impairing the efficiency of the railway service, by placing the management and operation of the Grand Trunk Pacific Ry. System under the same management as the Canadian National Rys., and they have recommended that steps be taken to that end. That heretofore the management and operation of the Grand Trunk Pacific Ry. System has been conducted by the Minister as receiver, through the officers and staff of the respective companies composed in such system as contemplated by the original order in council. It is provided in clause 10 of the said order as follows:—'All officers except the board of directors of any company included in the Grand Trunk Pacific Ry. System, shall continue to discharge for the government receiver, till further orders or directions by him, duties in connection with the operation and management of the undertakings and work of any company included in the G.T.P. Ry. System, similar to their present duties, so that no interruption in the operation and management thereof may occur.' That the Minister is advised that he has power, under the said clause, by 'further orders or directions' to vary the duties of the said officers and staff and to arrange for the effective co-ordination in the operation and management of the G.T.P. R. System with the Canadian National Rys. as herein outlined. That President Kelley, the executive head of the G.T.R. System, has signified to the Minister that it would be of material advantage, and cause a large saving in cost of operation, if said railways were operated under one management, and therefore recommends such arrangement being carried out.

"In view of these facts and the recommendations of the executive heads of the Canadian National Rys. and of the G.T. R., the Minister recommends that he be authorized to place the operation and management of the G. T. Pacific Ry. System under those who now, or may hereafter, compose the board of directors of the Canadian Northern Ry. Company, as defined as aforesaid, with power, as incidental to such management, to appoint and discharge officers and staff, and to do all things necessary to ensure the operation of the said system in harmony with the Canadian National Rys.; it being understood, however, that the issuance and control of receiver's certificates for the purpose of financing be reserved to the Minister as receiver, as heretofore; and that all actions of the said board of management which if done by him as receiver would have required the authorization or sanction of the Exchequer Court of Canada, be done by the said board only upon, or with, such authorization or sanction. The Minister also recommends that such appointment be made for an indefinite term, terminable at any time, either by himself as receiver, or upon the instructions of the Exchequer Court of Canada. The Minister further recommends that the foregoing arrangement be subject to the approval of the Exchequer Court of Canada. The committee concur in the foregoing recommendation and submit the

### Extensions of Jurisdiction.

Hon. J. D. Reid, Minister of Railways and Canals, as Receiver, Grand Trunk Pacific Ry. Co., issued the following circular Aug. 23:—"In pursuance of order in council 1595 and with a view of effecting every economy by means of co-ordination of organization; effective Aug. 23, the management of the Grand Trunk Pacific Ry. for the Receiver, is placed under the board of directors of the Canadian National Rys. W. P. Hinton, heretofore Vice President and General Manager, G.T.P.R., having resigned as General Manager, is hereby appointed Consulting Officer to the Receiver with headquarters at Winnipeg."

D. B. Hanna, President, Canadian National Rys., issued circulars, Aug. 23, stating that in pursuance of authority issued by the Receiver, under which the management of the Grand Trunk Pacific Ry. has been placed under the board of directors of the Canadian National Rys., the jurisdiction of the following officers of the Canadian National Rys. has been extended over the G.T.P.R. lines, viz., A. J. Mitchell, Vice President in charge of Accounts and Finance; R. C. Vaughan, Assistant to President; M. H. MacLeod, Vice President in charge of Operating, Maintenance and Construction; S. J. Hungerford, Assistant Vice President in charge of Operating, Maintenance and Construction; C. A. Hayes, Vice President in charge of Traffic; Gerard Ruel, General Counsel.

The jurisdiction of the following Canadian National Rys. officials has been extended over the Grand Trunk Pacific Ry. and the Grand Trunk Pacific Coast Steamship Co.—A. E. Warren, General Manager, Western Lines, Winnipeg; H. H. Melanson, Passenger Traffic Manager, Toronto; Geo. Stephen, Freight Traffic Manager, Toronto; R. Creelman, Assistant Passenger Traffic Manager, Winnipeg; W. G. Manders, Assistant Freight Traffic Manager, Winnipeg; E. Langham, General Purchasing Agent, Toronto.

A. A. Tisdale, heretofore Assistant to Vice President and General Manager, also Purchasing Agent, G.T.P.R., Winnipeg, is reported to have been appointed Assistant to General Manager, C.N. R. and G.T.P.R., at Winnipeg.

H. H. Brewer, heretofore General Superintendent, G.T.P.R., Winnipeg, has been appointed Assistant General Manager, C.N.R. and G.T.P.R., with jurisdiction over Canadian National lines west of Armstrong, Ont., and west of and including Port Arthur, Ont., to Lobstick Jct., Alta., also G.T.P.R. lines from Winnipeg to Edmonton, inclusive, with office at Winnipeg. J. R. Cameron, heretofore Assistant General Manager, C.N. R., Winnipeg, has been appointed Assistant General Manager, C.N.R. and G. T.P.R., with jurisdiction over C.N.R. lines west of Lobstick Jct., Alta., and over G. T.P.R. lines west of Edmonton, Alta., including Vancouver Island lines, with office at Vancouver.

W. E. Duperow, heretofore General Passenger Agent, G.T.P.R. and G.T.P. Coast Steamship Co., Winnipeg, has been appointed General Passenger Agent, C. N.R. and G.T.P.R. from and including Port Arthur, Ont., to Lucern, B.C. Lucerne station on the C.N.R. is 263.1 miles west of Edmonton, Alta., and is west of the Yellowhead Pass. On the G.T.P.R., the station is 258 miles west of Edmonton. His office is at Winnipeg. S. Osborne Scott, heretofore General Passenger Agent, Western Lines, C.N. Rys., Winnipeg, has been appointed General Passenger Agent, C.N. Rys., and G.T.P. R., with territory Lucern, B.C., and west, including G.T.P. Coast Steamship Co. Office, Vancouver, B.C.

The following officers have been given jurisdiction over freight traffic on the Canadian National, Duluth, Winnipeg & Pacific, and Grand Trunk Pacific Rys., lines west of Duluth, Minn., Port Arthur and Armstrong, Ont., viz.:—A. E. Rosevear, heretofore General Freight Agent, G.T.P.R., has supervision of grain, grain products and live stock. J. M. Horn, heretofore General Freight Agent, C.N. R., has supervision of traffic not otherwise assigned. J. M. Macrae, heretofore Assistant General Freight Agent, C.N. R., has been appointed Assistant General Freight Agent of the three lines mentioned above. W. Hately, heretofore Assistant General Freight Agent, C.N.R., has been given supervision of the publication of tariffs and divisions of the three lines mentioned above.

### Co-ordination of Services, Grand Trunk Ry. and Canadian National Rys.

In addition to the appointments in the traffic departments of both lines, mentioned in Canadian Railway and Marine World for August, the following have been made since:—

E. F. Flinn, heretofore General Freight Agent, G.T.R., Lines West, will also act as General Western Freight Agent, Canadian National Rys.

R. F. Clark, General Agent, Freight Traffic, Canadian National Rys., continues in that capacity.

C. A. Gormaly, Foreign Freight Agent, G.T.R., Lines West, will also act in same capacity for Canadian National Rys.

J. D. McDonald, General Passenger Agent, G.T.R., Lines West, will also act

as General Western Passenger Agent, Canadian National Rys.

C. G. Orttenburger, General Agent, Passenger Department, G.T.R., will also act in same capacity for Canadian National Rys.

Detroit, Mich.—W. H. Spicer, heretofore District Freight Agent, G.T.R., Lines West, in charge of Michigan Territory, will also act for Canadian National Rys., vice F. A. Shaw, General Agent, transferred.

H. H. Hamill, General Agent, Freight Department, G.T.R., Lines West, will also act in same capacity for Canadian National Rys.

G. H. Burgis, General Agent, Passenger Department, G.T.R., will also act in same capacitiy for Canadian National Rys.

Duluth, Minn.—C. A. Skog, Division Freight and District Passenger Agent, Canadian National Rys., will also act as District Passenger Agent, Grand Trunk Pacific Ry.

Grand Rapids, Mich.—A. Z. Mullins, General Agent, G.T.R., Lines West, will also act in same capacity for Canadian National Rys., Freight Department.

London, Ont.—A. S. Munro, Commercial Agent, G.T.R., will also act in same capacity for Canadian National Rys.

Milwaukee, Wis.—H. W. Ploss, Commercial Agent, G.T.R., Lines West, will also act in same capacity for Canadian National Rys. Freight Department.

Minneapolis, Minn.—G. H. Brown, General Agent, G.T.R. Freight Department, Lines West, will also act for Canadian National Rys.

W. J. Gilkerson, General Agent, Passenger Department, G.T.R., will also act in same capacity for Canadian National Rys.

Montreal.—D. O. Wood, heretofore Traffic Manager, Export and Import Department, Canadian National Rys., Toronto, has been appointed General Foreign Freight Agent, Canadian National-Grand Trunk Rys., with office in Board of Trade Building, Montreal. He has general supervision of these railways export and import traffic, via Atlantic and Pacific Coast ports.

R. J. Foreman, heretofore Assistant to Vice President, Traffic, G.T.R., has been appointed Foreign Freight Agent, Canadian National-Grand Trunk Rys.

J. A. Wright, heretofore Assistant Foreign Freight Agent, G.T.R., has been appointed Assistant Foreign Freight Agent, Canadian National-Grand Trunk Rys.

St. Louis, Mo.—W. H. Burke, General Agent, G.T.R., Lines West, will also act in same capacity for Canadian National Rys. Freight Department.

St. Paul, Minn.—A. H. Davis, General Agent, Freight and Passenger Departments, Canadian National Rys., will also act in same capacity for the Grand Trunk Pacific Ry.

Saginaw, Mich.—C. E. Wagner, Commercial Agent, G.T.R., Lines West, will also act in same capacity for Canadian National Rys. Freight Department.

Stratford, Ont.—V. G. Snell, Division Freight Agent, G.T.R., Stratford, Ont., will also act in same capacity for Canadian National Rys.

Toronto.—F. R. Porter, heretofore Assistant General Freight Agent, G.T. Pacific Ry., Winnipeg, has been appointed Foreign Freight Agent, Canadian National-Grand Trunk Rys., Toronto.

Geo. Pepall, heretofore Assistant Foreign Freight Agent, G.T.R., has been appointed Assistant Foreign Freight Agent, Canadian National-Grand Trunk Rys.

F. G. Gould, heretofore City Freight Agent, G.T.R., will also act in the same capacity for Canadian National Rys.

Quebec.—P. Mooney, Assistant General Freight Agent, Canadian National Rys., will also act as General Agent, Freight Department, G.T.R.

### Arbitration of G.T.R. Stock Values.

It is expected that the arbitrators, Sir Walter Cassells, Right Hon. Sir Thos. White, and W. H. Taft, will hold an organization meeting in Montreal, in September, but no announcement has been made as to the date.

## Aerial Transportation Notes.

G. M. Crail has been appointed Air Station Superintendent at Summerland, B.C., under the Canadian Air Board.

Canadian Vickers Ltd., Montreal, will, it is said, install facilities for assembling seaplanes for the Canadian Air Board.

Two of the six air craft which are to constitute the equipment of the government flying station at Jericho Beach, B. C., are reported to have been delivered.

A London, Eng., cable states that during the first year of civil flying in England there were 38,954 flights, and that there was only one fatal accident.

An Ottawa press report of Aug. 18 stated that the report that aerial trips from Halifax, N.S., to the Pacific coast, to be made in 50 hours, would soon be started, were premature, and that no decision has been reached as to when the experimental trip would be made.

A Paris cablegram states the Germans will attempt to outdo every other nation in aerial transportation, and that airships are to be built 800 ft. long, 80 ft. wide and 100 ft. high; driven by 34 gasoline motors of from 150 to 200 h.p. each. Each airship will, it is said, be fitted with 300 cabins with two beds in each, and other accommodation similar to that on an ocean liner. Each ship will have an air speed of 68 miles an hour, with a radius for a non-stop flight of 8,000 miles, and will land in water, in which their speed will be 35 miles an hour. The flight time from Germany to New York will be approximately 50 hours.

The Civil Service Commission is about to appoint two air certificate examiners for the Air Board, at an initial salary of $2,400 a year, to be increased by $180 a year until a maximum of $3,300 a year has been reached. The duties of the examiners will be, under the direction of the Superintendent of Certificate Branch, Air Board, to examine, approve, and recommend the issue of licenses to air pilots, navigators, and engineers; to examine, approve, and recommend the issue of certificates of airworthiness of flying machines; to examine, approve, and recommend the issue of licenses to aerodromes; to assist in the selection of, and make recommendations in connection with air routes; to conduct examinations in the theory and practice of air pilotage and air navigation; and to perform other related work as required.

The U.S. aerial express no. 1, stated to be the largest seaplane on the American continent, arrived at Toronto, Aug. 11, from New York, on its way to Cleveland, Ohio. It covered the 984 miles between New York and Toronto in 9 hr. 24 min., the trip from Montreal occupying 3 hr. 22 min. The maximum speed attained was 115 miles an hour, with an average on the whole journey of about 100 miles an hour. She was built at the U.S. Navy yard, Philadelphia, and left there Aug. 6 for Atlantic City, and she left Toronto Aug. 12 for Cleveland. She is equipped with 2 motors of 400 h.p. each, has a wing spread of 110 ft. and is capable of lifting 6,200 lb. The cabin is divided into 7 compartments, the forward one being fireproof for mail; behind is the pilot's cabin, with accommodation for two persons; the third division is the main cabin, with accommodation for 8 persons, and behind this again is the observation section, with glass sides and seating accommodation for 6, and there is also a smoking compartment with accommodation for 7 passengers and a place for baggage. The machine was in charge of T. F. Dunn, President of the U.S. Aerial Express Co., and it is stated that a regular service will be inaugurated, probably early in 1921, calling at Toronto, Buffalo, Cleveland and Detroit.

## The Edmonton, Dunvegan & British Columbia and Allied Railways' Position.

The three railway companies in Alberta promoted by J. D. McArthur, of Winnipeg, are the Edmonton, Dunvegan & British Columbia Ry. Co., the Central Canada Ry. Co., and the Alberta & Great Waterways Ry. Co. Of these the first named has built a railway from Edmonton City boundary to Spirit River, 360.8 miles, with a branch from Spirit River to Grand Prairie, 54.8 miles; the Central Canada Ry. Co. has built a line from McLennan to Peace River, 49.8 miles, while the Alberta & Great Waterways Ry. Co. has built a line from Carbondale for about 290 miles, approximately to Fort McMurray, the E. D. & B.C. Ry. being the main stem. After negotiations, which had been in progress for a considerable time, the Alberta Government has taken over the Alberta & Great Waterways Ry. and the other two lines have been, without a change of ownership, given over for operation to the C.P.R. for five years. The members of the Alberta Government have been appointed directors of the Alberta & Great Waterways Ry. Co., with the Premier as President. An arrangement has been made under which J. D. McArthur may buy the line within seven years on repayment of the money expended by the government during its period of control.

The other two lines have been taken over by the C.P.R. under an operating agreement for five years. D. C. Coleman, Vice President, Western Lines, C. P.R., is reported to have said in a recent interview:—"I should like to underline the portion of the Premier's statement which describes the agreement as covering an operation arrangement only. The C.P.R. has not acquired the stock of the company, but has only undertaken to manage the property for a term of years on behalf of the owners and those interested through advances and guarantees. The election of a new board of directors was agreed to in order that the C.P.R. should have full control of the operating and the reconstruction of the road, subject, of course, to proper scrutiny of all expenditure by representatives of the Alberta Government, and by others who have an interest in the property. The agreement also embodies an option to purchase, which may be exercised by the C.P.R. at any time during the life of the agreement."

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolate accuracy. Anyone who may notice any error in our aunouncements will confer a favor by advising us.

Canadian Government Merchant Marine Ltd.—F. G. WOOD, heretofore General Agent, Freight Department, Canadian National-Grand Trunk Rys., Pittsburg, Pa., has been appointed Ontario Freight Agent, Canadian Government Merchant Marine Ltd., vice G. E. Bunting, whose appointment as Representative for Australia and New Zealand, Auckland, New Zealand, was announced in a recent issue. Office, Toronto.

Canadian National Rys.—L. E. AYER, heretofore General Agent, St. Louis, Mo., has been appointed General Agent, Freight Department, Kansas City, Mo.

J. H. CORCORAN has been appointed General Travelling Agent. Office, Moncton, N.B.

J. H. DUFF has been appointed Superintendent, Edmundston, N.B., vice W. F. Sawyer, transferred.

J. IRWIN, heretofore Superintendent, Calgary, Alta., has been appointed Superintendent, Edmonton Division, Western District, vice W. E. Robert, resigned. Office, Edmonton, Alta.

J. E. LeBLANC, heretofore District Passenger Agent, Montreal, has been appointed District Passenger Agent, Quebec, Que., and his former position, and that of Assistant General Passenger Agent, Quebec, Que., have been abolished. Office, 7 Dufort St.

W. F. SAWYER, heretofore Assistant Superintendent, Edmundston, N.B., has been appointed Assistant Superintendent, St. Maurice Division, Quebec, Que.

R. M. STUBBS has been appointed City Freight Agent, St. Paul, Minn.

The Cochrane Division, extending from O'Brien to Cochrane, not including O'Brien; Cochrane to Hearst; Hearst to Grant; Grant to Armstrong, including Armstrong, W. B. WAY, Superintendent, Cochrane, Ont., has been detached from the Central District, Western Lines, from Aug. 1, and incorporated into the Quebec District, Eastern Lines.

Canadian National Rys.-Grand Trunk Pacific Ry.—The Minister of Railways and Canals, as Receiver G.T.P.R. Co., gave notice on Aug. 23 that in pursuance of order in council 1595, and with a view of effecting every economy by means of co-ordination of organization, the management of the G.T.P.R., for the Receiver, had been placed under the board of directors of the Canadian National Rys. and that W. P. HINTON, theretofore Vice President and General Manager, G.T.P.R. Co., having resigned as General Manager, had been appointed Consulting Officer to the Receiver, with headquarters at Winnipeg.

D. B. Hanna, President, Canadian National Rys., issued circulars Aug. 23 stating that in pursuance of authority issued by the Receiver, under which the management of the G.T.P. Ry. had been placed under the board of directors of the Canadian National Rys., the jurisdiction of the following officers of the Canadian National Rys. had been extended over the G.T.P.R. lines, viz., A. J. MITCHELL, Vice President in charge of Accounts and Finance; R. C. VAUGHAN, Assistant to President; M. H. MacLEOD, Vice President in charge of Operating, Maintenance ond Construction; S. J. HUNGERFORD, Assistant to Vice President in charge of Operating, Maintenance and Construction; C. A. HAYES, Vice President in charge of Traffic; GERARD RUEL, General Counsel.

The jurisdiction of the following Canadian National Rys. officials has been extended over the Grand Trunk Pacific Railway and the Grand Trunk Pacific Steamship Co.:—A. E. WARREN, General Manager, Western Lines, Winnipeg; H. H. MELANSON, Passenger Traffic Manager, Toronto; GEO. STEPHEN, Freight Traffic Manager, Toronto; R. CREELMAN, Assistant Passenger Traffic Manager, Winnipeg; W. G. MANDERS, Assistant Freight Traffic Manager, Winnipeg; E. LANGHAM, General Purchasing Agent, Toronto.

D. O. Wood,
General Foreign Freight Agent, Canadian National-Grand Trunk Rys.

H. H. BREWER, heretofore General Superintendent, G.T.P.R., Winnipeg, has been appointed Assistant General Manager, C.N.R. and G.T.P.R., with jurisdiction over C.N.R. lines west of Armstrong, Ont., and west of and including Port Arthur, Ont., to Lobstick Jct., Alta., also over G.T.P.R. lines from Winnipeg to Edmonton, Alta., inclusive. Office, Winnipeg.

J. R. CAMERON, heretofore Assistant General Manager, C.N.R., Winnipeg, has been appointed Assistant General Manager, C.N.R. and G.T.P.R., with jurisdiction over C.N.R. lines west of Lobstick Jct., Alta., and over G.T.P.R. lines west of Edmonton, Alta., including C.N.R. Vancouver Island lines. Office, Vancouver, B.C.

W. E. DUPEROW; heretofore General Passenger Agent, G.T.P.R. and G.T.P. Coast Steamship Co., Winnipeg, has been appointed General Passenger Agent, with jurisdiction over the passenger traffic of the Canadian National, Duluth Winnipeg & Pacific and Grand Trunk Pacific Rys., lines west of Duluth, Minn., Port Arthur and Armstrong, Ont., and east of Lucern, B.C. Office, Winnipeg.

W. HATLEY, heretofore Assistant General Freight Agent, C.N.R., Winnipeg, will have supervision of the publication of tariffs and divisions of freight traffic, of the Canadian National, Duluth Winnipeg and Pacific and Grand Trunk Pacific Rys., lines west of Duluth, Minn., Port Arthur and Armstrong, Ont. Office, Winnipeg.

J. M. HORN, heretofore General Freight Agent, C.N.R., Winnipeg, will have supervision of freight traffic, other than grain, grain products and live stock, on the Canadian National, Duluth Winnipeg and Pacific and Grand Trunk Pacific Rys., lines west of Duluth, Minn., Port Arthur and Armstrong, Ont. Office, Winnipeg.

J. M. MACRAE, heretofore Assistant General Freight Agent, C.N.R., Winnipeg, has been appointed Assistant General Freight Agent, Canadian National, Duluth Winnipeg and Pacific, and Grand Trunk Pacific Rys., lines west of Duluth, Minn., Port Arthur and Armstrong, Ont. Office, Winnipeg.

A. E. ROSEVEAR, heretofore General Freight Agent, G.T.P.R., Winnipeg, will have supervision of grain, grain products and live stock traffic, on the Canadian National, Duluth Winnipeg and Pacific and Grand Trunk Pacific Rys., lines west of Duluth, Minn., Porth Arthur and Armstrong, Ont. Office, Winnipeg.

S. OSBORNE SCOTT, heretofore General Passenger Agent, Western Lines, Canadian National Rys., Winnipeg, has been appointed General Passenger Agent, with jurisdiction over the passenger traffic of the Canadian National, Duluth Winnipeg and Pacific and Grand Trunk Pacific Rys. in the territory Lucerne, B.C., and west, including Grand Trunk Pacific Steamship Co. Office, Vancouver, B.C.

A. A. TISDALE, heretofore Assistant to Vice President and General Manager and also Purchasing Agent, G.T. Pacific Ry., is reported to have been appointed Assistant to the General Manager, Western Lines, Canadian National Rys., and G.T. Pacific Ry., Winnipeg.

Grand Trunk Pacific Ry.—See Canadian National Rys.-Grand Trunk Pacific Ry.

Canadian National Rys.-Grand Trunk Ry.—G. H. BROWN, Commercial Agent, G.T.R., Minneapolis, Minn., has also been appointed General Agent, Freight Department, C.N.R., there.

J. H. BURGIS, General Agent, Passenger Department, Western Lines, G.T.R., Detroit, Mich., will also act in the same capacity there for the C.N.R.

W. H. BURKE, Commercial Agent, G.T.R., St. Louis, Mo., has also been appointed General Agent, Freight Department, C.N.R., there.

E. F. FLINN, General Freight Agent, Western Lines, G.T.R., Chicago, Ill., has also been appointed General Western Freight Agent, C.N.R., there.

R. J. FOREMAN, heretofore Assistant to Vice President (Traffic), G.T.R., Montreal, has been appointed Foreign Freight Agent, Canadian National-Grand Trunk Rys. Office, Montreal.

W. J. GILKERSON, General Agent, Passenger Department, Western Lines, G.T.R., Minneapolis, Minn., will also act in the same capacity there for the C.N.R.

C. A. GORMALY, heretofore Division Freight Agent, G.T.R., Chicago, Ill., has been appointed Foreign Freight Agent, Western Lines, G.T.R., and will also act

in the same capacity for the C.N.R., his former position being abolished. Office, Chicago.

F. G. GOULD, City Freight Agent, G. T.R., Toronto, will also act in the same capacity for the C.N.R.

H. H. HAMILL, General Agent, Freight Department, G.T.R., Detroit, Mich., will also act in the same capacity there for the C.N.R.

J. D. McDONALD, General Passenger Agent, Western Lines, G.T.R., Chicago, Ill., has also been appointed General Western Passenger Agent, C.N.R., there.

P. MOONEY, Assistant General Freight Agent, C.N.R., Quebec, Que., has also been appointed General Agent, G. T.R., there.

A. Z. MULLINS, Division Freight Agent, G.T.R., Grand Rapids, Mich., has also been appointed General Agent, Freight Department, C.N.R., there.

A. S. MUNRO, Commercial Agent, G. T.R., London, Ont., will also act in the same capacity for the C.N.R.

C. G. ORTTENBURGER, General Agent, Passenger Department, Western Lines, G.T.R., Chicago, Ill., will also act in the same capacity there for the C.N.R.

G. PEPALL, Assistant Foreign Freight Agent, G.T.R., Toronto, will also act in the same capacity there for the C.N.R.

H. W. PLOSS, Commercial Agent, G. T.R., Milwaukee, Wis., has also been appointed General Agent, Freight Department, C.N.R., there.

F. R. PORTER, heretofore Assistant General Freight Agent, Grand Trunk Pacific Ry., Winnipeg, has been appointed Foreign Freight Agent, Canadian National-Grand Trunk Rys., Toronto.

V. G. SMITH, Division Freight Agent, G.T.R., Stratford, Ont., will also act in the same capacity for the C.N.R. there.

W. H. SPICER, District Freight Agent, G.T.R., Detroit, Mich., will also act in the same capacity there for the C.N.R., vice F. A. Shaw, General Agent, Freight Department, C.N.R., transferred.

C. E. WAGNER, Commercial Agent, G.T.R., Saginaw, Mich., will also act in the same capacity there for the C.N.R.

D. O. WOOD, heretofore Traffic Manager, Export and Import Freight Department, C.N.R., Toronto, has been appointed General Foreign Freight Agent, Canadian National-Grand Trunk Rys., with general supervision of the export and import traffic of these railways through Atlantic and Pacific ports, and his former position has been abolished; A. F. Read, General Foreign Freight Agent, G.T.R., having, at his own request, been relieved of official duties, on account of ill health, and granted leave of absence until Dec. 31, when he will be superannuated. Office, Board of Trade Building, Montreal.

J. A. WRIGHT, Assistant Foreign Freight Agent, G.T.R., Montreal, will also act in the same capacity for the C.N.R.

The Canadian Nationals Rys. Passenger Tariff Bureau has been transferred to new offices in the G.T.R. Passenger Traffic Department, McGill St., Montreal, and for the present R. F. Macleod, Assistant to Passenger Traffic Manager, C. N.R., continues in charge of, and has immediate supervision over, the C.N.R. Passenger Tariff Bureau.

Canadian Pacific Ry.—W. S. HALL, heretofore Trainmaster, Red Deer, Alta., has been appointed Superintendent, Cranbrook Division, British Columbia District, vice C. S. Maharg, transferred to Vancouver. Office, Cranbrook.

R. A. McADAM has been appointed Master Mechanic, Smiths Falls Division, Quebec District, vice C. A. Wheeler. Office, Smiths Falls, Ont.

C. S. MAHARG, heretofore Superintendent, Cranbrook Division, British Columbia District, Cranbrook, has been appointed Superintendent, Vancouver Division, British Columbia District, vice J. L. Jamieson, whose appointment as Superintendent, Edmonton Division, Alberta District, Edmonton, was announced in our last issue. Office, Vancouver.

Chicago & North Western Ry.—B. H. BENNETT has been appointed General Canadian Agent, with office at Toronto, which position he occupied prior to the taking over of United States railways by its Federal Government. Recently he has been Travelling Agent, with headquarters at DeKalb, Ill.

Cunard Line, Anchor-Donaldson Line, Anchor Line.—F. C. TURNER, heretofore Travelling Passenger Agent, Robert Reford Co., Montreal, has been appointed Travelling Passenger Agent, Montreal.

Edmonton, Dunvegan & British Columbia Ry., Central Canada Ry.—LT. COL. J. G. REID, heretofore in charge of construction of C.P.R. Lanigan North Branch, has been appointed Chief Engineer and Superintendent, in charge of maintenance and operation.

F. W. STERLING, District Freight Agent, C.P.R., Edmonton, Alta., has also been appointed District Freight Agent, E.D. & B.C.R. & C.C.R. there.

Grand Trunk Ry.—J. CAMERON, heretofore Chief of Tariff Bureau, Chicago, Ill., has been appointed Assistant General Freight Agent, Western Lines. Office, Chicago, Ill.

J. M. SPARLING, heretofore chief clerk to Vice President (Traffic), has been appointed Assistant to Vice President (Traffic), vice R. J. Foreman, promoted. Office, Montreal.

H. C. SWARTZ, Master of Bridges, and Buildings, Southern Division, St. Thomas, Ont., has been appointed Superintendent of Bridges and Buildings, Eastern Lines, as reported in our last issue, vice J. H. Johnston, assigned to other duties. Office, Montreal.

L. A. VERONEAU has been appointed Chief of Tariff Bureau, Western Lines, Chicago, Ill., vice J. Cameron, promoted.

Pacific Great Eastern Ry. — A. B. BUCKWORTH, for some time representing the interests in British Columbia of E. R. C. Clarkson & Sons, auditors, Toronto, and latterly in charge of the liquidation of the Spokane & British Columbia Ry., has been appointed Manager, P.G.E.R., which is owned by the British Columbia Government. Office, Vancouver, B.C.

R. WILSON, heretofore Auditor, has been appointed Assistant General Manager and Comptroller. Office, Vancouver, B.C.

## Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alaska Ry.—A recent epidemic of influenza disorganized the construction forces on the northern division of this U.S. Government work and delayed it considerably.

Esquimalt & Nanaimo Ry.—A press report states that a contract has been let to G. F. Wilson, Nanaimo, B.C., for the erection of a station building there, at an estimated cost of $25,000. The specifications are said to call for a frame building 131 ft. x 36 ft., finished outside in brick veneer and roughcast, on a concrete basement. The central portion of the building will be two storeys, the upper story to be set apart as rooms for employes.

Owing to some delays in the approval of plans for the substructure of the proposed new bridge at Johnston St., Victoria, the city council has not yet been able to invite tenders for the work. The bylaw provides for construction starting on Sept. 1, but it was stated Aug. 6 that a contract could not be let in the time. It was said, however, that the city engineer would put some men at work on certain fills necessary for the bridge and its approaches. The bascule section of the bridge is being provided by the E. & N. Ry. Co. (June, pg. 297.)

Grand Trunk Pacific Ry.—In an interview, on his return to Ottawa on Aug. 8, from a trip over the Canadian National Rys. and the G.T. Pacific Ry., the Minister of Railways is reported to have said that the G.T.P.R. will require a considerable expenditure to be made on it to bring its roadbed up to standard. The work would include the rebuilding of a number of bridges and the filling in of a number of trestles.

While at Prince Rupert, B.C., July 23, the Minister is reported to have expressed surprise at the condition of the terminal facilities there, and to have informed the citizens at a public meeting that he would take up the question of the provision of adequate terminals with Canadian National Rys. officials and have the work proceeded with as soon as possible. (Aug., pg. 248.)

Kettley Valley Ry.—We are officially advised that a contract has been let to W. P. Salvus, Penticton, B.C., for grading a line from South Penticton to the head of Dog Lake, about two miles. The work is without any feature of engineering interest. This is the first section of a line to be built from Penticton southerly to near the International Boundary, for which an agreement was entered into between the company and the British Columbia Government. The second section of the line is to extend from the south end of Dog Lake to a new townsite near Fairview, but we are officially advised that it is not likely this will be put under construction this year. In order to provide for the settlers in the district the company has bought from the C.P.R. Co. the steamship York, to be transferred to Dog Lake and used in hauling freight and towing barges. Provision is made in the agreement with the B.C. Government for the construction at a later date of a line along one side of the lake to connect the two sections of line. (Aug., pg. 428.)

Northern Light Rys. Co.—A press report states that negotiations are in progress for placing the bonds of this company, which proposes to build light railways in the northern mining camps of Ontario, to link them up with the Timiskaming & Northern Ontario Ry. Another report states that surveys have been completed for a line from Elk Lake to Gowganda, and that surveys are being made for a line from Swastika to the Kirkland Lake and the Larder Lake areas. (Aug., ug. 428.)

**Spokane International Ry.**—A press report states that improvements estimated to cost about $300,000 have been authorized to be made on this line during the next 12 months. The line extends from Spokane, Wash., to the International Boundary at Eastport, Wash., on the U.S. side, and at Kingsgate on the Canadian side, with a C.P.R. branch line.

**Timiskaming & Northern Ontario Ry.** A deputation of miners waited upon the Ontario Government recently to urge the construction of a branch line from Swastika to the Kirkland Lake and Larder Lake mining districts, about 22 miles. The Premier is reported to have said in reply that the government must be assured by investigation that the possibilities of traffic to and from the mines would warrant the construction of such a line. (July, pg. 387.)

## Occupation of Toronto New Union Station Offices.

The Toronto Terminals Ry. Co., which is building the new union station, has had its offices in the building for some time past, U. E. Gillen, General Manager; J. R. Ambrose, Chief Engineer, and other officials being located in the center wing on the fourth floor. The whole of the eastern wing will be devoted to post office purposes, the second, third and fourth floors in the western wing will be devoted to offices, and there will also be some other offices in the center wing, on the third and fourth floors. Final arrangements for the allotment of the office space between the different railways have not been completed. In the meantime it is said that in the western wing the second floor will be divided between the C.P.R. and G.T.R. and possibly the Canadian National Rys., the C.P.R. will have the whole of the third floor, and the fourth floor will be divided between the Canadian National Rys. and the G.T.R.

The following C.P.R. officials will remove their offices Sept. 15, from the old union station building to the new one, viz.:—H. C. Grout, General Superintendent; W. M. Neal, Assistant General Superintendent; W. Tansley, Car Service Agent; F. Ronaldson, Master Mechanic; Lt. Col. Blair Ripley, C.B.E., D.S.O., District Engineer; F. M. Rutter, Superintendent, Bruce Division; H. J. Humphrey, Superintendent, Trenton Division; W. B. Howard, District Passenger Agent; M. H. Brown, Division Freight Agent; S. Wertheim, Superintendent, Sleeping, Dining and Parlor Car Department; H. Eisdale, Paymaster; J. W. Schliehauf, Claims Agent; E. Bury, Commissary Agent.

The following G.T.R. officials will move from the old union station to the new one about Sept. 15:—C. H. Bowker, General Superintendent; W. S. Wilson, Superintendent of Transportation; G. A. Stokes, Superintendent, Toronto Terminals; E. G. Hewson, Division Engineer; L. I. Stone, Assistant Engineer, Toronto Terminals; G. A. Mitchell, Superintendent, Bridges and Buildings; H. Ferguson, Superintendent of Tack, also W. H. Patton, Superintendent of Signals.

The following Canadian National officials will also move about Sept. 15, from their present uptown offices to the new union station, where they will occupy offices in the north section of the fourth floor, viz.:—General Superintendent's organization, Superintendent's organization, Supervisor of Boarding Cars department, and the telegraph office. The traffic department will probably move from the Royal Bank Building to the second floor of the new union station.

**Cornwall Interswitching Arrangements.** The Board of Railway Commissioners, in the matter of the proposed cancellation by the C.P.R., G.T.R. and New York Central Rd. of the existing interswitching arrangements with Cornwall St. Ry., Light & Power Co., which were to take effect Aug. 2, ordered on July 30 that the portions of the steam railway companies schedules which provided for the abrogation of the arrangements be suspended until further order.

## Grand Trunk Railway Construction, Betterments, Etc.

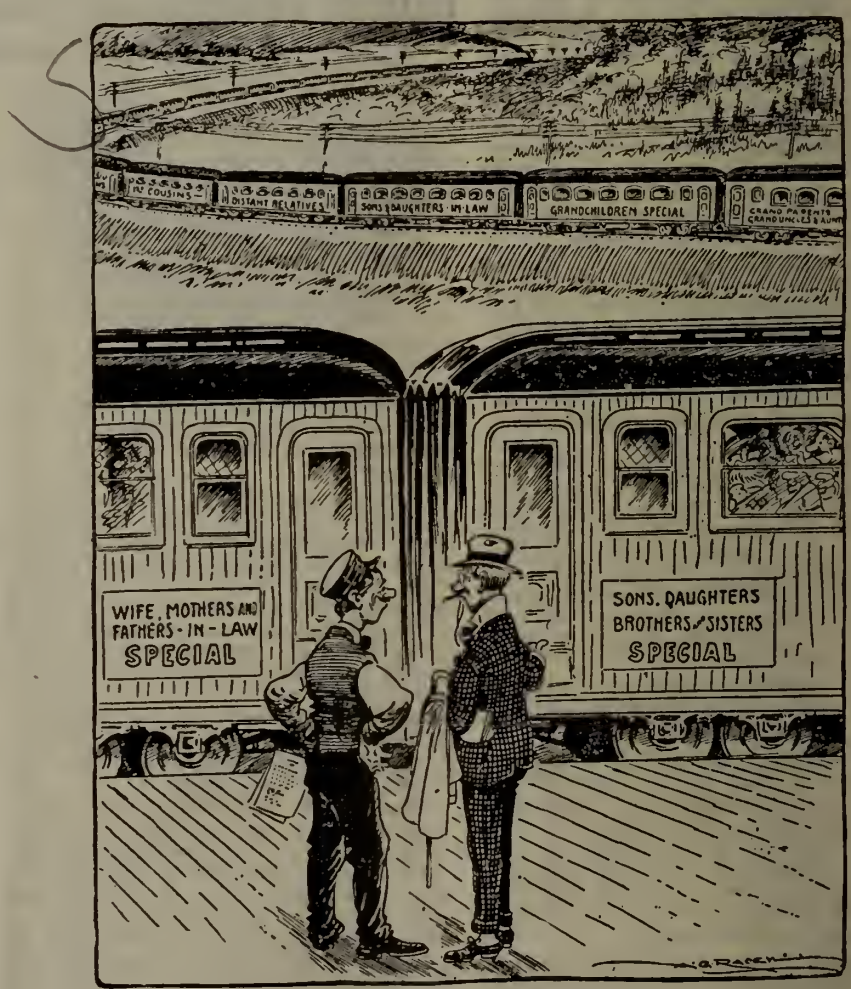
**G.T.R.-Canadian National Rys. Connections.**—The Board of Railway Commissioners has authorized the G.T.R. to make connection with the Canadian National Rys. on Lot. 10, Con. 1, Brighton Tp., Ont., and on Lot 21, Con. 2, Richmond Tp., near Napanee, Ont.

**East Toronto Bridge Rebuilding.**—The Board of Railway Commissioners has authorized the G.T.R. to rebuild, by Sept. 30, 1921, the bridge over its tracks at Main St., Toronto. The bridge is near York station, in the old municipality of East Toronto. The new structure is to be 46 ft. wide, with sidewalks 10 ft. wide on each side of the bridge, the bridge to be decked with cement. The City of Toronto is to pay the cost of surfacing the bridge and approaches, and also of making the bridge of a greater width than that named in the order.

**Palmerston, Ont., Terminals.**—A press report states that additional land has been secured at Palmerston, Ont., for a car repairing plant. The bridge and building department is reported to be clearing the side and getting things in order for the immediate building of the shop.

**London Track Elevation.**—The report of the City Engineer on the proposed elevation of the G.T.R. tracks in the city is under consideration by the City of London's crossings committee. The report is said to recommend the placing of subways in the east end of the city, at Adelaide and Rectory Sts., and an overhead walkway for pedestrians at Egerton St. The cost of the subways, it is suggested, be borne 40% by the city and 60% by the railway. The position of affairs in the west end is not dealt with, as it is expected that the Canadian National Rys. will take steps, at an early date, to erect station in conjunction with the Canadian Pacific Ry. and the London & Port Stanley Ry. (Aug., pg. 436.)

**Komoka Bridge Rebuilding.** — The Board of Railway Commissioners has authorized the G.T.R. to rebuild the overhead bridge carrying the highway over its line at mile 127.98, about 1.75 miles east of Komoka, Ont., on the line between London and Sarnia.




**ECONOMY EXTRAORDINARY.**

Taxpayer—Does that long train contain tourists or immigrants?

Station Master—Neither! Only an Ontario Farmer's Economy Government Minister on an official trip. A. G. Racey in Montreal Star.

EDITOR'S NOTE.—Hon. Beniah Bowman, M.L.A., Minister of Lands and Forests, in the Ontario Government, made a Northern Ontario tour recently, in the government's official car Whitney, accompanied by members of his family and several relatives, which caused considerable comment.

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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.

ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of the issue in which it is to appear.

TORONTO, CANADA, SEPTEMBER, 1920.

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# Application for Increases in Freight and Passenger Rates.

Canadian Railway and Marine World for August contained the application made by the Railway Association of Canada to the Board of Railway Commissioners for an increase in freight rates. The following additional application, including also passenger, sleeping and parlor car, excess baggage and milk rates, was addressed to the board by the association on July 28, over the signatures of Howard G. Kelley, President, and C. P. Riddell, General Secretary:—

"Referring to the application dated July 9, made by this association on behalf of the railway companies members thereof, and of all other railway companies within the jurisdiction of the board, for authority to make a general advance of 30% in the tolls at present charged for the carriage of freight by the said companies. It was set out that the increase in rates sought by that application was based entirely on present costs, and did not take into consideration any increase in wages or costs which might occur thereafter. Accordingly, we desire to take the earliest opportunity to draw the board's attention formally to the award of the United States Labor Board, decision 2, dated at Chicago July 20th, which provides for a very large increase in wages to be paid to all classes of employes on railways in the United States. Demands have already been made upon the various Canadian railway companies for the application to their employes of the same scale of advances, to take effect as from May 1 last. If such demands should be granted it would involve a very large additional annual outlay, which would necessitate a corresponding increase in the revenues of the companies.

"Accordingly, we have thought it advisable to bring these facts to the attention of the board, and to notify it that at the hearing, evidence will be submitted as to the additional expense involved if these demands are to be met, in order that the board may be in a position to grant authority to the railway companies to make such additional increases in freight and passenger rates as it may deem to be necessary to meet the altered conditions. After careful consideration, the representatives of the Canadian railway companies are of the opinion that if the increase in wages granted in Canada is to correspond with the increase recommended in the United States it will cost the Canadian companies an additional $60,000,000 a year, and they will be unable to meet the situation without rate increases at least equal to those requested by the U.S. roads and now under consideration by the Interstate Commerce Commission. The Canadian companies will, therefore, on the hearing of the present application, request the board to authorize rate increases (in addition to the 30% required to take care of present conditions) at least equal to those requested in the U.S., which are as follows:

"Passenger fares increased 20%, minimum not less than 10c.

"Excess baggage rates 20%.

"Surcharge on sleeping and parlor cars 50% of charge for space occupied.

"Milk 40% (being 30% to equalize the increase asked for in original application and 10% additional):

"Freight and switching revenues to be increased sufficiently to yield the balance of the revenue required to meet the increased operating expenses due to the wage increase herein referred to, in addition to the percentage increase already proposed in this proceeding—such additional increase in the case of the U. S. roads being estimated at 10%

"On the hearing the Canadian companies will also urge that the board for the current year authorize such rates as will assure to the companies sufficient revenue to meet all increases on account of wages or materials properly chargeable to the operating expenses of that year. Copies of this letter have been sent to all the parties to whom the original application was sent."

The hearing on the application opened, before the Board of Railway Commissioners, in Ottawa, Aug. 10, the taking of evidence and arguments continuing until Aug. 21, when judgment was reserved. The case for the Railway Association of Canada was presented by F. H. Phippen, K.C., and for the individual railways by E. W. Beatty, K.C., President, and W. N. Tilley, K.C., Consulting Counsel, C.P.R.; D. B. Hanna, President, Canadian National Rys.; H. G. Kelley, President, G.T.R. and G.T. Pacific Ry.; and W. C. Chisholm, General Solicitor, G.T.R. Among the principal witnesses for the railways were W. J. Moule, Assistant Comptroller, C. P.R.; A. J. Hills, Assistant to President, Canadian National Rys.; J. B. McLaren, General Auditor, G.T.R.; G. D. Wadsworth, G. F. and P. A., Quebec Central Ry.; J. H. Coburn, Secretary, Essex Terminal Ry.

Among those who opposed the application were the following:—Nova Scotia Government, represented by R. E. Finn; Maritime Province interests, by E. M. Macdonald; Manitoba Government, by H. J. Symington; Saskatchewan Government and National Dairy Council, by D'Arcy Scott; City of Toronto, by G. R. Geary, K.C.; Canadian Manufacturers Association, by A. C .McMaster; United Farmers of Ontario, by G. Waldron; Canadian Wholesale Grocers Association, by Hugh Blain; Winnipeg and other western boards of trade, by J. B. Coyne; Canadian Retail Coal Association, by J. M. Daly; Eastern Live Stock Association, by C. W. Gearney; Western Live Stock Association, by J. L. Anderson; Canada Lumbermen's Association, by F. Hawkins, British Columbia Shingle and Lumber Manufacturers, by R. H. H. Alexander; Mountain Lumbermen's Association, by I. R. Poole. A number of individual interests were also represented.

**Victoria Bridge, Montreal, Damaged.** Considerable damage was done to the G.T.R. Victoria Bridge over the St. Lawrence River at Montreal, Aug. 22. A fire was discovered in the planking of the section devoted to general traffic, and before it could be extinguished about a third of the planking was partially or entirely destroyed. Traffic was not interrupted on the steam and electric railway sections, but vehicular traffic was stopped. Repair work was started the next day, and it was expected to have it completed by Aug. 30.

**C.P.R. Cartage.**—It was announced by the C.P.R. freight department in Montreal, recently, that its cartage will continue to be done by the Dominion Transport Co.

# Mainly About Railway People Throughout Canada.

Joseph Orville Adams, whose appointment as General Eastern Freight Agent, Canadian National-Grand Trunk Rys., New York, was announced in our last issue, was born at London, Ont., Nov. 21, 1872, and entered railway service Nov. 14, 1887, since when he has been to Apr. 30, 1902, messenger, clerk and chief billing clerk, G.T.R., London, Ont.; May 1, 1902 to Oct. 8, 1903, chief billing clerk, and chief clerk, Import Freight Department, G.T.R., Portland, Me.; Oct. 9, 1903 to Mar. 31, 1904, Agent, Central Vermont Ry., Willematic, Conn.; Apr. 1, 1904, to Feb. 29, 1908, Agent, same road, Barrie, Vt.; Mar. 1, 1908 to Jan. 1, 1915, General Agent, same road, Burlington, Vt.; Feb. 1, 1915, to June 14, 1917, Travelling Freight Agent, same road, Boston, Mass.; June 15, 1917, to Sept. 14, 1919, Commercial Agent, same road, New York; Sept. 14, 1919 to July 1920, General Eastern Freight Agent, G.T.R., New York.

Leonard E. Ayer, who has been appointed General Agent, Canadian National-Grand Trunk Rys., Kansas City, Mo., was born at Henderson, Ia., Jan. 11, 1877, and entered railway service, Apr. 9, 1898, since when he has been, to Sept. 1898, student station work, Burlington & Missouri River Rd. in Nebraska, Saronville and Fairmont, Neb.; Sept. 1898 to Nov. 1900, clerk, local freight office, Burlington Route, Sioux City, Ia.; Nov. 1900 to Apr. 1902, station ticket clerk, Chicago & North Western Ry., Sioux City, Ia.; Apr. 1902 to Nov. 1903, station ticket clerk, same road, Ashland, Wis.; Nov. 1903 to Nov. 1907, Contracting Agent, Duluth, South Shore & Atlantic Ry., Duluth, Minn.; Nov. 1907 to Aug. 1908, agent, Minnesota & International Ry., Tenstrike, Minn.; Sept. 1908 to Mar. 1911, City Ticket Agent, Duluth, Misabe & Northern Ry., Duluth, Minn.; Mar. 1911 to Apr. 1916, chief clerk, Canadian Northern Ry., Chicago, Ill.; Apr. 1916 to Sept. 1917, Commercial Agent, same road, St. Louis, Mo.; Sept. 1917 to Aug. 2, 1920, General Agent, C.N.R., St. Louis, Mo.

George Murray Baillie, whose appointment as Assistant Superintendent, London Division, Ontario District, C.P.R., Windsor, Ont., was announced in our last issue, was born at West St. John, N.B., Mar. 31, 1879, and entered C.P.R. service Nov. 25, 1895, since when he has been, to 1896, messenger, West St. John, N.B.; 1897 to 1898, car checker, West St. John, N.B.; 1899, freight clerk, Owen Sound, Ont.; 1900 to 1903, freight clerk, St. John, N.B.; 1904, freight clerk, Montreal; 1905, night agent, West St. John, N.B.; 1906 to 1918, agent, Fairville, N.B.; 1919 to May 1920, assistant agent, West St. John, N.B.

George Hugh Brown, who has been appointed General Agent, Freight Department, Canadian National-Grand Trunk Rys., Minneapolis, Minn., was born at West Lebanon, N.H., Oct. 17, 1876, and entered G.T.R. service Jan. 2, 1882; since when he has been, to Jan. 1, 1898, messenger, stenographer, clerk, Chicago, Ill.; Jan. 1, 1898, to July 1, 1915, Soliciting Freight Agent, Chicago; July 1, 1915, to July 1, 1918, Commercial Agent, Omaha, Neb.; July 1 to Nov. 1, 1918, Tariff Inspector, Chicago; Nov. 1, 1918, to Jan. 1, 1920, Travelling Representative, Chicago; Jan. 1 to Aug. 2, 1920, Commercial Agent, Minneapolis, Minn.

Arthur Bernard Buckworth, who has been appointed General Manager, Pacific Great Eastern Ry., Vancouver, B.C., was born at Birmingham, Eng., Mar. 2, 1876, entered transportation service in 1896, and was to 1897 engaged in loading freight cars for C.P.R. at Vancouver, B. C.; 1898 to 1906, ticket agent, C.P.R., and land agent, Great Northern Ry., Ymir, B.C.; 1906 to 1912, engaged in timber contracting for railways; 1912 to 1918, representative at Vancouver, for E. R. C. Clarkson & Sons, Toronto, trustees and liquidators; 1918 to Aug. 1, 1920, Manager, under E. R. C. Clarkson & Sons, Spokane & British Columbia Ry., Vancouver, B.C.

Sir George Bury, formerly Vice President, C.P.R., Montreal, and latterly President and General Manager, Whalen Pulp & Paper Co., Vancouver, B.C., who resigned the latter position recently, left Montreal, Aug. 12, for Cuba. An unconfirmed press report states that he has been asked by the Mexican Government to undertake the management of the reconstruction of the Mexican National Rys., and that this matter will have his attention on his return to Canada during September.

A. E. Warren,
General Manager, Western Lines, Canadian National Ry. and Grand Trunk Pacific Ry.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, spent August, with his family, at Brackley Beach, P.E.I.

W. G. Chace, Chief Engineer, Greater Winnipeg Water District, from 1913 to June last, when he resigned to organize Research & Development, Ltd., a Manitoba corporation purposing to initiate new industries in that province, based on its resources, and on such other commercial enterprises as might offer opportunity of success, has been appointed President and Manager, Canadian Lock Joint Pipe Co., Toronto.

Mrs. D. C. Coleman, wife of the Vice President, Western Lines, C.P.R., who was spending part of the summer with her two boys, aged 8 and 5, at Lake Windermere Camp, near Inverness, B.C., was drowned while bathing there Aug. 24. It appears that, contrary to her usual practice, she went for a swim in the early morning, following a horseback ride, and when about 50 ft. from the shore appeared to be in difficulties, and called for assistance. This was immediately rendered by a man in a canoe, but at a critical moment the canoe turned over, and Mrs. Coleman sank in deep water. She was an untiring worker in phinanthropic work, and engaged a great deal in outdoor sports. On the day prior to her death, she took a principal part in the reception to the Imperial Press Conference delegates.

A. H. Davis, who has been appointed General Agent, Freight Department, Canadian National-Grand Trunk Rys., St. Paul, Minn., was born Jan. 14, 1876, and entered transportation service Nov. 12, 1890, with S. Cunard & Co., General Agents, Allan Line, Halifax, N.S., and transferred to C.P.R. steamship service on its organization, and was to May 1910 chief clerk at St. John, N.B., and Quebec, Que. In May, 1910, he was appointed Passenger Agent, Canadian Northern Steamships Ltd., Montreal, and on the sale of that company's ships to the Cunard Co. in Feb., 1915, he was appointed City Passenger Agent, Canadian Northern Ry., Winnipeg, and was subsequently appointed General Agent, Freight Department, same road, St. Paul, Minn.

James Dunsmuir, formerly director, C. P.R., and Lieutenant Governor of British Columbia, who died at Victoria, B.C., June 6, left an estate of the total value of $3,597,583.08 gross, with debts and liabilities estimated at $265,066.03. The inventory of the estate does not contain the Canadian Northern Ry. debenture stock mentioned in the will, but in an affidavit made in connection with the property, the amount of this stock, mentioned as having been transferred to the children in Feb., 1920, is stated as £764,-719 12s. 4½d.

W. H. Ellis, M.A., M.B., LL.D., formerly Dean, Engineering and Applied Science Faculty, Toronto University, died in Muskoka Aug. 23, aged 74, as the result of a stroke, shortly after swimming.

Rowland J. Foreman, who has been appointed Foreign Freight Agent, Canadian National-Grand Trunk Rys., Montreal, was born at Toronto, Dec. 31, 1878, and entered transportation service in August, 1892, since when he has been, to July 31, 1898, clerk and stenographer, G.T.R., Toronto; Dec. 1898 to 1902, stenographer, secretary and chief clerk to General Freight and Passenger Agent, and General Manager, Lake Erie & Detroit River Ry., Walkerville, Ont.; 1902 to Sept. 1904, chief clerk to Superintendent, Buffalo Division, same road, Walkerville and St. Thomas, Ont.; Sept. 1904 to Mar. 1906, chief clerk to Secretary-Treasurer, Canadian Freight Association, Toronto; Mar. 1906 to Dec. 1907, Assistant to Chairman of Advisory Committee, Canadian Freight Association, Montreal; Jan. 1908 to Jan. 1911, chief clerk, Tariff Bureau, Grand Trunk Pacific Ry., Winnipeg; Jan. 1911 to July 1913, Assistant General Freight Agent, G.T.P.R., Winnipeg; Aug. 1913 to July 1920, Assistant to Vice President (Traffic), G.T. R. and G.T.P.R., Montreal.

A. Horace Gow, whose appointment as General Freight Agent, Canadian National-Grand Trunk Rys., Ottawa, Ont., was announced in our last issue, was born there, Apr. 15, 1888, and entered railway service in July 1904, since when he has been, to Nov. 1905, clerk, Passenger Department, Canada Atlantic Ry., now part of the G.T.R., Ottawa, Ont.; Nov. 1905 to June 1911, clerk, Passenger Department, G.T.R., Montreal; June 1911 to Mar. 1917, clerk, Freight Department, G.T.R., Ottawa, Ont.; Mar. 1917 to July 1920, chief clerk, District Freight Agent's office, Canadian National Rys., Ottawa, Ont.

Hon. G. P. Graham, ex-Minister of Railways and Canals, Brockville, Ont., while spending a holiday at Staten Island, N.Y., fell with a seaplane into the ocean, on Aug. 14, owing to engine trouble when several miles from land, and was rescued by a motor boat, which put out from the shore.

George H. Ham, of the C.P.R. head office, underwent a minor operation in the Western Hospital, Montreal, early in August, and he was reported a few days later to be progressing satisfactorily.

C. A. Hayes, Vice President, Canadian National Rys., left Toronto Aug. 24 on a business trip to the Pacific coast, expecting to be away about three weeks.

C. O. Foss, who has been appointed Chief Engineer, New Brunswick Hydro Electric Commission, was born in New Hampshire, Mar. 20, 1852, and from 1878 to 1884, was engaged in general engineering practice at Concord, N.H. From 1884 to 1904 he was Chief Engineer, Nova Scotia Central Ry., Bridgewater, N.S.; 1904 to 1908, Assistant District Engineer, National Transcontinental Ry., St. John, N.B.; 1908 to 1914, District Engineer, National Transcontinental Ry., St. John, N.B.; and in 1917 he was appointed Chief Engineer, St. John & Quebec Ry.

H. H. Hamill, who has been appointed General Agent, Freight Department, Canadian National-Grand Trunk Rys., Detroit, Mich., was born at Somerville, Mass., Apr. 6, 1874, and entered transportation service with the Johnson Steamship Line, Boston, Mass., in 1893, and from Feb. 1, 1900, to June 1, 1906, was city solicitor, National Despatch Line, Boston, Mass.; June 1, 1906, to Apr. 1, 1910, Travelling Agent, National Despatch-Great Eastern Line, Boston, Mass.; Apr. 1, 1910, to Nov. 1, 1911, Soliciting Freight Agent, G.T.R., New York City; Nov. 1, 1911, to June, 1914, Travelling Freight Agent, G.T.R., New York; June 1914 to Nov. 1918, Commercial Agent, G.T.R., Detroit, Mich.; Nov. 1918 to May 1919, General Agent, Freight Department, Lines in Canada, G.T.R., Detroit, Mich.; May 1919 to Mar. 1, 1920, General Agent, Freight Department, Grand Trunk Western Lines Rd. (U.S.R.A.), Detroit, Mich.; Mar. 1 to Aug. 2, 1920, General Agent, Freight Department, Western Lines, G.T.R. Detroit, Mich.

William Pittman Hinton, who has been appointed Consulting Officer to the Receiver of the Grand Trunk Pacific Ry. (the Minister of Railways and Canals), at Winnipeg, was born at Hintonburg, Ont., Aug. 30, 1871, and entered railway service May 3, 1887, since when he has been, to Aug. 1891, clerk, freight passenger and car accounts, and travelling auditor, Canada Atlantic Ry.; Aug. 1891 to Mar. 1898, rate clerk, same road, and accountant, Canada Atlantic Fast Freight Line; Mar. 1898 to June 30, 1901, Assistant General Freight Agent, same road, and Canada Atlantic Transit Co.; June 30, 1910, to Jan. 30, 1913, General Freight Agent, same road; Jan. 30, 1903, to Oct. 1905, General Passenger and Freight Agent, same road; Oct. 1905 to Jan. 1907, General Agent, Passenger Department, G.T.R., Ottawa, Ont.; Jan. 1907 to Apr. 1909, Assistant General Passenger and Ticket Agent, same road, Montreal; Apr. 1909 to Feb. 1914, General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg; Feb. to Oct., 1914, Assistant Passenger Traffic Manager, same road, Winnipeg; Oct. 1914 to Nov. 11, 1915, Assistant Passenger Traffic Manager, G.T.R. and Grand Trunk Pacific Ry., Montreal; Nov. 11, 1915, to Aug. 1, 1917, Traffic Manager, G.T.P.R. and Grand Trunk Pacific Coast Steamship Co., and Western Traffic Manager, Canadian Government Railways, Winnipeg; Aug. 1917 to Aug. 23, 1920, Vice President and General Manager, G.T.P.R., Winnipeg. He resigned the position of General Manager, G.T.P.R., just prior to his present appointment.

J. D. McDonald,
General Western Passenger Agent, Canadian National Rys., and General Passenger Agent, Western Lines, Grand Trunk Ry.

D. O. Lewis, District Engineer, Vancouver Island Lines, Canadian National Rys., is one of the first of the engineers to be granted certificates in civil engineering, under the recently enacted Engineering Profession Act of British Columbia. Under this act, engineers have until July 1, 1921, to make application for membership in the Association of Professional Engineers, and to have their qualifications passed on by a board of examiners.

Miss Julia MacInnes, eldest daughter of W. R. MacInnes, Vice President in charge of Traffic, C.P.R., Montreal, is to be married to Phillip Durnford, on Sept. 8.

J. D. McDonald, General Passenger Agent, Western Lines, G.T.R., Chicago, Ill., who has also been appointed General Western Passenger Agent, Canadian National Rys., Chicago, Ill., was born at Toronto, Aug. 27, 1855, and entered G.T.R. service in 1868, since when he has been, to 1870, messenger, Toronto; 1870 to 1875, Assistant Ticket Agent, Toronto; 1875 to 1896, Ticket Agent, Buffalo, N.Y.; 1896 to May 1902, City Passenger and Ticket Agent, Buffalo, N. Y.; May 1902 to Mar. 1, 1911, District Passenger Agent, Toronto; Mar. 1, 1911, to Oct. 1918, Assistant General Passenger Agent, Chicago, Ill.; Oct. 1918 to May 1919, Assistant General Passenger Agent, Chicago, Ill.; Oct. 1918 to May 1919, Assistant General Passenger Agent, Eastern Regional District, U.S. Railroad Administration, Chicago, Ill.; May 1919 to Mar. 1, 1920, General Passenger and Baggage Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Chicago, Ill.; Mar. 1 to Aug. 2, 1920, General Passenger Agent, Western Lines, G.T.R., Chicago, Ill.

C. S. Maharg, who has been appointed Superintendent, Vancouver Division, British Columbia District, C.P.R., Vancouver, was born in Dufferin County, Ont., Feb. 4, 1867, and entered C.P.R. service in Apr. 1885, since when he has been, to Feb. 1888, freight brakeman; Feb. 1888 to May 1893, freight conductor; May 1893 to Dec. 1901, passenger conductor; Dec. 1901 to June 1902, rule instructor; June to Aug. 1902, passenger conductor; Aug. 1902 to Dec. 1904, Trainmaster, District 1, Ontario Division; Dec. 1904 to June 1906, Trainmaster, Kenora, Ont.; June to Aug. 1906, Assistant Superintendent, Kenora, Ont.; Aug. 1906 to Feb. 28, 1907, Assistant Superintendent, Moose Jaw, Sask.; Feb. 28, 1907, to Dec. 1908, Superintendent, District 3, Central Division, Brandon, Man., and Superintendent, District 5, Central Division, Saskatoon, Sask.; Dec. 1908 to Oct. 1918, successively, Superintendent, District 2, Western Division, Medicine Hat, Alta., Superintendent, District 3, Western Division, Calgary, Alta., and Superintendent, Brandon Division, Manitoba District, Brandon, Man.; Oct. 1918 to Aug. 1920, Superintendent, Cranbrook Division, British Columbia District, Cranbrook, B.C.

A. A. Maver, formerly Master Mechanic, G.T.R., Montreal, died at Jersey City, Aug. 7, aged 71. He was born at Brechin, Scotland, and came to Canada at an early age. He commenced railway work as an apprentice in the G.T.R. Montreal shops and was successively Locomotive Foreman at Richmond, Que., and Toronto, and while at Toronto was appointed Assistant Mechanical Superintendent, Great Western Ry., now part of the G.T.R., after which he was appointed Erecting Foreman, G.T.R., Stratford, Ont., and in 1896, Locomotive Foreman, London, Ont. In Aug. 1901 he was appointed Master Mechanic, G.T.R., Montreal, and continued in that position until his retirement on superannuation a few years ago. The funeral, at Montreal, Aug. 10, was attended by a number of railway officials.

P. Mooney, who has been appointed Assistant General Freight Agent, Canadian National-Grand Trunk Rys., Quebec, Que., was born at St. Catherines, Que., Apr. 19, 1871, and entered railway service Nov. 1889, since when he has been, to Dec. 1897, stenographer and chief clerk to Superintendent Intercolonial Ry., Riviere-du-Loup, Que.; Mar. 1898 to Feb. 1901, clerk in General Freight and Passenger Department, Quebec & Lake St. John Ry., Quebec; Feb. 1901 to Mar. 1906, chief clerk, General Freight and Passenger office, Great Northern Ry. of Canada, Quebec; Mar. 1906 to Jan. 1907, District Freight and Passenger

Agent, Halifax & South Western Ry., Halifax, N.S.; Jan. 1907 to Feb. 1917, Division Freight and Passenger Agent, Halifax & South Western Ry., Halifax, N.S.; Feb. 1917 to Dec. 1918, Assistant General Freight Agent, lines east of Port Arthur, Canadian Northern Ry., Toronto; Jan. 1919 to July 1920, Assistant General Freight Agent, Canadian National Rys., Quebec, Que.

A. Z. Mullins, who has been appointed General Agent, Freight Department, Canadian National-Grand Trunk Rys., Grand Rapids, Mich., was born at Appin, Ont., Feb. 14, 1862, and entered G.T.R. service Feb. 10, 1884, since when he has been, to May 1887, telegraph operator, Komoka, Ont.; May 1887 to Oct. 1896, rate clerk, chief clerk and Travelling Freight Agent, Buffalo, N.Y.; Oct. 1896 to Apr. 1900, Agent, National Despatch-Great Eastern Line, Grand Rapids, Mich.; Apr. 1900 to June 1907, Agent, Lackawanna-Grand Trunk Line, Detroit, Mich.; July 1907 to Apr. 30, 1919, Commercial Agent, Grand Rapids, Mich.; May 1919, Division Freight Agent, G.T.R., Grand Rapids, Mich.; May 1919 to Mar. 1, 1920, Division Freight Agent, Grand Trunk Western Lines Rd. (U.S.R.A.), Grand Rapids, Mich; Mar. 1 to Aug. 2, 1920, Division Freight Agent, Western Lines, G.T.R., Grand Rapids, Mich.

**Capt. L. C. Ord**, formerly Assistant Works Manager, Angus Car Shops, Montreal, who served in France during the war with the 166th Sieg Battery, has entered the service of the Cammel-Laird Engineering Co.'s service in England.

**Arthur Patriarche**, Special Representative, Traffic Department, Pere Marquette Ry., Detroit, Mich., died there Aug. 16, after an illness lasting three months. A. P., as he was affectionately referred to by his associates, was born in Jersey, Channel Islands, June 13, 1849, and came to Canada with his parents in 1860, making the journey across the Atlantic in a sailing ship. He attended school at Belleville, Ont., and learned telegraphy there. He entered railway service with the G.T.R. at Hamiton, Ont., and in the closing years of the United States civil war was night operator for the G.T.R. there. He entered railway service in the U.S. in Sept., 1872, after which he was to 1875 with Flint and Pere Marquette Rd., Bay City, Mich.; Jan. 1875 to Sept. 1882, agent, same road, Bay City, Mich.; Sept. 1882 to Sept. 1883, General Western Agent, same road, Milwaukee, Wis.; Sept. 1883 to 1886, Assistant General Freight Agent, same road, Bay City, Mich.; 1886 to 1891, General Freight Agent, same road, Bay City, Mich.; 1891 to 1900, Traffic Manager, same road, Bay Cit, Mich.; 1900 to 1905, Traffic Manager, Pere Marquette Rd., Detroit, Mich.; 1905 to 1909, General Traffic Manager, same road, Detroit, Mich.; 1909 to 1912, Vice President (Traffic), same road, Detroit, Mich.; 1912 to 1918, Special Representative, Traffic Department, Pere Marquette Ry., Detroit, Mich.; 1918 to Mar. 1, 1920, Assistant to Federal Manager P.M. Rd., United States Railroad Administration, Detroit, Mich.; and from Mar. 1, 1920, Special Representative, Traffic Department, Pere Marquette Ry., Detroit, Mich. He was a man of wide reading and independent thought and was the first person to call attention to the dangers of peach orchards in Western Michigan which the Chicago Drainage Canal brought about. His memorandum on the subject was accepted as Michigan's brief and was later adopted in Canada in the regulation of the water diversion, and it is stated as a significant fact that since the drainage canal project has been carried out a great number of peach orchards in the western part of Michigan have been destroyed by frosts. He was deeply interested in agriculture generally, and had served on many committees. The funeral took place at Roseland Cemetery, Detroit, Aug. 18, and was attended by a number of transportation men.

George Pepall, who has been appointed Assistant Foreign Freight Agent, Canadian National-Grand Trunk Rys., Toronto, was born at High Wycombe, Bucks, Eng., Jan. 15, 1849, and entered Canadian railway service Mar. 1880, since when he has been, to Feb. 1884, clerk, G.T.R. freight office, Toronto; Feb. 1884 to Apr. 1, 1898, chief clerk in charge of freight station, G.T.R., Yonge St., Toronto; Apr. 1, 1898, to July 15, 1910, Canadian Agent, National Despatch-Great Eastern Line, Toronto; July 15, 1910 to Aug. 1, 1920, Assistant Foreign Freight Agent, G.T.R., Toronto.

H. W. Ploss, who has been appointed General Agent, Freight Department, Canadian National-Grand Trunk Rys., Milwaukee, Wis., was born at Chicago, Ill., Feb. 23, 1873, and entered railway service in Aug. 1889, since when he has been, to Oct. 1891, clerk, G.T.R., Chicago, Ill.; 1891 to 1893, Soliciting Freight Agent, West Shore Line and Reading Despatch, Chicago, Ill.; Nov. 1, 1900 to July 1, 1909, Contracting Freight Agent, G.T.R., Milwaukee, Wis.; also from Mar. 19, 1906, to July 1, 1909, Agent, Reading Despatch, Milwaukee, Wis., and also acting as Agent of the Milwaukee and Michigan lines Grand Trunk Despatch and Northern Express lines; July 1, 1909 to Mar. 1, 1919, Commercial Agent, G. T.R., Milwaukee, Wis.; Mar. 1, 1919 to Mar. 1, 1920, General Agent, Freight Department, Grand Trunk Western Lines Rd. (U.S.R.A.), Milwaukee, Wis.; Mar. 1 to Aug. 2, 1920, Commercial Agent, G.T.R., Milwaukee, Wis. He was President of the Milwaukee Traffic Club, and was also for a number of years, Chairman of the Milwaukee Freight Committee until its dissolution, when the U.S. R.A. assumed control of the railways.

F. R. Porter, who has been appointed Foreign Freight Agent, Canadian National-Grand Trunk Rys., Toronto, was born at Stratford, Ont., June 13, 1875, and entered railway service Apr. 3, 1892, since when he has been, to May 1, 1896, clerk and stenographer, Assistant Superintendent's and Local Freight Agent's offices, G.T.R., Stratford and London, Ont.; May 1, 1896 to Jan. 31, 1898, clerk, Division Freight Agent's office, G.T.R., Stratford, Ont.; Jan. 31 to Nov. 30, 1898, stenographer, Division Freight Agent's office, G.T.R., Hamilton, Ont.; Nov. 30, 1898 to July 31, 1899, chief clerk to Division Freight Agent, G.T.R., Stratford, Ont.; July 31, 1899 to Feb. 28, 1901, chief clerk to Division Freight Agent, G.T.R., Hamilton, Ont.; Feb. 28, 1901, to July 31, 1902, Soliciting Freight Agent, G.T.R., Hamilton, Ont.; July 31 to Dec. 31, 1902, Travelling Freight Agent, G.T.R., Hamilton, Ont.; Jan. 1, 1903, to July 10, 1910, Assistant Foreign Freight Agent, G.T.R., Toronto; July 11, 1910, to July 14, 1913, Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta.; July 15, 1913 to July 1920, Assistant General Freight Agent, Grand Trunk Pacific Ry., Winnipeg.

W. D. Robb, Vice President, Transportation and Maintenance, G.T.R., Montreal, spent part of August with his family at Prout's Neck, Me.

**Miss D. G. Rutherford**, daughter of J. G. Rutherford, C.M.G., one of the Board of Railway Commissioners, was married Aug. 6 at Ottawa to Clive Rogers, of Addo, South Africa, where they will reside.

**D. C. Shepard**, who died at St. Paul, Minn., Aug. 7, aged 92, is stated to have been connected with the building of over 7,000 miles of railways as a railway contractor. As a member of the firm of Langdon & Shepard he was engaged in building about 700 miles of the C.P.R. between Oak Lake, Man., and Calgary, Alta., in 1882 and 1883.

**T. Duff Smith**, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, has been elected a member of the International Railway Fuel Association executive committee.

T. J. Smith, European Freight Manager, C.P.R., London, Eng., was in Canada recently, on a business trip.

Sir Alfred Smithers, Chairman, G.T. R., arrived in New York, Aug. 25, en route to Montreal, on G.T.R. business. While on the voyage, he was taken ill, and on arrival at New York was removed to St. Luke's hospital, suffering from abdominal trouble, which may detain him about two weeks. H. G. Kelley, President, G.T.R., met him at New York.

**E. Tiffin**, Special Traffic Representative, Canadian National Rys., is seriously ill at his house, at Preston, Ont.

**John Millard Sparling**, who has been appointed Assistant to Vice President (Traffic) G.T.R., Montreal, was born at Toronto, Feb. 16, 1882, and entered railway service May 1, 1899, since when he has been, to Apr. 30, 1900, freight clerk, National Despatch Line, Toronto; May 1, 1900 to Dec. 1903, freight clerk, Lehigh Valley Rd., Toronto; Dec. 3, 1903 to Oct. 31, 1905, freight clerk, Central Vermont Ry., St. Albans, Vt.; Nov. 1, 1905 to May 14, 1906, freight clerk, G.T.R., Montreal; May 15, 1906 to Feb 28, 1907, chief clerk to Division Freight Agent, G.T.R., Portland, Me.; Mar. 1, 1907 to Jan. 15, 1909, chief clerk, Freight Department, G. T.R., New York; Jan. 16, 1909, to Apr. 30, 1916, chief clerk, Freight Tariff Bureau, G.T.R., Montreal; May 1, 1916 to July 31, 1918, chief clerk to General Freight Agent, G.T.R., Montreal; Aug. 1, 1918 to May 31, 1919, chief clerk to Freight Traffic Manager, G.T.R., Montreal; June 1919 to July 31, 1920, chief clerk to Vice President (Traffic), G.T.R., Montreal.

W. H. Spicer, who has been appointed District Freight Agent, Canadian National-Grand Trunk Rys., Detroit, Mich., was born at Montreal, Sept. 29, 1871, and entered railway service Nov. 1, 1890, since when he has been to May 1, 1896, Travelling Car Agent, Western Lines, G.T.R., Detroit, Mich.; May 1 to July 1, 1896, Travelling Car Agent, G.T.R., Montreal; July 1, 1896 to Jan. 1, 1898, Travelling Car Agent, G.T.R., Portland, Me.; Jan. 1, 1898 to Mar. 1, 1910, Travelling Car Agent, G.T.R., Boston, Mass.; Mar. 1, 1901 to Apr. 1, 1902, Agent, National Despatch-Great Eastern Fast Freight Line, Battle Creek, Mich.; Apr. 1, 1902 to Mar. 2, 1905, chief clerk, General Freight Department Western Lines, G.T.R., Chicago, Ill.; Mar. 1, 1905 to July 1, 1909, Agent, Lackawanna-Grand Trunk Fast Freight Line, Milwaukee, Wis.; July 1, 1909 to Dec. 1, 1912, Commercial Agent, G.T.R., Detroit, Mich.; Dec. 1, 1912, to July 1, 1918, Division Freight Agent, G.T.R., Detroit, Mich.; July 1, 1918 to May 1, 1919, Division Freight Agent,

Grand Trunk Western Lines Rd. (U.S. R.A.); May 1, 1919 to Mar. 1, 1920, Assistant General Freight Agent, G.T.W. L.R. (U.S.R.A.), Detroit, Mich.; Mar. 1 to Aug. 2, 1920, Assistant General Freight Agent, Western Lines, G.T.R., Detroit, Mich.

H. G. Stanton, who died at Cornwall, Ont., Aug. 8, aged 65, was for some years engaged in railway work in Mexico, and later as engineer on the National Transcontinental Ry., resident engineer in Cape Breton on the St. Peters Canal, and latterly on the Ontario-St. Lawrence canals at Cornwall.

S. G. Wagstaff, whose appointment as Commercial Agent, Canadian National-Grand Trunk Rys., Toledo, Ohio, was announced in our last issue, was born at Hamilton, Ont., Jan. 9, 1866, and entered railway service in Oct., 1881, since when he has been, to Feb. 1887, in local freight office, Great Western Ry., now part of G.T.R., Niagara Falls, Ont.; Feb. 1887 to Feb. 1893, General Freight Agent Through Traffic, G.T.R., Detroit, Mich.; Feb. 1893 to July 1899, chief clerk, Commercial office, G.T.R., Detroit, Mich.; July 1899 to May, 1903, chief clerk, Division Freight Agent's office, G.T.R., Detroit, Mich.; May 1903 to Nov. 1903, Michigan State Agent, Reading Despatch Fast Freight Line, Detroit, Mich.; Dec. 1903 to July 1920, Commercial Agent, G.T.R., Toledo, Ohio.

Dr. T. Walker, District Medical Officer, Canadian National Rys., St. John, N.B., has resigned, after 30 years service with Canadian Government Railways.

A. E. Warren, General Manager, Western Lines, Canadian National Rys., Winnipeg, who has also been appointed General Manager, Grand Trunk Pacific Ry., was born at Taunton, Eng., June 9, 1874, entered railway service in 1889, and served in various capacities in Car Service Department, Superintendent's, General Superintendent's and Manager's offices, and station and yard service, C.P.R., until July, 1901, when he resigned to enter mercantile business. He entered Canadian Northern Ry. service in Aug. 1902, and served as station agent, chief clerk to General Manager, Superintendent, General Superintendent and Assistant to General Manager, Western Lines. From Jan. 1 to Aug. 1, 1918, he was loaned to the Dominion Government and acted as Chief Operating Officer, Department of Railways and Canals, Ottawa. He was appointed General Manager, Western Lines, Canadian National Rys., in Nov. 1918.

Lady Whyte, of Winnipeg, widow of Sir William Whyte, formerly Vice President, C.P.R., is visiting her daughter, Mrs. C. F. Meech, in Vancouver, B.C.

G. Wilson, Superintendent, Locomotive Shops, G.T.R., Montreal, was presented with a chime clock by the staff, Aug. 5, on his marriage. The presentation was made by Sir Alexander Bertram, on behalf of the staff.

David Oliver Wood, who has been appointed General Foreign Freight Agent, Canadian National-Grand Trunk Rys., Montreal, was born at Kleinburg, Ont., Mar. 16, 1864, and entered transportation service in May 1883, since when he has been, to 1902, billing clerk, District Freight Agent's office, and Assistant Foreign Freight Agent, G.T.R., Toronto; 1902 to 1905, Western Freight Agent, Donaldson & Thomson Steamship Lines, Toronto; 1905 to 1917, General Freight Agent, Allan Line Steamships, Toronto; 1917 to Feb. 1919, Assistant Export and Import Freight Agent, C.P.R., Toronto; April 1919 to Aug. 1, 1920, Traffic Manager, Export and Import Freight Department, Canadian National Rys., Toronto. From Sept. 1917 to Jan. 1, 1919, he was loaned to the British Ministry of Shipping (Canada), and acted as Assistant to the Director General, at Montreal.

Frederick George Wood, who has been appointed General Agent, Freight Department, Canadian National-Grand Trunk Rys., Pittsburg, Pa., was born at Toronto, Sept. 15, 1890, and entered railway service in 1906, since when he has been, to 1908, clerk, District Freight Agent's office, G.T.R., Toronto; 1908 to 1909, clerk, General Freight and Passenger Agent's office, Canadian Northern Ry., Toronto; 1909 to Aug. 1910, secretary to General Freight and Passenger Agent, C.N.R., Toronto; Aug. 1910 to Feb. 1911, chief clerk, District Freight Agent, G.T. Pacific Ry., Edmonton, Alta.; Feb. to Apr. 1911, secretary to General Traffic Manager, Canadian Northern Ry., Toronto; Apr. 1911 to June 1912, Contracting Freight Agent, C.N.R., Pittsburg, Pa.; June 1912 to Feb. 1914, Travelling Freight Agent, C.N.R., Pittsburg, Pa.; Feb. 1914 to Mar. 1916, Commercial Agent, Canadian Northern Ry., St. Louis, Mo.; Mar. 1916 to July 1920, General Agent, C.N.R., Pittsburg, Pa.

John Anderson Wright, who has been apointed Assistant Foreign Freight Agent, Canadian National-Grand Trunk Rys., Montreal, was born at Peterborough, Ont., Oct. 27, 1881, and entered G.T.R. service May 1, 1899, since when he has been, to Dec. 31, 1899, junior clerk, General Freight Office; Jan. 1, 1900, to Jan. 1, 1903, clerk, same office; Jan. 1, 1903 to Sept. 22, 1904, stenographer, Foreign Freight Agent's office; Sept. 23, 1904 to July 31, 1907, stenographer, General Freight Agent's office; Aug. 1, 1907 to May 31, 1915, clerk, Foreign Freight Office; June 1, 1915, to Mar. 31, 1917, chief clerk, same office; Mar. 1, 1917, to Apr. 25, 1920, Grain Agent, Foreign Freight office; Apr. 25 to Aug. 1, 1920, Assistant Foreign Freight Agent, G.T.R., all at Montreal.

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C.P.R.'s McGill University Scholarship.—The scholarship at McGill University, Montreal, offered by the C.P.R. for competition among its employes, has been won by S. D. Rudenks, a messenger in the company's commercial telegraph department, Montreal. The scholarship covers the regular four years work at the University, the winner having the choice of several courses.

Gulf Paper Co.—A press report states that the Northcliffe newspaper interests of London, Eng., have acquired a two-thirds share in the Gulf Paper Co., at Clarke City, Que., owned by members of the Clarke family. The Clarke interests developed extensive properties on the north shore of the St. Lawrence River below Quebec, building Clarke City, with wharves, etc., and a railway to its power development plant.

Bluebird Transit Co. has been incorporated under the Ontario Companies Act with authorized capital of $40,000 and office at Toronto, to buy, sell and operate for hire, etc., conveyances and vehicles capable of being moved by any form of power for the transportation of animate or inanimate objects by land, water or air, and for other purposes in connection with the same. The provisional directors are F. J. Hughes, D. P. J. Kelly and L. J. Phelan, solicitors, Toronto.

## Grain in Store at Elevators.

Grain in store at public terminal elevators, interior terminal elevators, country elevators in Western Division, and public elevators in east, also at U.S. Atlantic seaboard ports. Prepared by the Dominion Bureau of Statistics, Internal Trade Division.

| Week ended Aug. 6th, 1920: | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William | | | | | | |
| C.P.R. | 39,187 | 11,029 | 12,944 | ..... | 8,961 | 72,121 |
| Empire Elevator Co. | *1,910 | *4,082 | *1,525 | 1,007 | 436 | *6,074 |
| Consolidated Elevator Co. | 201,399 | 55,313 | 28,836 | 103,379 | 2,236 | 391,163 |
| Ogilvie Flour Mills Co. | 186,900 | 33,928 | 53,591 | ..... | 6,438 | 280,857 |
| Western Terminal Elevator Co. | 50,590 | 8,147 | 2,088 | 43,932 | ..... | 104.757 |
| G. T. Pacific | 93,142 | 34,540 | 9,831 | 42,020 | 2,884 | 182,417 |
| Grain Growers' Grain Co. | 72,021 | 54,033 | 23,342 | ..... | 1,569 | 150,965 |
| Fort William Elevator Co. | 99,971 | 95,890 | 28,059 | 16,431 | 6,923 | 247,274 |
| Northwestern Elevator Co. | 255,471 | 129,044 | 17,959 | 43 | 2,226 | 404,743 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 156,439 | 64,401 | 22,859 | 6,820 | 4,748 | 255,267 |
| Sask. Co-op. Elevator Co. | 167,465 | 30,820 | 24,262 | 145,540 | 1,857 | 369,944 |
| Canadian Government Elevator | 887,559 | 45,381 | 18,740 | 124,188 | 8,003 | 1,083,871 |
| Thunder Bay | 30,434 | ..... | *7,538 | 677 | 80 | 23,653 |
| Davidson and Smith | 10,442 | 8,596 | 2,045 | ..... | 423 | 21,506 |
| Eastern-Richardson | 86,317 | 36,743 | 12,355 | 17,527 | *121 | 152,821 |
| Total Public Terminal Elevators | 2,335,427 | 603,783 | 247,848 | 501,564 | 46,663 | 3,735,285 |
| Total Private Terminal Elevators | 279,718 | 115,599 | 34,771 | 82 | ..... | 430,170 |
| Saskatoon: Can. Gov't Elevator | 215,437 | 6,200 | ..... | 20,307 | ..... | 241,944 |
| Moose Jaw: Can. Gov't Elevator | 267,313 | 15,093 | 1,503 | 20,075 | ..... | 303,984 |
| Calgary: Can. Gov't Eleveator | 273,437 | 149,225 | 12,159 | 67 | 991 | 435,879 |
| Vancouver, B.C.: Can. Gov't Elevator | 7,591 | 1,765 | ..... | ..... | ..... | 9,356 |
| *Total Interior Terminal Elevators | 763,778 | 172,283 | 13,662 | 40,449 | 991 | 991,163 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 14,100 | ..... | 7,724 | ..... | ..... | 21,824 |
| Midland Elevator Co. | 30,020 | 1,651 | ..... | ..... | ..... | 31,671 |
| Tiffin, G.T.P. | 101,836 | 8,000 | ..... | ..... | ..... | 109,836 |
| Port McNicoll | 622,949 | 1,732 | 202,665 | ..... | ..... | 827,346 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 460.768 | 79,819 | 6,217 | ..... | ..... | 546,804 |
| West Can. Flour Mills Co., Ltd. | 93,098 | ..... | ..... | ..... | ..... | 93,098 |
| Toronto: Campbell Flour Mills Co. | 18,664 | 9,934 | 3,017 | ..... | ..... | 31,615 |
| Kingston— | | | | | | |
| *Commercial Elevator Co. | ..... | 5 | ..... | ..... | ..... | 5 |
| *Maple Leaf Milling Co., Ltd. | 93,796 | ..... | ..... | ..... | ..... | 93,796 |
| Montreal— | | | | | | |
| Harbor Commissioners No. 1 and 2 | 910,965 | 122,224 | 264,609 | ..... | 549 | 1,298,347 |
| Montreal Warehousing Co. | 221,860 | 8,828 | 53,215 | 23,356 | ..... | 307,259 |
| Ogilvie Flour Mills Co. | 303,692 | ..... | ..... | ..... | ..... | 303,692 |
| Total Public Elevators | 2,871,748 | 232,193 | 537,447 | 23,356 | 549 | 3,665,293 |
| *Total Country Elevators | 774,113 | 1,022,139 | 238,672 | 79,507 | ..... | 2,114,431 |
| Total Quantity in Store | 7,024,784 | 2,145,997 | 1,072,400 | 644,958 | 48,203 | 10,936,342 |

*Week ended July 30th, 1920.

# Railway Rolling Stock Orders and Deliveries.

Algoma Eastern Ry. is reported to have ordered 2 locomotives from Montreal Locomotive Works.

Canadian National Rys. have ordered 2 business cars from Canadian Car & Foundry Co. for immediate delivery.

The Timiskaming & Northern Ontario Ry. advised us recently that it would be in the market for four Pacific type locomotives.

The C.P.R., between July 14 and Aug. 14, ordered 11 snow flangers and 8 single track steel snow ploughs from its Angus shops, Montreal.

The C.P.R., between July 14 and Aug. 14, received 2 vans and 1 Pacific type locomotive from its Angus shops, Montreal, and 6 vans from is Winnipeg shops.

Canadian Car & Foundry Co. is reported to have orders on its books totalling $30,000,000, but is said to be hampered somewhat by shortage of material, consequent upon transportation difficulties.

Canadian Car & Foundry Co., between July 12 and Aug. 12, made the following deliveries: 67 Hart-Otis ballast cars, 28 cabooses and 12 observation cars to Canadian National Rys.; 50 tram cars to Canadian Creosoting Co.; 3 dump cars to Greater Winnipeg Water District Ry.; 3 cabooses to Pacific Great Eastern Ry.; 94 tank cars to Imperial Oil Ltd.; 101 repaired hopper cars to G.T.R., and 117 repaired box cars to Grand Trunk Pacific Ry.

Canadian National Rys., to Aug. 11, received 11 observation buffet compartment sleeping cars, out of an order for 13, placed in 1919, with Canadian Car & Foundry Co.; 228 general service cars, out of an order for 1,150, placed this year with Eastern Car Co.; 48 ballast cars, out of an order for 350, placed this year with Hart-Otis Car Co.; 34 cabooses, out of an order for 80, placed this year with Canadian Car & Foundry Co.; 10 heavy and 32 medium Pacific type locomotives, completing an order placed this year with Montreal Locomotive Works, and 12 switching locomotives, out of an order for 30, placed this year with Canadian Locomotive Co.

The C.P.R. has received 5 Santa Fe (2-10-2) locomotives, an illustration of one of which is given on this page, from its Angus shops, and which were ordered in February. These locomotives are fitted with double draw bars between engine and tender, and Vaughan trailing truck. They have cast steel frame and C.P.R. standard vestibule cab, and are equipped to burn coal or oil fuel. Following are the chief details:—

| | |
|---|---|
| Weight on engine truck | 24,000 lb. |
| Weight on trailing truck | 55,000 lb. |
| Weight on drivers | 275,600 lb. |
| Weight of engine, total | 354,600 lb. |
| Weight of tender, loaded | 180,000 lb. |
| Coal capacity | 12 tons |
| Water capacity | 8,000 imp. gal. |
| Driving wheel, diar. | 58 in. |

Santa Fe (2-10-2) Locomotive, Canadian Pacific Railway.

Pacific Type (4-6-2) Locomotive, Canadian National Railways.

| | |
|---|---|
| Cylinders, diar. and stroke | 26½ x 32 in. |
| Firebox | 120¼ x 88⅞ |
| Grate area | 74.2 sq. ft. |
| Tubes, no. and diar. | 230 2¼, 45 5½ in. |
| Tubes, length over sheets | 21 ft. |
| Heating surface, firebox | 332.5 sq. ft. |
| Heating surface, arch tubes | 37.5 sq. ft. |
| Heating surface, tubes | 4,200 sq. ft. |
| Superheating surface, approximate | 1,085 sq. ft. |
| Total equivalent heating surface | 6,197 sq. ft. |
| Boiler pressure | 200 lb. |
| Factor of adhesion | 4.16 |
| Superheater | Locomotive Superheater Co., type A |
| Reverse gear | Franklin Railway Supply Co. Ragonnet |
| Driving boxes, main | Cole |
| Fire doors | automatic |

Canadian National Rys., to Aug. 11, received 10 heavy and 32 medium Pacific type (4-6-2) locomotives, an illustration of one of which is given on this page, completing orders for these types placed with Montreal Locomotive Works in February. There are also on order with the same company, 12 light locomotives of the same type. Following are the chief details of the medium and heavy locomotives, those for the light locomotive being the same as the heavy, except that they are equipped with Young valve gear:—

| | Medium. | Heavy. |
|---|---|---|
| Weight on drivers | 166,000 lb. | 175,000 lb. |
| Weight on truck | 50,000 lb. | 49,000 lb. |
| Weight on trailer | 50,000 lb. | 49,000 lb. |
| Weight, total | 266,000 lb. | 273,000 lb. |
| Wheel base, driving | 13 ft. | 13 ft. |
| Wheel base, engine and tender | 66 ft. 5¾ in. | 66 ft. 6¾ in. |
| Cylinders, diar. and stroke | 23½ x 28 | 24 x28 |
| Cylinders, spread | 10 ft. 3¾ in. | 10 ft. 4 in. |
| Driving wheel, diar. | 69 in. | 69 in. |
| Driving wheel centers | 62 in. | 62 in. |
| Driving wheen centers material | Cast steel | Cast steel |
| Driving journals, Main | 10½ x 21 | 10½ x 21 |
| Others | 10 x 13 | 10 x 13 |
| Trailer wheel, diar. | 48 in. | 48 in. |
| Driving wheel journals | 9 x 14 | 9 x 14 |
| Engine truck wheels | 33 in. | 33 in. |
| Engine truck wheel journals | 6½ x 12 | 6½ x 12 |
| Frames, width | 5 in. | 5 in. |

| | | |
|---|---|---|
| Boiler, type | Straight top radial stay | Extended wagon top radial stay |
| Boiler, diar. inside first ring | 71⅝ | 72½ |
| Boiler pressure | 200 lb. | 200 lb. |
| Firebox, length and width | 108 x 75¼ | 108⅛ x 75¼ |
| Tubes, no. and diar. | 182 2in. | 228 2in. |
| | 28 5⅜ in. | 32 5⅜ in. |
| Heating surface tubes | 1,945 sq. ft. | 2,378 sq. ft. |
| Heating surface, flues | 804 sq. ft. | 897 sq. ft. |
| Heating surface, f.b. tubes | 27 sq. ft. | 27 sq. ft. |
| Heating surface, fire box. | 188 sq. ft. | 215 sq. ft. |
| Heating surface, total | 2,964 sq. ft. | 3,517 sq. ft. |
| Superheating, surface | 677 sq. ft. | 757.3 sq. ft. |
| Grate area | 56.4 sq. ft. | 56.5 sq. ft. |
| Tractive power | 38,100 | 39,700 |
| Factor of adhesion | 4.36 | 4.4 |
| Superheater | Hungerford - Cameron | Schmidt |

| | | |
|---|---|---|
| Center of boiler from rail. | 9 ft. 5 in. | 9 ft. 8 in. |
| Reverse gear | Screw | Screw |
| Cab top | Vestibule | Vestibule |
| Tender frame | C.N.R. standard 10 and 13 in. channels | C.N.R. standard 10 and 13 in. channels |
| Tender, wheel diar. | 36 in. | 36 in. |
| Tender, truck type | Equalized | Equalized |
| Tender journals | 6 x 11 | 6 x 11 |
| Tank type | Water bottom | Water bottom |
| Water capacity | 6,500 imp. gal. | 9,000 U.S. gal. |
| Coal capacity | 10 tons | 10 tons |
| Coal pusher | Locomotive Stoker | |

The Pacific Great Eastern Ry. has received one Mikado (2-8-2) type locomotive, out of an order for 3 placed in February with Canadian Locomotive Co. Following are the chief details:—

| | |
|---|---|
| Fuel used | Oil |
| Weight on drivers | 162,000 lb. |
| Weight of engine, total | 212,000 lb. |
| Wheel base of engine, rigid | 13 ft. 6 in. |
| Wheel base of engine, total | 30 ft. 9 in. |
| Wheel base of engine and tender | 61 ft. 3 in. |
| Heating surface, fire box and arch tubes | 179 sq. ft. |
| Heating surface, tubes | 2,244 sq. ft. |
| Heating surface, total | 2,423 sq. ft. |
| Driving wheels, diar. | 51 in. |
| Driving wheel, centers | Cast steel |
| Driving journals, diar and length | 9½ and 9 x 12 |
| Cylinders, diar. and stroke | 22 x 28 in. |
| Boiler, type | Extended wagon top, radial stayed |
| Boiler pressure | 190 lb. |
| Tubes, number and diar. | 24—5⅜; 189—2 in. |
| Tubes, length | 17 ft. |
| Injectors | Nathan No. 9 |
| Safety valves | 3 in. Lunkenheimer |
| Air brakes | Westinghouse American |
| Packing | King, metallic |
| Superheater | Locomotive Superheater Co., type A |
| Frame cradle | Commonwealth |
| Trailing truck | Delta |
| Valve motion | Walschaert |
| Headlight | Electric |
| Weight of tender loaded | 153,500 lb. |
| Tank capacity, oil | 2,700 imp. galls. |
| Tank capacity, water | 6,000 imp. galls. |
| Tank, type | Water bottom |
| Truck, type | Equalized |
| Wheel diar. | 33 in. |
| Wheel type | Steel tired |
| Journal diar. and length | 5½ x 10 in. |
| Brakebeam | Safety simplex |

## Furnishing of Equipment for Loading on Lines Performing Switching Service.

The Railway Association of Canada has issued the following circular:—As the present code of Car Service Rules, A.R.A., does not specifically deal with the furnishing of equipment for loading on lines performing switching service, it is recommended that the following rules govern the practice on Canadian lines in this respect:

1. (a) When cars are to be loaded to destinations within the same switching limits in which the shipment originates, the obligation of supplying equipment ordered rests with the road upon which the car is to be loaded.

(b) When cars are to be loaded on a switching line to destinations beyond the switching limits, primary obligation for equipment ordered rests with the carrier road which is to receive the loaded car for road haul, subject to paragraph 2.

2. A road haul line or terminal switching line loading cars in switching service destined to points beyond the switch-limits on a carrier road shall furnish the equipment from such supply as may be available on its rails, and, when equipment required is not available, will call upon the carrier road to furnish necessary cars under paragraph 1 (b).

3. The use of equipment as above is subject to Car Service Rules.

4. Shippers will be required to place order for equipment desired with proper representatives of the road on which cars are to be loaded.

## C.P.R. Dining Car Department's War Memorial.

The C.P.R. Dining Car Department's Mutual Benefit Association has erected a bronze roll of honor table in the office of the Superintendent of the department at Toronto, room 110 Union Station, in honor of eight of the department's employes who were killed in the war. The tablet was unveiled by W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Montreal, July 31. It bears the names of the following employes:—

L. Collings, chef, 75th Battalion, killed at Vimy Ridge.

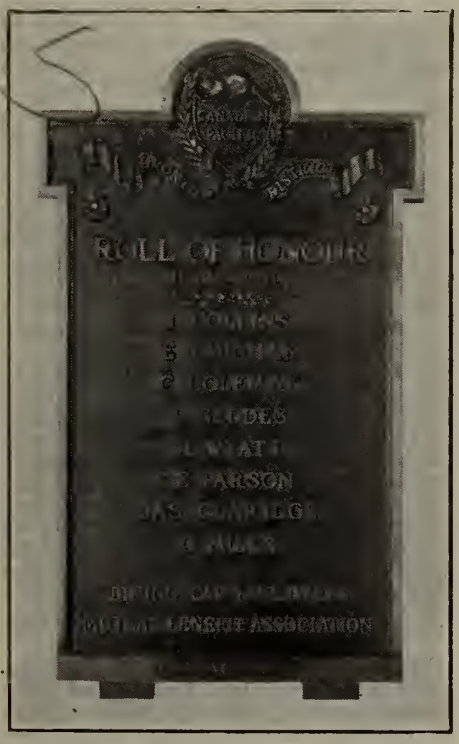
G. Mills, cook, 58th Battalion, killed at Vimy Ridge.

W. E. Parsons, cook, 15th Battalion.

C. Coleman, steward, 18th Battalion, killed a few days before the signing of the armistice.

E. Vaughan, waiter, 170th Battalion, died of wounds in England.

P. Geddes, waiter, 15th Battalion, who was last seen when giving his lifebelt to




a nursing sister on board a hospital ship which went down in the English Channel.

H. Wyatt, waiter, 3rd Battalion, killed at St. Julien (first battle).

Jas. Claridge, waiter, 3rd Machine Gun Section.

In unveiling the tablet Mr. Cooper said that out of the 10,000 odd C.P.R. men who enlisted during the war, there were about 1,100 from the dining car department.

**Car Shortage.**—The U.S. Commission for Car Service reports that the car shortage on U.S. and Canadian railways increased slightly during the week of Aug. 1, when the supply was 132,370 cars less than the demand, compared with a shortage of 125,000 cars during the previous week.

**The Swedish Parliament** is reported to have approved the electrification of the state railways between Stockholm and Goteberg, and to have appropriated 23,000,000 krone (normally $1,164,000). It is expected that the work will be completed by 1925.

## Prepayment of Freight Charges From the U.S. to Canada Suspended.

The Interstate Commerce Commission issued the following order at Washington Aug. 17:—It appearing that there have been filed with the Interstate Commerce Commission by F. A. Leland and W. J. Kelly, agents, tariffs containing schedules stating new individual and joint rates and charges and new individual and joint regulations and practices affecting such rates and charges, to become effective, except as otherwise noted herein, on Aug. 18, designated as follows: F. A. Leland, Agent—Supplement 13 to I.C.C. 1316; supplement 14 to I.C.C. 1316, effective Sept. 16; W. J. Kelly, agent—Supplement 13 to I.C.C. 917; Supplement 14 to I.C.C. 917, effective Sept. 16.

It is ordered that the Commission, upon complaint, without formal pleading, enter upon a hearing concerning the lawfulness of the rates, charges, regulations and practices stated in the said schedules contained in said tariffs, viz.: F. A. Leland, agent—Supplement 13 to I.C.C. 1316 on page 7 thereof, item 290; supplement 14 to I.C.C. 1316 on page 8 thereof, item 290; W. J. Kelly, agent—Supplement 13 to I.C.C. 917 on page 7 thereof, item 290; supplement 14 to I.C.C. 917 on page 8 thereof, item 290.

It further appearing, that said schedules provide certain rules and regulations requiring the prepayment of freight charges on traffic from points in the United States to points in Canada, and the rights and interests of the public appearing to be injuriously affected thereby, and it being the opinion of the Commission that the effective date of the said schedules contained in said tariffs should be postponed pending said hearing and decision thereon; it is further ordered, that the operation of the said schedules contained in said tariffs be suspended, and that the use of the rates, charges, regulations and practices therein stated be deferred upon interstate traffic until Dec. 16, unless otherwise ordered by the Commission, and no change shall be made in such rates, charges, regulations and practices during the said period of suspension unless authorized by special permission of the Commission. It is further ordered, that the rates and charges thereby sought to be changed shall not be increased, and the regulations and practices thereby sought to be altered, shall not be changed by any subsequent tariff or schedule, until this investigation and suspension proceeding has been disposed of, or until the period of suspension and any extension thereof has expired, unless authorized by special permission of the Commission. And it is further ordered, that a copy of this order be filed with said schedules in the office of the Interstate Commerce Commission, and that copies hereof be forthwith served upon the carriers parties to said schedules, and upon agents F. A. Leland and W. J. Kelly, and that said carriers parties to said schedules be made respondents to this proceeding, and that they be duly notified of the time and place of the hearing above ordered.

**The Wrong Train.**—"Why didn't you put my luggage in as I asked you?" angrily demanded a passenger of a porter as his train was moving off. "I did," shouted back the porter; "yer luggage has more sense than yerself. Ye're in t' wrong train."

# Traffic Orders by Board of Railway Commissioners.

### Exportation of Coal Partly Prohibited.

General order 301. July 22.—In the matter of the question of coal supply in Canada, and the powers conferred upon the Board by chap. 66 of the acts of the Parliament of Canada, 1920: Upon its appearing to the Board that there is a real or apprehended scarcity of coal, with a view to conserving the supply, and in pursuance of the powers conferred by the said act, the Board doth order that the exportation of coal from the Atlantic, St. Lawrence River and Gulf ports of Canada, except to the United States or to Newfoundland, unless otherwise permitted, and in accordance with regulations to be promulgated by the Board, be prohibited on and after Aug. 1, 1920.

### Joint Through Rates from the U.S. to Canada.

General order 303. Aug. 13.—Re international railway rates, fares and charges, as affected by Interstate Commerce Commission's order, July 29th, 1920, ex parte 74: Whereas the Interstate Commerce Commission, by its order dated at Washington, D.C., July 29, has granted carriers operating in the United States certain increases in their rates, fares and charges, as set out in the report of the said Commission, made part of its order, and the said increases being thereby made applicable also to the proportions of joint through rates to or from Canada, accruing within the United States, all of which may be made effective upon not less than five days notice; and whereas it is deemed by the Board to be expedient in the public interest that the continuity of joint through rates from points in the U.S. to points in Canada, and vice versa, should be preserved. Therefore, in pursuance of the powers conferred upon the Board by sec. 324 of the Railway Act, 1919, and of all other powers possessed by the Board in that behalf, it is ordered

That the proportions of through rates, fares and charges between the U.S. and Canada, fares in both directions, in effect at the date of this order, accruing within Canada, may, by general or blanket supplement to existing tariffs, be increased to the extent that the through rates, fares and charges shall conform to the increases authorized by the Interstate Commerce Commission's said order; except on coal and coke, increases on which are reserved pending the judgment of the Board in the application of Canadian carriers for increased rates within Canada.

2. That the through rates and fares from points in Canada to points in the U.S., so increased, may be published and filed to become effective on or after Aug. 26, upon not less than five days notice.

### Special Freight Tariffs to Atlantic Ports for Export.

General order 304. Aug. 19.—Re special tariffs on freight traffic to Montreal, Quebec, St. John, West St. John, and Halifax, for export: Whereas the rates and charges on freight traffic from Unit-States shipping points to U.S. Atlantic ports will be increased on Aug. 26, by authority of an order of the Interstate Commerce Commission, dated July 29; and the Board, by its general order 303, dated Aug. 13, 1920, has authorized increases in the freight rates and charges from Canada to the U.S. in conformity with the said Interstate Commerce Commission's order; and whereas it is expedient in the public interest that the relationship between the rates and charges from Canadian shipping points on freight traffic to the ports of Montreal, Quebec, St. John, West St. John, and Halifax, for export, and those to U. S. Atlantic ports be continued: Therefore, in pursuance of the powers conferred upon the Board by sec. 325 of the Railway Act, 1919, and of all other powers possessed by the Board in that behalf, it is ordered that the said rates and charges on export freight traffic from Canadian shipping points to Montreal, Quebec, St. John, West St. John, and Halifax may be increased in conformity with the said relationship, to become effective on or after Aug. 26, on not less than five days notice.

### Interstate Freight Traffic Passing Through Canada.

General order 305. Aug. 19.—Re matter of reconsigning rules and penalty charges for detention of equipment in interstate traffic passing through Canada: Whereas the Interstate Commerce Commission has, by its Special Permission 50,321, dated at Washington, D.C., July 31, authorized the publication of revised reconsigning rules, applicable on all freight in open top cars, and coal and coke in all cars, and emergency penalty charges for detention to all open top cars, and cars loaded with lumber, coal or coke, to be made effective upon not less than five days notice; and the Canadian Freight Association, in behalf of Canadian carriers engaged in interstate traffic passing through Canada, has applied to the Board for permission to publish and file tariffs in accordance therewith, it is ordered that Canadian carriers of the said interstate traffic be permitted to publish and file tariffs in accordance with the said Interstate Commerce Commission's Special Permission, to apply, at points in Canada, only on traffic en route from any point in the U.S. through Canada to any destination also in the U.S.

### Minimum Carload Weights on Grain, Etc., from the U.S. to Canada.

General order 306. Aug. 27.—Re minimum carload weights of grain and grain products moving from the United States into Canada, and rules and regulations applicable thereto: Whereas the Interstate Commerce Commission has, by its special permission 50450, dated at Washington, D.C., Aug. 21, as amended, authorized the publication and filing, on one days notice, of special supplements to the tariffs of U.S. carriers establishing increased minimum weights on grain and grain products, in carloads, and rules and regulations applicable thereto, renewing and extending from Sept. 1 to Dec. 31, the said tariffs which would otherwise expire Aug. 31, in accordance with the Interstate Commerce Commission's special permission 49801, Mar. 17, 1920, and the Board's special authority 123, Mar. 29, it is ordered that the said special permission 50450, as amended, be approved with respect to the said traffic moving from points in the U.S. to destinations in Canada.

### Interswitching at Cornwall.

29,930. July 30.—Re proposed cancellation by the Canadian Pacific and Grand Trunk Rys. and New York Central Rd. of the existing interswitching arrangements with the Cornwall St. Ry., Light & Power Co. at Cornwall, Ont., to take effect Aug. 2: In pursuance of the powers conferred upon the Board by sec. 325 of the Railway Act, 1919, and of all other powers possessed by it in that behalf, the Board orders that those portions of the undermentioned schedules which would, on Aug. 2, 1920, abrogate the existing interswitching arrangements with the Cornwall St. Ry., Light & Power Co. be suspended until further order of the Board, viz., C.P.R. Supplement 6 to C.R.C. no. E-3668, G.T.R. Suplement 5 to C.R.C. no. E-4075, New York Central Rd. C.R.C., N.Y.C. 2139.

### Demurrage on U.S. Government Cars at Drummondville.

J. Hardwell, Chief Traffic Officer, Board of Railway Commissioners, made the following report to the Board on July 9 in the case of the United States Ordnance District Salvage Board vs. Canadian Car Demurrage Bureau:—This is an application of the United States Ordnance District Salvage Board, New York, for relief from demurrage amounting to $7,535, which accrued at Drummondville, Que., during May and June, 1918, on 74 tank cars of U.S. Government ownership, sent in over the C.P.R. for the purpose of removing a large quantity of acid stored on U.S. Government account in the Aetna Explosives Co.'s plant, the removal having been necessitated by a change in the ownership of the plant. An error of $10 is disclosed in the case of one car, 387, which reduces the amount to $7,525, which total includes a deduction already made of $410 to "bunching" in transit to Drummondville.

Adverting to the contention of the C. P.R. that had the cars not been consigned and waybilled to Drummondville they would not have been accepted from the U.S. carrier; the reason for the requirement in the Car Service Rules of the American Railroad Association (adopted by the Canadian railways) that empty tank cars be accompanied by waybills is that these cars are subject to reconsignment from point to point, instead of to the usual rule of returning direct to the home road or owner. For example, a private refrigerator car loaded with meat at Chicago for Montreal is returned empty to Chicago—the owner desires no other disposition, in fact he demands prompt return; but a private tank car loaded at Chicago may, when emptied at Montreal, be reconsigned empty to New York or any other U.S. point; hence the need of the waybill which is not required for the refrigerator car. But the tank car waybill is merely an operating detail—it carries no charges, while the ordinary waybill is a bill of charges due from the consignee, unless shown prepaid, and is not essential to the routing of the car for which other means could be available. The company's argument would, however, take the tank out of the ordinary empty car category and make it a consignment; in other words, the empty would be treated as if loaded and subject to demurrage at destination. If the cars had been refused at Adirondack Jct., the no-waybill technicality could have been the only reason, for the cars would be carded to Drummondville and the C.P.R. would be alive to the fact of the large volume of traffic waiting for them at that place, and it is not pretended that the company was in a position to supply tanks of its own.

Over and over again the railways, including the C.P.R., have said that in the interest of the public and their own it is the cars they want and not demurrage, and hence the plea for higher demurrage tolls, and that the ideal situation would exist in prompt release of cars and no demurrage. Here, however, was a case where the cars were not wanted elsewhere by the railway or by any other shipper, and yet the full scale of penalty tolls is insisted upon. In my opinion the old blanket toll of $1 a day should be sufficient compensation for the use of the tracks at Drummondville, and I would include the 33 cars which the Car Demurrage Bureau reports were delayed the entire period on the Aetna Co.'s own tracks, having regard to applicants' admission that the cars were sent to Drummondville in numbers exceeding the shippers' facilities for loading. I would, however, authorize the exaction of the full schedule on the 10 cars, which, according to the Bureau, were not required, and were sent back empty, and on which, therefore, the C.P.R. received no revenue; this in line with the Board's ruling in the Proctor & Gamble case at Vancouver. This recommendation would reduce the bill from $7,525 to $3,359, assuming the figures given me by Mr. Collin's office to be carrect.

The Board adopted the report of the Chief Traffic Officer as its judgment.

### Demurrage on Private Sidings.

On the application of the Canadian Manufacturers' Association on behalf of F. R. Stewart & Co., Vancouver, B.C., for a ruling that a consignee who has more than one private siding, or who may require alternative public team track delivery, is entitled under the Canadian Car Demurrage Rules to notification of arrival and to the 24 hours free time allowance of rule 3 to give orders for special placement, the Board gave the following ruling July 27:—

Rule (a) makes provision for 24 hours free of demurrage for various purposes, including the giving of orders for special placement by consignees not served by private sidings or industrial interchange tracks; hence a consignee served by a private siding is except from the 24-hour allowance, but is entitled to it in connection with the second movement if a car which would be customarily placed at a private siding is desired elsewhere, either at another private siding or at a public team track.

### Rule on Automobile Tire Chains.

In the case of the American Audit Co., Spokane, Wash., vs. Canadian Freight Association, which was heard at Ottawa, May 18, J. Hardwell, Chief Traffic Officer, Board of Railway Commissioners, made the following report Aug. 3:—On June 29, 1918, a shipment weighing about 14,000 lb. was made from Victoria Park, Ont., to Vancouver, B.C., on which the 2nd class lake and rail rate of $3.10 per 100 lb. was charged, under the following rating of Supplement 5, Nov. 1, 1915, to Canadian Freight Classification 16: "Chains: automobile tire, in boxes or barrels, 1.c.l., 2nd class." Applicants describe the shipment as 28 barrels of auto chain. According to information furnished by the shippers, the Dominion Chain Co., to the Chairman of the Canadian Freight Association, it consisted of complete auto tire chains and a few extra parts for repairs.

The original application claimed the benefit of the following item 890 A of Supplement 3, effective Feb. 12, 1917, to Canadian Freight Association Westbound Commodity Tariff C.R.C. No. E. 3174: "Chains, n.o.s., including link belting, $1.62 per 100 lb." I interpret this description (the singular number will be noted) to refer to chain in the coil or mass; in other words, to material for refabrication into specific articles of utility. Apparently recognizing the force of the Association's answer that the item "does not apply on made-up chains of any description," claimants by subsequent letter, do not see how the application of another item can be disputed, viz., no. 760 of the tariff itself, reading under the general description of hardware: "Chains, halter, jack and safety, in barrels or boxes, 1.c.l., $1.86 per 100 lb." They say "automobile chains are safety chains, inasmuch as they are used for affording additional safety to automobile travelling when roads are wet and slippery." This, of course, is true; but it will probably be conceded that the attribute of safety is not peculiar to this particular article of chain.

It is a well known tariff principle that commodity descriptions are to be interpreted specifically. There can be no question as to the specific character of the other two chains named in the tariff item quoted; and as to the "safety," the Association contends that this is the "style of chain used for fastening the rubber plug to a basin or bath tub, laundry tub, etc."; further, that "automobile chains have never been known to the trade as either jack chain or safety chain. They are known as automobile tire chains and are so described in all catalogues and literature." Enquiry I have made supports this contention. Tire chains are in tire-circumference lengths, with connecting cross pieces and hook attachments — made-up chains in every sense. They are put up in cotton bags with the words "Tire Chains" printed thereon, and my informant says are so known to the trade and car owners, the term "safety chain" not being used, except, possibly, loosely by the unacquainted. Two of the bags seen were from the same manufacturers as the shipment herein referred to, viz., the Dominion Chain Co., another, similarly marked, was from a factory at St. Catharines.

Not being provided with a commodity rate, the only alternative was the tariff rate under the classification as charged. It may be open to argument whether tire chains should not be given the same rate as the other specified makes, but the answer required of the Board relates to interpretation with a view to reparation, and not to an addition to the commodity tariff list.

This report has been adopted by the Board as its judgment.

## Railway Finance, Meetings, Etc.

**Canadian National Rys.**—There have been deposited in the Department of State at Ottawa the following agreements relating to rolling stock:—Between the Canadian Northern Rolling Stock Ltd., the Canadian Northern Ry. Co., and the Gerard Trust Co., with reference to renumbering of equipment included in Canadian Northern Equipment Trust series 6, 1919, supplementary to an agreement of May 1, 1919; between the Canadian Rolling Stock Ltd., the Canadian Northern Ry. Co. and the Pennsylvania Co. for Insurance on Lives and Granting Annuities, with reference to renumbering of equipment included in Canadian Northern Equipment trust series A, 1918, supplementary to an agreement dated July 1, 1918; between the last named three parties; similarly with respect to Canadian Northern Equipment Trust, series B, 1919, supplementary to an agreement dated Jan. 2, 1919; three agreements between the Imperial Rolling Stock Co., the Canadian Northern Ry. Co. and the Girard Trust Co., with reference to the renumbering of equipment included in Canadian Northern Equipment Trust, series F.I. 1913, series G.I., 1913, and series H.I., 1913, supplementary to agreements dated respectively, Mar. 1, Mar. 1, and Oct. 1, 1913; between the Imperial Rolling Stock Co., the Canadian Northern Ry. Co., and the Philadelphia Trust, Safe, Deposit & Insurance Co. with reference to renumbering of equipment included in Canadian Northern Equipment Trust, series C-1, 1912, supplementary to agreement dated April 1, 1912; two agreements between Imperial Rilling Stock Co., Canadian Northern Ry. Co., and Fidelity Trust Co., with respect to renumbering equipment included in Canadian Equipment Trust series K-I, 1914, L-I, 1916, supplementary to agreements dated Oct. 1, 1914, and Aug. 1, 1916.

**Canadian Pacific Ry.** — In notifying owners of C.P.R. shares deposited with the British Treasury, the Comptroller-General says:—"As the return of this security will necessitate 25,000 separate transfers and the preparation of about 150,000 certificates, it is expected that the C.P.R. Co. will require some time to carry the transactions through. It is, therefore, requested that those owners of the security who do not contemplate a change in their holding between now and Dec. 1 will return the enclosed form A completed at once, to ensure an early completion of the transfer. To those who contemplate dealing with the security, the Treasury, with the view of equalizing the pressure on the company, are willing, on receipt of the treasury certificate accompanied by the enclosed form A and the lodgment order B, to release the security as soon as possible. In this case the additional allowance would cease on the date of release. The Treasury take this opportunity of thanking holders who voluntarily placed their securities at the disposal of the government for the assistance thus rendered to the state."

**Canadian Pacific Ry.**—Dividends were declared Aug. 9 as follows, on common stock 2½% for quarter ended June 30, being at rate of 7% a year from revenue and 3% a year from special income account, payable Oct. 1 to shareholders of record Aug. 31; on preferred stock 2% for the half year ended June 30.

**Edmonton, Dunvegan & British Columbia Ry. Co.**—There has been deposited with the Secretary of State, Ottawa, an agreement, dated June 5, 1920, between the Edmonton, Dunvegan & British Columbia Ry. Co., and the Interior Truck Co., providing for the increase, from 5% to 6%, of the interest payable on the company's 20-year debenture stock, secured by the trust indenture dated Mar. 29, 1919.

**London's First Railway.**—A correspondent, writing about London, Ont., historically, says, among other things: "On Oct. 23, 1849, Col. Talbot turned the sod for the beginning of the Great Western Ry. Sir Allan MacNab, President of the railway, was present. At the evening banquet, Col. Talbot said that 55 years before he had slept on that very spot which he honored in the afternoon. the first train came to London on Dec. 15, 1853."

## Among the Express Companies.

The Interstate Commerce Commission gave judgment Aug. 11, on the application of the American Railway Ex. Co. for increases in class and commodity express rates, and in effect, found as follows:—The proposed increased class and commodity express rates, computed to represent an average increase of 25.16% of present rates, is found no justified on the record, but an increase of 12.5% of present rates is found justified, except that rates on milk and cream may be equalized with those contemporaneously applied by the railway lines between the same points; no adequate ground is disclosed to support the request of shippers for the exception of certain commodities from the application of the increased commodities from the application of the increased rates; a prescription of terminal to terminal rates, to apply in the absence of pick up and delivery service, or deductions from the published rates, where either service is not rendered, is not deemed warranted by the record; no warrant is found for requiring the establishment of carload commodity rates on rubber tires, inner tubes, or fabric, lower than the less than carload, or any quantity, rates, to apply where the shippers load and unload. In concluding, the judgment states that an application is pending for the authorization of the continuance of the consolidation of the express companies, and also for approval of a contract between the express company and railways over whose lines it operates, and it is ruled that nothing in the present judgment, as to rates, is to be taken as prejudicing or forecasting the decision in either of these cases, nor does the judgment take into consideration the award of the U.S. Railroad Labor Board, recommending increases in wages to the express employes, as to which the company has suggested the necessity for a further application or increased rates, after an analysis of the award.

### Dominion Express Company.

D. F. Martin, formerly route agent at North Bay, has been transferred to Toronto.

E. Anderson has been appointed acting agent at Windsor, Ont., vice W. Aitchison, resigned.

J. Bayley, route agent, Eastern Division, spent his holiday by taking a trip out west to visit relatives.

Geo. Allen, of the Kingston staff, has been appointed agent at Kingston, Ont., vice F. W. Carr, transferred.

H. W. Cross, agent at Belleville, Ont., being ill with diphtheria, D. F. Martin, route agent, is looking after the office.

Geo. Padwich .has been transferred from the Claims Department, Toronto, to the Superintendent's office, acting as correspondence clerk.

T. H. McGarrell, formerly agent at London, Ont., has been appointed acting route agent, vice O. A. Sharp, transferred.

N. J. Bauer, heretofore cashier at London, Ont., has been transferred to Windsor as cashier, vice H. F. Roode, appointed cashier at London.

W. J. Malcolm, formerly chief bill clerk at Toronto depot, has been appointed agent at Galt, Ont., vice E. Anderson, transferred.

J. H. Gallant, who entered the company's service as messenger Feb. 1, 1913, has been appointed agent at Summerside, P.E.I., succeeding J. K. Mitchell.

G. S. Johns, formerly statement clerk at Toronto station, has been appointed acting route agent, with headquarters at North Bay, vice R. Murray, transferred.

R. Murray, who was appointed acting route agent at North Bay, Ont., is looking after the Niagara fruit district, with headquarters at Hamilton, Ont., and has W. F. McQueen as assistant.

O. A. Sharp, Route Agent, London, Ont., is in charge of the Leamington fruit district, with headquarters at Leamington, Ont., Mr. Chas. Stewart acting as assistant.

W. B. Knott, heretofore cashier at London, Ont., has been appointed acting agent there, vice T. H. McGarrell, transferred. He and his bride have just returned from a trip to California.

J. Barrett, formerly cashier at Ottawa, who has been appointed agent at Oshawa, Ont., vice M. R. Johnson, entered the service April 1, 1911, at Hamilton, and was transferred to Ottawa Jan. 11, 1915.

T. Kelly, who has been appointed Superintendent's accountant at Toronto, entered the service, Aug. 1, 1910, as stenographer and was appointed correspondence clerk in January, 1915. He enlisted for overseas on Aug. 16, 1915, and returned to his duties as correspondence clerk, Superintendent's office, in Jan., 1919.

## Telegraph, Telephone and Cable Matters.

E. N. Smith, President, Canadian Press Ltd., and D. Campbell, have been appointed on a board of conciliation, to represent employers and employes respectively, in the dispute between the Canadian Press Ltd. and its telegraph operators.

The litigation between the Postal Telegraph Cable Co. and the C.P.R. Telegraphs, whic hwas instituted by the former company Mar. 12, in the U.S. District Court at New York, was discontinued by the court's order, Aug. 19, the plaintiff to pay the statutory costs, and to refund to the C.P.R. $64,978.75, deposited in connection with the case. It is stated that the case was discontinued because the telegraph traffic balances have now shifted in favor of the C.P.R. and have more than offset the amount which was being sued for.

The Dominion Telegraph Co.'s annual meeting was held at Toronto recently. The balance sheet for the year ended June 30 shows assets of $1,302,316.38, compared with $1,306,329.42 for the previous year, and the liabilities of $1,011,923.30, against $1,013,351.25, the balance of profit and loss account being $290,392.99, a decrease of $585.18 from the previous year. The property is leased to the Western Union Telegraph Co. for 99 years from July 1, 1879, the 6% interest on the capital stock being guar antted. The directors for the current year are:—Sir Henry Pellatt, President; Aemilius Jarvis, Vice President; E. Roper, Secretary-Treasurer; G. W. Aitkens, R. Clowry, E. Y. Gallagher, Sir James M. Gibson, and D. B. Hanna; the last named replacing Dr. C. O'Reilly, deceased.

The C.P.R. has made an agreement with its telegraph operators, on the lines of the recent majority award of the conciliation board appointed to deal with the employes' demands for increased wages and improved working conditions. The board recommended that the Morse operators in the first three ratings at the larger offices, such as Hazel Hill, Halifax, N.S., St. John, N.B., Montreal, Ottawa, Toronto, Winnipeg, Moose Jaw, Calgary, and Vancouver, receive an all round increase of $20 a month; other Morse operators to receive increases of about $17 a month according to location. The employes on the Norkrum machines, chiefly females, each to receive increases of $10 a month, and general clerks to receive increases ranging from $5 to $12 a month.

## Proposed British Cable Extensions.

At the Imperial Press Conference at Ottawa, in August, a resolution was adopted recommending that the various governments within the empire increase cable communications and decrease rates, and stating that it is essential that where any government assistance is given to the press by way of cable or other services, it should appear specifically in the public estimates. It was stated that in regard to cable facilities, the empire is really worse off than before the war, although a German owned cable line between Halifax, N.S., and England, is now in British hands. It was suggested that a British cable company be started to compete with the Great Eastern Cable Co. between Great Britain and points in Asia, Africa and India, and that a general cable rate of a penny (2c.) a word be adopted throughout the empire. Sir Roderick Jones, Managing Director of Reuter's Agency, while prepared to support the proposal, was not sanguine of its realization in the near future. The necessity for a better cable service was obvious, as cable traffic had increased enormously within the last few years.

## Cable Communication Between the West Indies.

The recent conference at Ottawa between members of the governments of Canada, the Bahamas Island, Barbados, Bermuda, British Guiana, British Honduras, Jamaica, the Leeward Islands, made the following declaration respecting cable communications, supplementary to the Canada-West Indies Trade Agreement, 1920, full particulars of which are given on page 516 of this issue:—With a view to the further promotion of the purposes of the Canada-West Indies Trade Agreement of even date the representatives of the governments of Canada and of the colonies named in the agreement will recommend for the favorable consideration of their respective governments that direct British owned and British controlled cables should be laid as soon as possible, without waiting for the termination of the agreement with the West Indian and Panama Telegraph Co., to connect Bermuda with Barbados, Trinidad, British Guiana, the Windward Islands, the Leeward Islands, and Turks Island or Jamaica. The Government of Canada will innstitute enquiries as soon as practicable as to the possibility of arranging for the laying of such cables and will communicate the results of these enquiries to the governments of the colonies.

# Electric Railway Department

## Investigation into Ontario Hydro-Electric Railway Projects.

The royal commission appointed by the Ontario Government to investigate the proposed hydro electric railways for Ontario held its first regular meeting in Toronto July 28, Mr. Justice Sutherland presiding. I. F. Hellmuth, K.C., appeared as investigating counsel appointed by the royal commission. The Hydro Electric Railway Association was represented by Robert McKay, K.C., and the Hydro Electric Power Commission by C. S. MacInnes, K.C. Mr. Hellmuth requested that the following information be supplied:—

1. A general map showing the districts to be served by the proposed hydro radial system or systems. This map to have indicated on it the proposed new radial railway lines, together with those railways already acquired or which it is intended to acquire from the Dominion Government. It is desirable that, if possible, this be on a scale not smaller than four miles to an inch.

2. Route maps of proposed new radial railways and those already acquired or which it is intended to acquire.

3. Profiles to accompany the foregoing route maps of the proposed new radial railways; on these it is desired that the nature of the proposed structures, such as bridges, culverts and railway intersections (other than grade) to be indicated.

4. Specifications, or a resume of same, indicating the nature of structures to be used (a) in the construction of the new radials proposed and (b) in the betterments or reconstruction proposed for those railways already acquired or which it is intended to acquire.

5. Estimates of preliminary engineering and miscellaneous overhead costs and of amounts for purchases of rights of way and other lands and roadbed features, etc., necessary to provide for the proposed new radial lines or necessary in connection with the railways intended to be acquired. These to be classified according to the several purposes and distributed according to the various divisions or sections of the proposed system.

6. Estimates of costs of construction itemized in detail for each division or section of (a) the proposed new radial railway lines and (b) the betterments or construction proposed for the railways already acquired or which it is intended to acquire. These details to include such items as weights of rail and other roadbed features and the several classes of overhead construction. It is desired that these estimates include schedules upon which they are based both in quantity and price.

7. Estimates of costs in detail of railway line transmission, telegraphs, telephones, signal systems and other accessories necessary to the proper operation of the lines.

8. General plans, specifications (resume) and detailed estimates of proposed stations and buildings other than terminal, according to the various classes, necessary for the operation of the railways.

9. General plans, specifications (resume) and detailed estimates of termninals, terminal stations, shops and other terminal buildings necessary for the operation of the railways.

10. General plans, specifications (resume) and detailed estimates of costs of the receiving, transformer, switching and other electric stations and buildings required for the reception and application of the necessary electric power for the operation of the various divisions or sections of the railways.

11. General description and detailed estimates of electrical, mechanical and other equipment for the reception and application of the necessary electric power for the operation of the various divisions or sections of the railways (as intended to be contained in the receiving, transformer, switching or other stations). This also to comprise where necessary such transmission lines or connections thereto as are requisite for and chargeable to the railway system and its operation.

12. General description, number, classification (or types), and detailed estimates of cost of new rolling stock intended to be employed in the operation and maintenance of the various divisions of the system proposed, already acquired and to be acquired. These to include locomotive, passenger, goods and work cars and all other rolling stock necessary for the efficient operation as proposed and provided for under the various estimates.

13. Detailed estimates of annual costs of (a) maintenance, (b) operation of each division or section of the proposed new radials and of the railways already acquired or intended to be acquired (including amounts to be set aside for overhead, management, superintendence, upkeep, etc., of the general system). It is desired that separate estimates be made based on operation as at one year, five years and ten years after each division or section is placed in operation. It is desired also that the rates and amounts proposed to be allotted in these estimates for interest, depreciation, sinking fund, taxes, car rentals and other like purposes be particularly specified.

14. An estimate of the amount of power required to be placed at the disposal of the proposed radial railway system for the purposes of the entire and efficient operation of each division or section comprising the proposed new radials and the railway already acquired, and which it is intended to acquire. It is desired that separate estimates be made based on operation as at one year, five years and ten years after each division or section is placed in operation.

15. An estimate of the expected cost per horse power per year with reference to the amounts of power required under the foregoing for each division and section of the system. It is desired that separate estimates be made, based on operation as at one year, five years and ten years after each division or section is placed in operation.

16. Detailed estimates of expected revenue from all sources, classified under the various divisions or sections and itemized under the several classes of business, i.e., passenger, goods, etc. It is desired that separate estimates be made based on operation as at one year, five years and ten years after each division or section is placed in operation. It is desired also that the estimates include statements of the various rates for passengers and goods upon which they are based.

17. It is desired that, if possible, a map or maps be furnished which will indicate graphically or otherwise the density of population and the density or intensity of industrial or other activities along or tributary to the lines of the entire radial railway system as now proposed.

The commission met again in August, going over information which had been received and arranging a programme for future sittings.

### Canadian Electric Railway Association.

**Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.**

**Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.**

**President, A. Gaboury, Superintendent, Montreal Tramways Co.**

**Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.**

**Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.**

**Executive Committee, The President, Vice President, and F. D. Burpee, Manager, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.**

**Official Organ—Canadian Railway and Marine World, Toronto.**

## Glasgow Tramways Buy Rails in the United States.

Canadian Trade Commissioner J. Vernon McKenzie, wrote from Glasgow, Scotland, Aug. 5:—A contract for 10,000 tons of steel rails and fishplates is expected to be awarded very shortly by the Glasgow corporation to the United States Steel Products Co. The sending of this contract abroad has caused a great deal of controversy not only in local municipal circles, but also in the wider field of commerce throughout the country. The corporation invited 21 firms to tender for this order, and out of these only two applied — One United States firm and one English firm, the home firm being £4 10s. a ton higher in price than its foreign competitor. The relative prices were in the neighborhood of £28 and £24. The Glasgow Tramways Committee recommended that the United States Steel Products Co.'s offer be accepted, owing to the fact that there would be a saving of more than £40,000 on the order, but definite acceptance has not yet been given, owing to the fact that, under the standing orders of the town council, agents acting for firms in a foreign country must send to the corporation an authenticated guarantee that the

work will be carried through under trade union conditions. This guarantee has not yet been given, and a member of the council has alleged thta in the U.S. the steel worker is lower paid and works longer hours than in this country, and also that the United States Steel Products Co. with another company was responsible for the failure of a conference of employers and workers called not long ago to form some organization for the prevention of useless strikes. He objected to the steel workers in Scotland and England being exposed to competition from a U.S. company by which trade unions are not recognized. It is presumed that on the receipt of the guarantee the contract will be forthwith awarded.

The General Manager of the Glasgow Tramways has written as follows to the Canadian Trade Commissioner at Glasgow:—"If there are any firms in Canada, rollers of tram rails, to whom future inquiries would be of interest, I shall be glade to receive a note of their names and addresses. In the way of renewals of our track, this present order of 10,000 tons represents our requirements for two years, but there is the possibility that some of the extensions for which we have powers may be gone on with, and used up in about half this time."
in this case the rails might, no doubt, be

If any Canadian manufacturers of tramway equipment suitable for Scotland, or rollers or tramway rails, will communicate with the Trade Commissioner in Glasgow, giving details as to the products they desire to export, arrangements will be made to take the matter up direct with the Glasgow and other Scottish corporations.

# Increases in Electric Railway Passenger Fares.

Brandon Municipal Ry.—It was stated in Canadian Railway and Marine World for July that the Manitoba Public Utilities Commissioner had approved of an increased schedule of fares for the Brandon Municipal Ry. We have since been supplied with a copy of the order, which states that a hearing was held in Brandon, that due consideration had been given to the effect of increases and that an investigation of the railway's operations had been made. Following is a comparison of the old and new fares:—

| | New. | Old. |
|---|---|---|
| Cash . . | 7c. | 5c. |
| Unlimited tickets | 6 for 35c. | 5c. |
| Workmen's tickets | 5c. | 6 for 25c. |
| Children's tickets | 8 for 25c. | 10 for 25c. |

British Columbia Electric Ry. applied recently to the Board of Railway Commissioners for approval of its tariff B.C. E.R. 30, C.R.C. 2, between points on its Central Park interurban line, district 1, between Vancouver and New Westminster. No change is made in the regular fares. Only the commutation fares are affected. At present books of 10-ride and 50-ride tickets are sold. It is proposed to eliminate the 50-ride books entirely and raise the price of the 10-ride books. To certain points there will be an increase of 40%, but the old rates are inequitable and should never have been put in force. One of the reasons for the proposed new tariff is to prevent combinations of rates between Vancouver and New Westminster. By means of combinations it is possible to travel between the two cities for 11c., with a transfer to city lines in both places. The regular fare is 25c. On this line the fare is 5c. from New Westminster to certain points, whereas the regular fare on city lines in New Westminster is 6c. City line passengers have been buying commutation rate books, ostensibly to transfer to the interurban line, but really to travel for 5c. instead of 6c. The new rate on the 10-ride book is approximately 1½c a mile and the lowest combination between Vancouver and New Westminster is 19½c.

The company has also applied to the Board of Railway Commissioners for authority to increase its cash fare in the City of Victoria to 7c.

Calgary Municipal Ry.—On City Commissioner A. G. Graves' recommendation the city council made several changes in fares recently. The cash fare theretofore 5c., has been advanced to 10c.; two tickets are being sold for 15c., four ticketc for 25c., instead of five for 25c. as formerly; and 20 for $1, instead of 22 as formerly. School children's tickets are left at 8 for 25c. The object in raising the cash fare to 10c. is stated to be to eliminate the handling of coppers and making change on the cars. The fixing of ticket rates at 2 for 15c. and 4 for 25c. will, it is believed, cause regular users to buy books of 20 for $1, and thus save the motorman-conductor on one-man cars handling a lot of small change. Following is a comparison of the old and new fares:—

| | New | Old. |
|---|---|---|
| Cash . . | 10c. | 5c. |
| Tickets . . | 2 for 15c. | ..... |
| " | 4 for 25c. | 5 for 25c. |
| " | 20 for $1 | 22 for $1 |
| School children's tickets .... | 8 for 25c. | 8 for 25c. |

Notwithstanding the increase in fares, it is reported that the receipts for the last 15 days of July were $220 a day short of the average daily revenue necessary to meet requirements. Superintendent Brown is reported to have recommended that the schedule of fares as given above be amended by reducing the number of tickets to be sold for $1 from 20 to 18.

The city council is reported to have decided on Aug. 17, by a vote of 7 to 3, to reduce the number of street car tickets sold for $1 from 20 to 18, the altered rate to go into effect at midnight Aug. 17. A press report of Aug. 18 stated that in the interval between the passing and coming into effect of the new rate $6,100 worth of tickets were bought by citizens at the old rate.

Cape Breton Electric Co.—Under an order of the Nova Scotia Public Utilities Commission a new fare schedule was put in operation in Sydney and adjoining municipalities on Aug. 15. The new schedule provides for a 10c. cash fare in the City of Sydney, and in the towns of North Sydney, Sydney Mines and Glace Bay; metal tickets are sold two for 15c., four for 30c., and in even multiples of two at the same ratio, each ticket will be accepted in lieu of a single cash fare. On the Sydney and Glace Bay interurban line the new fare is 7½c. per zone (instead of 6c. as heretofore) on the metal ticket system, the cash fare being 10c. There are five zones on the line, and a passenger can pay all in metal tickets or in metal tickets and cash. Through the five zones from Sydney to Glace Bay the ticket fare is 37½c. and the cash fare 40c.

Fort William Municipal Ry.—The Fort William, Ont., city council has under consideration a proposition for increasing fares. A zone system has been suggested, but a press report states this is not favored by some of the members of the council's utilities committee, and that the new fares will probably be:—Cash, 7c., or 4 tickets for 25c.; children's fare, 3c., or 10 tickets for 25c.; school children's fare between 8 and 9.30 a.m. and 3.30 and 5.30 p.m., 5c., or 8 tickets for 25c. It was expected that the new fare schedule would be approved in time to put it in operation Sept. 1.

Regina Municipal Ry. — The Regina, Sask., city council, on Aug. 4, approved of a new fare schedule for the Regina Municipal Ry., effective Aug. 5, which is compared with the old one as follows:—

| | New. | Old. |
|---|---|---|
| Cash . . | 10c. | 5c. |
| Tickets . . | 2 for 15c. | ..... |
| " | 4 for 25c. | 5 for 25c. |
| " | 17 for $1 | 21 for $1 |
| Children under 14— | | |
| Cash . . | 5c. | ..... |
| Tickets . . | 8 for 25c. | 10 for 25c. |
| Workmen's tickets | Abolished | 8 for 25c. |

Kingston, Portsmouth & Cataraqui Electric St. Ry.—A press report, Aug. 26, stated that the Kingston, Ont., city council had under consideration an application from the company for permission to do away with the sale of tickets at reduced prices, and to charge a straight 5c. fare.

Montreal Tramways Co.—Owing to the increased wages awarded to the employes by a board of conciliation, to date from July 1, it is estimated that $800,000 will be added to the company's wage bill for the year. Under the circumstances the company applied to the Montreal Tramways Commission to permit the charging of increased fares. The Commission on Aug. 20 authorized certain increases from Sept. 1, the new rates comparing with the old as follows:—

| | New. | Old. |
|---|---|---|
| Cash fare | 7c. | 7c. |
| Tickets . . | 4 for 25c. | 5 for 30c. |
| " | 50 for $3 | 44 for $2.50 |

The above fares are within the uniform territory from 5 a.m. to midnight. There is no change in the after midnight rate, which remains at 15c.; school children's tickets, 7 for 25c., are also unchanged. The rates outside the uniform territory are not changed.

The Toronto Suburban Railway's Standard Passenger Tariff, C.R.C. 1, which applies to its interurban lines only, and which was approved by the Board of Railway Commissioners in July, as stated in Canadian Railway and Marine World for August, is based on a rate of 2.875c. a mile. The rates previously in force were limited to 2c. a mile, under the Ontario Railway Act, but the line is now under Dominion jurisdiction, owing to its absorption by the Canadian National Rys.

Winnipeg Electric Ry.—A Winnipeg press dispatch of Aug. 23 states that the Manitoba Public Utilities Commission gave judgment on that day on the company's application for power to charge increased fares on its lines in Winnipeg, and on the suburban lines owned by its subsidiaries, the Winnipeg, Selkirk & Lake Winnipeg Ry. and the Suburban Rapid Transit Co. The Commissioner is reported to have announced that the increase granted are to give the companies affected a return of 8% on their invesement. The estimates of the increases necessary were based on computations and valuations made by expert appraisers. The company's plants were valued at $24,369,431. The increased

fares allowed will provide an additional $450,000 annual income, according to street railway officials. Wage increases recently granted employes will absorb $300,000 of this amount, they said, and the balance will be devoted partly to suburban extensions and partly to paying a dividend to shareholders. The $400,000 increase in calculated on a basis of an annual paying passenger list of 60,000,000. The average fare will be raised from 5½c. to 6¼c. The cash fare is to be 7c. on the city lines instead of 6c. as heretofore, 4 tickets to be sold for 25c.; workmen's tickets are abolished, but school children's tickets to remain the same as heretofore, 8 for 25c. The new fares are to go into operation Sept. 1.

The fare from Winnipeg to Selkirk is raised from 60 and 80c. to 75 and 90c. The Headingly and other suburban lines are put on the zone system, with a 5c. fare in each zone. It is stated that the City Solicitor announced that an attempt would be made to have the decision modified.

The company is reported to have announced Aug. 24 that tickets which were sold at the old rates could not be used after Sept. 1, but would be redeemed at the company's offices at the price paid for them, and that a new series of tickets would be issued at the new rates.

## Electric Railway Projects, Construction, Betterments, Etc.

**Calgary Municipal Ry.**—Press reports state that tenders will be received to Sept. 21 for the construction of a street railway crossing, and that an estimate has been prepared showing that the cost of the proposed extension of the line on Centre St. north will be $9,475, exclusive of rails. (July, pg. 392.)

**Cape Breton Electric Co.**—A press report of Aug. 20 stated that the City Solicitor of Sydney, N.S., was about to take up the question of the extention of the Cape Breton Electric Co.'s railway lines in Sydney, with the Nova Scotia Public Utilities Commission. (June, pg. 316.)

**Chatham, Wallaceburg & Lake Erie Ry.**—A press report states that local merchants are of opinion that instead of tearing up the Chatham, Wallaceburg & Lake Erie tracks on King St., Chatham, Ont., before putting down new pavement, the city council should apply to the Hydro Electric Power Commission of Ontario to take over the railway and extend it from Erie Beach to Government Park, Morepeth, Ridgetown, Thamesville, Florence and Dresden. A line through these places would, it is stated, serve a large area now without railway facilities. (Jan., pg. 34.)

**Grand River Ry.**—A press report states that plans filed with the Galt, Ont., city council for a new right of way through the city provide for taking the line off the streets and carrying it along a private right of way, starting from Hunter's corner, passing under the subway beside the G.T.R. and the C.P.R., and then paralleling Mill Creek into the center of the city to the C.P.R. yards, to which point the Lake Erie & Northern Ry. runs. Between the crossing of Dundas and Main Sts. the line will be double track, the building of which work will necessitate the removal of the C.P.R. freight shed. A passenger station will be built at Main St., and a spur line will be run to the C.P.R. station. The work which the company has in hand on the north end of the line is reported to be practically completed, so that it is expected that the work in Galt will be put in hand at once and completed in time for the operation of traffic over the new route about the time the company's franchise along Water St. expires, viz., Feb. 2, 1921. Another reason for making the change of route is to bring the line up to the same standard as the Lake Erie & Northern Ry., to run heavier traffic over it, and to eliminate stops. (Mar., pg. 145.)

**Hamilton, Grimsby & Beamsville Electric Ry.**—We are officially advised that it is proposed to rebuild the car barn at Beamsville, Ont., which was destroyed by fire Dec. 28, 1919. (Feb., pg. 81.)

**Hamilton St. Ry.**—A press report states that the Dominion Power & Transmission Co. proposes to start work immediately on the laying of additional tracks in the west end of Hamilton. The projected line is from Margaret St. to Paradise Row, and thence westerly to within 800 ft. of the Hamilton & Dundas Ry.

We are officially advised that it is proposed to build about two miles of new line westerly on King St., to the McKilrick survey. (Aug., pg. 450.)

**Hydro Electric Ry., Essex Division.**—We were officially advised Aug. 10 that it was expected to begin laying about a mile of second track on London St., Windsor, Ont., between Aug. 23 and 30. (July, pg. 392.)

**Levis County Ry.**—A press report of Aug. 18 stated that the company was straightening a portion of the line in Levis, Que. (Dec., 1919, pg. 675.)

**Montreal Tramways Co.**—We are officially advised that the company is reconstructing about nine miles of its track in Montreal, and in Outremont, and that it is also building a substation on Cote St., Montreal. (Aug., pg. 450.)

**New Brunswick Power Co.**—We are officially advised that the company is building a 3,000 ft. extension of its line in East St. John, N.B., the material for which is on hand.

Referring to criticisms as to the betterments work in progress on the lines in St. John, N.B., T. H. McCauley, General Manager, is reported to have said Aug. 7 that the material being put in at the corner of Charlotte St. and King Square, while not bought recently, is not worn; it had been installed at another point but was not used. The spacing of ties is good standard work; concrete is a superior foundation to wood and will last longer. Special attention is being given to bonding before the work is completed so as to eliminate, as far as possible, electrolysis to water and other mains. "The company," added Mr. McCauley, "is not desirous of evading its obligations in any way, but is willing to more than keep pace with the city in any reasonable undertaking." (Aug., pg. 450.)

**Niagara, St. Catharines & Toronto Ry.** A press report states that the company proposes to build a car shop at St. Catharines and that G. C. Briggs, Architect, Canadian National Rys., Toronto, has prepared the plans. (Dec., 1919, pg. 670.)

**Nova Scotia Tramways & Power Co.**—A press report states that a committee representing the Halifax, N.S., City Council, and representatives of the N. S. T. & P. Co., after discussing the city paving situation as it affects the company, waited on the Nova Scotia Premier on Aug. 4 to arrive at a plan by which the company could be financially aided so that the paving might be proceeded with. (Jan., pg. 34.)

**Ottawa Electric Ry.**—A press report states that an automatic switch has been installed at the corner of Banks and Sparks streets, and that two other similar switches will be installed at Elgin and Sparks Sts., and one at the corner of Rideau and Sussex Sts. (May, pg. 257.)

**Peterborough Radial Ry.**—A press report states that a report on proposed extensions of this railway in Peterborough, Ont., and vicinity, has been completed by the Hydro Electric Power Commission of Ontario's engineering staff. (May, pg. 257.)

**Quebec Ry., Light & Power Co.**—We are officially advised that the company has under consideration an extension of about half a mile along Marie Bourgeois Ave. (formerly named Levis Ave., from St. Cyrille St. to St. Foy Road, Quebec. This matter was under discussion with representatives of the city council, Aug. 13, and a press report states W. J. Lynch, General Manager, promised that construction would be started immediately and that the line would be ready for operation in the autumn. (Aug., pg. 450.)

**Saskatoon Municipal Ry.**—A press report states that Saskatoon, Sask., ratepayers have passed a bylaw authorizing the building of a second track on a portion of the Saskatoon Municipal Ry. lines at a cost of about $3,000. (Dec., 1919, pg. 670.)

**Toronto Civic Car Lines.**—The construction of a permanent double track line on Bloor St. from Runnymede Road to James St., at a cost of $104,245, has been recommended by the City Works Commissioner and the matter is under consideration by the city council. (Aug., pg. 450.)

**Toronto Ry.**—A frame car barn is being built at the corner of McLean Ave. and Queen St east, Toronto. (Feb., pg. 81.)

**Winnipeg Electric Ry.**—A press report of Aug. 13 stated that representatives of the Winnipeg City Council were negotiating with the company for continuing to Keewatin St., a temporary track which is already laid on Logan Ave. more than half way to the C.P.R. Deloraine Branch.

The reconstruction of the car barns at Main St. and Assiniboine Ave., destroyed by fire some months ago, is reported to have been started. The reconstructed building will be of reinforced concrete throughout, somewhat longer than the old one, with concrete floor and wired glass windows. It will accommodate 50 cars. Pratt & Ross are the architects and the contract is reported to have been let to Claydon & Co., the estimated cost being $60,000. (Aug., pg. 450.)

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**Minneapolis Street Car Fares.** — A press report states that the Minneapolis, Minn., City Council has passed an ordinance authorizing the Twin Cities Rapid Transit Co. to charge a 7c. fare as from Aug. 16 and that if this does not produce sufficient to equal the 1919 surplus, a 7c. cash fare is to be charged from Dec. 15 with 4 tickets for 25c.

# Electric Railway Employes' Wages, Working Conditions, Etc.

London St. Ry.—A press report of Aug. 22 states that under the Ontario Railway and Municipal Board's management of this railway for July there was a surplus over operating and certain fixed charges of $600. Under the arrangement with the employes this surplus has to be distributed by an increase of wages, and a bonus of 1c. an hour was therefore declared. The men are reported to be dissatisfied with conditions, claiming that they were given to understand that the rate of wages was to be increased to 48c. an hour. The men ask that the bond redemption fund be abandoned and that the money so released be used for payment of increased wages. The company and the Ontario Railway and Municipal Board refuse to agree to this. It is reported that the men are now demanding 52c. an hour, and that if this rate is not granted there will be a strike early in September.

Montreal Tramways Co.—In April the conductors and motormen demanded increased wages and improved working conditions, including an 8-hour day. The rate per hour asked for by them in comparison with the rates then in force was:

| | Existing. | Asked. |
|---|---|---|
| First year . . | 37c. | ..... |
| First 3 months | ..... | 70c. |
| Next 9 months | ..... | 72c. |
| Second year . | 40c. | 75c. |
| Third year | 44c. | ..... |
| After third year | 48c. | ..... |

The company on May 7 declined to accede to the demands, and the matter was subsequently discussed between representatives of the employes and the Montreal Tramways Commission. The men were advised that the Commission was determined not to increase the fares this year, and pointed out that it would not be possible to provide the all round wages increase asked for by adding at least 2c. to the existing fares, adding that it might be found possible to provide funds for a bonus, which, however, would fall far short of the amount asked for. It was subsequently stated that the amount available for this suggested bonus did not exceed $300,000, and that its distribution would not include the men on the cars, whom the commissioners considered were sufficiently paid. A planof insurance up to $1,000 was also offered. The men refused these offers on May 27 and applied for a board of conciliation, which was appointed June 10, and was composed of Justice Archambault, chairman; E. W. Villeneuve, representing the company, and J. A. Woodward, representing the men. The Board's unanimous report, dated Aug. 3, reviews the problem before it as it affects the company, its employes and the public; lays down certain general principles which must be recognized in arriving at a decision, and then examines in dtail the questions of the prevailing conditions of employment on the company's lines and the rate of wages earned and the cost of living, as well as the cost of transportation to the company, and the probable effect of increased expenses necessitating an increase of fares. In conclusion, the board said: "Before setting down the figures which we have decided upon, we wish to state that we have, to the best of our ability, analyzed the evidence and weighed with care all the arguments submitted, with a desire to give to the employes the greatest possible measure of advantage compatible with the intangible rights of the public and the resources of the tramway's enterprice. We recommend that the following scale of wages shall be accepted, with retroactive effect to July 1." The schedule attached deals with all departments of the company's employes, the portion affecting conductors and motormen being as follows:—First year, 45c. an hour, instead of 37c. Second year, 50c., instead of 40c. After the second year, 55c., instead of 44 and 48c.

"Under the existing scale of pay and conditions of work, 3½% of the conductors and motormen earn 37c. an hour; 11 2/5% earn 40c.; 7 4/5% earn 44c.; 70 3/10% earn 48c. Under the proposed scale: 3 5/10% will earn 45c.; 11 4/10% will earn 50c.; 85 1/10% will earn 55c.

"With regard to the other employes we recommend substantial increases for all of them."

The men met Aug. 5 to consider the report, and passed a resolution rejecting it, and authorizing the presentation of an ultimatum to the company calling for the acceptance of the original demands in full within 24 hours. The company announced Aug. 6 that it coul dnot meet the men's demands. On Aug. 7 the men held another meeting, after having announced that in the event of a strike being decided upon the men would go out on Aug. 9. A more conciliatory attitude was taken by the men at the meeting Aug. 7, and a further conference was arranged to take place with the company's representatives. A press report states as a result of the conference concessions have been made by the company, and that the executive of the men's association on Aug. 13, recommended the acceptance of the award. A meeting of the men was held on Aug. 14. They decided by a vote of 1,699 to 547, to accept the board's award, subject to an amendment, agreed upon, regarding shopmen.

New Brunswick Power Co.—The agreement arrived at recently between the company and the Amalgamated Association of Street and Electric Railway Workers of America, Division 663, covering the street railway employes in St. John, effective from June 15, and is to continue in force until June 15, 1921, and yearly thereafter unless mutually changed, notice of any change desired to be given 30 days before the expiration of any year. The agreement covers working conditions, fixes a 9-hour day for motormen and conductors and uniform men; an allowance of 10c. an hour extra to motormen and conductors when called upon to operate snow ploughs and sweeper equipment, and provides for the appointing of a grievance committee. Following are the rates of wages per hour fixed in the agreement compared with the former rates paid conductors and motormen:—

| | Old rate. | New rate. |
|---|---|---|
| First 6 months | 39c. | 49c. |
| Second 6 months | 41c. | 51c. |
| After one year | 43c. | 53c. |
| After two years | 45c. | 55c. |

Time and a half is to be paid for overtime, and on holidays, and 10c. an hour extra to uniform men required to work on Sunday.

It is said that the signing of the wages agreement was held up owing to the company's wish to insert a section providing for the operation of such cars. After some negotiation a document was drawn up and signed by T. H. McCanley, General Manager, on behalf of the company, and by F. A. Campbell and P. Moore on behalf of the men, providing "That a further agreement be drawn up to the effect that the company may finish changing one or two cars as already started, that same be given a demonstration by the company, and that in the event of such cars proving satisfactory to the city commissioners and citizens, that the employes and company agree to further negotiate as to the safety and reasonableness and wages and working conditions of operating the same." In the event of the negotiations not terminating in an agreement, both sides agree to submit the matter to arbitration or to conciliation under the Lemieux Act.

Toronto Suburban Ry.—The board of conciliation presented majority and minority reports Aug. 8. The majority report, signed by Judge Barron, chairman, and G. D. Kelley, representing the company, recommended the granting of 15% increase to the men employed on an hourly basis, and an increase of $10 a month to those paid by the month. L. Braithwaite, representing the men, recommended greater increases.

Winnipeg Electric Ry.—The employes submitted to the company on April 8 a draft of an agreement as to wages and working conditions which they demanded to have put in operation on the expiry of the then existing agreement on May 1. The old and the proposed rates of wages per hour were as follows:—

| | Old | | Proposed | |
|---|---|---|---|---|
| | Week-days | Sundays | Week-days | Sundays |
| First 6 months | 46c. | 51c. | 80c. | 90c. |
| Second 6 months | 49c. | 54c. | 85c. | 95c. |
| After 1 year | 52c. | 57c. | 90c. | $1 |
| After 2nd year | 55c. | 60c. | ..... | ..... |

An agreement not being reached by negotiation, a board of conciliation was appointed, consisting of Judge Myers, chairman; C. E. Dafoe, representing the company, and R. S. Ward, representing the men. The board held its first sitting May 19, and sat on three other days in May, and on six days in June, hearing evidence and arguments. A majority report, dated July 5, signed by Judge Myers and C. S. Dafoe, and a minority report of the same date, signed R. S. Ward, were forwarded to the Minister of Labor. The majority report stated that the board had granted certain concessions to the employes respecting passes, platform time, overtime and an amount guaranteed as weekly wage to extra men. The amount granted as an increase in wages would place the employes in more favorable circumstances than street railway employes in most of the Canadian cities, and on a par with those in Toronto. The report added: "The terms of the proposed agreement and schedule are fair to all parties, considering the circumstances." The wages schedule recommended for conductors and motormen was as follows per hour.

| | Week days. | Sundays. |
|---|---|---|
| First 6 months | 50c. | 55c. |
| Second 6 months | 53c. | 58c. |
| Second year . | 57c. | 62c. |
| Third year and after | 60c. | 65c. |

Extra men to be guaranteed $20 a week, instead of $18 as formerly. Mr. Ward, in his minority report, recommended certain other concessions as to uniforms, etc., but added: "Although I am convinced that the changes in working conditions asked for by the men were reasonable, and, with some slight modifications should have been granted, I could have signed the report if an equitable increase in wages had been secured." He recommended that the increases of wages granted by the majority report

should be doubled. The company accepted the majority award, but the men declined to do so. The question of a strike was discussed, and on a vote it was decided not to strike and finally the majority award was accepted and the new agreement was signed Aug. 2. The new rate of wages dates from May 1, when the old agreement expired.

## The Toronto Railway and City of Toronto.

The Toronto Ry. Co. has acquiesced in the city's decision to take over the company's railway property, according to the terms of the original agreement, when the franchise expires in Sept. 1921, and it passed the following bylaw July 30:—

"Whereas the corporation of the City of Toronto passed a bylaw on June 21, 1920, numbered 8448, to provide for giving of notice to the Toronto Ry. Co. of the intention of the corporation of the City of Toronto to take over certain real and personal property of the Toronto Ry. Co. as therein mentioned. And whereas the said bylaw and the notice thereby authorized to be given to the Toronto Ry. Co. were duly served on the company on June 26, 1920. And whereas the Toronto Ry. Co. acquiesce in, assent to and accept the action of the corporation of the City of Toronto in the enactment of the said bylaw and the giving of the said notice. Be it therefore enacted that the Toronto Ry. Co. acquiesce in, assent to and accept the determination of the corporation of the City of Toronto to take over all the real and personal property of the company necessary to be used in connection with the working of the railways which the said corporation is entitled to take over under the provisions of the act of incorporation, agreement and conditions therein mentioned. And be it further enacted that a duplicate of this bylaw be served upon the corporation of the City of Toronto."

Glasgow Tramway Fares:—Canadian Trade Commissioner J. Vernon McKenzie, Glasgow, Scotland, writes:—

"In Glasgow there is no longer a chance for the thrifty Scotsman to take a ride on his tram for a wee bawbee. A short while ago the minimum fare on the Glasgow tramways was raised from a halfpenny to a penny, one of the last of the necessities of life to be hit by the increased cost of living in this country. Tickets, or as they are called here, 'tokens,' if bought at certain specified depots, may still be procured at 16 for 1s., thus reducing the cost of travelling 'a minimum stage' to three-fourths of a penny. No tokens are sold on the trams. Glasgow tramways have long been famous throughout the world as perhaps the leading exemplification of municipal enterprise, and they have been particularly noted for their efficiency and economy. A passenger in Glasgow may ride 1.15 mile for his penny; the highest fare paid is 8d., for which he is entitled to travel from one of the city's suburbs to another, 14½ miles."

Windsor, Ont., City Council's industrial committee invited the operating officials of the Hydro Electric Ry. Essex Division to a conference on Aug. 3, to discuss the service given in the city by the recently taken over Sandwich, Windsor & Amherstburg Ry. It is reported that the officials said it was hoped to put on five more cars within a short time.

# Mainly About Electric Railway People.

W. E. Blodgett, heretofore Secretary-Treasurer, Utah Light & Traction Co., Salt Lake City, has been appointed Comptroller, Winnipeg Electric Ry., and subsidiaries, in charge of all accounting, succeeding A. R. Ross, Internal Auditor, resigned.

Frank L. Butler, heretofore General Superintendent, Winnipeg Electric Railway Co., has been appointed Manager, with charge of operation and maintenance of the company's electric railway, light, power and gas industries, and also of the subsidiary companies, Suburban Rapid Transit Co. and Winnipeg, Selkirk & Lake Winnipeg Ry. He began his transportation work in 1894, when he entered the service of the Vandalia Rd., now a part of the Pennsylvania Lines, remaining with that company in various capacities, and at different points, till 1909, when he was appointed Superintendent, Denver & Inter Mountain Ry.,

F. L. Butler,
Manager, Winnipeg Electric Railway.

Denver, Col., of which he afterwards became Vice President and General Manager. On Sept. 1, 1911, he was appointed General Manager, Alta, Jacksonville & Peoria Ry., which was then under construction. Shortly afterwards he was appointed its receiver and completed the line to Jerseyville, Ill., remaining as receiver until May, 1914, when the property was sold at a receivership sale. In July, 1913, he was appointed General Manager, Chicago & West Towns Ry., and the Suburban Ry., with office at Chicago, and on April 1, 1918, he was appointed General Superintendent, Winnipeg Electric Ry. The position of General Superintendent, Winnipeg Electric Ry. has been abolished.

W. F. Edwards, heretofore Traffic Inspector, Winnipeg Electric Ry., has been appointed Traffic Superintendent, succeeding A. Macdonald, who resigned on account of ill health and returned to Montreal.

Geo. A. Chapman, Assistant General Claims Agent, the Detroit United Railways, died recently after a week's illness. He was born in 1872, and was a graduate of the University of Michigan. For five years he practiced law at Hudson, Mich., and was connected with the C. H. & D., and Pere Marquette Railroads for a number of years. He entered the Detroit United Railways service Aug. 1, 1916.

T. H. McCauley, General Manager, New Brunswick Power Co., spoke on electric railway matters before the St. John, N.B., Rotary Club, Aug. 16.

John Montgomery, Roadmaster, Toronto & York Radial Ry., Mimico Division, was camping with his family in a large marquee on the lake front at Long Branch. The marquee was destroyed by fire Aug. 14, and, in endeavoring to save some of the contents, Mrs. Montgomery was burned about the arms and shoulders.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., and Mrs. Murrin returned to Vancouver recently, after spending several weeks in England. In addressing the Vancouver Electric Club, shortly after his return, Mr. Murrin said that British investors are watching British Columbia closely, and that all matters concerning the attitude of the public towards public utilities are being carefully noted. Unfortunately, the province's reputation in Great Britain is none too good, and if electrical development is to go ahead very careful attention must be paid to the treatment of capital already invested here. Capital is very much in demand in England for industrial purposes, and whereas 5% was paid formerly, the present rate is around 10%, and Canadian securities will therefore have to pay similar returns if they expect to obtain capital in competition with British industrial issues.

Hon. J. L. Perron, Minister without portfolio in the Quebec Government, and one of the Montreal Tramways Company's counsel, had between $5,000 and $6,000 of silver fox furs, fur coats and muffs stolen from his house recently.

Permanent Charges, Etc. — A large number of street railway companies have been successful in convincing civic authorities and the powers that be, that pavement charges and other franchise taxes which were all right in the old horse car days are a rank imposition now, and have been relieved from them. They are a tax on street car riders, and judging by developments in many cities the sentiment now generally prevailing indicates that car riders are more interested in the railway furnishing service at the lowest possible fares than they are in having the company act as a tax gatherer for the municipality.—Winnipeg Electric Railway Service News.

B.C. Electric Railway Freight Rates. The Interstate Commerce Commission has decided that electric railways may increase their freight rates by the same percentages as have been approved for steam railway trunk lines in the same territory.

Winnipeg Electric Ry. Co.'s employes have, according to a press report, decided by a referendum to affiliate with the One Big Union. The employes union has been an independent organization since the general strike of 1919.

# Would Motor Busses Solve, or Help to Solve Toronto's Transportation Problems?

The Toronto Bureau of Municipal Research has prepared the following:—

The old stage coach which served our fathers and grandfathers is with us again, in the guise of the motor bus. The motor bus has all the advantages of its prototype and none of the disadvantages. It has the obvious advantage of mobility over the street car; but is it feasible in our climate? Can it supplant street cars or only supplement or feed them? Can it serve the suburbs only? Or, will street cars retain their hold on the suburbs, while the motor bus serves the down town districts, at least for local traffic? What have been the actual results of operation elsewhere? While much has been said about the theory of motor bus transportation, comparatively little has been said about its actual operation. To make a beginning in this direction, the bureau has made enquiries in various matters. While information was not available in many instances, the material received has been tabulated and is presented herewith.

Summary of Information Received Regarding Motor Bus Operation in American Cities.

| CITY | Character of district served | Length of journey | Class of pavements | Fares Charged | Capacity of buses—passengers seated | Type of bus | Number of operators per bus | Length of time in operation |
|---|---|---|---|---|---|---|---|---|
| AKRON | Business and residential | 1 to 3 miles | Brick—poor | 5c. cash | 30 | Single deck open | One | Several years (3 plus) |
| CHICAGO | Business and residential | ? ? ? | Asphalt | 10c. cash | —— | Double deck | Two | 2 years |
| DETROIT | Business and residential | 4¾ miles | Asphalt—poor | 10c. cash | 48 | Double deck open and closed | Two | 13 days |
| HUNTINGDON Indiana | Interurban | ? ? ? | Various and earth and gravel | 5c. cash and up | 20 to 30 | Single deck closed | One | 2 years |
| HOUSTON Texas | City and suburban | Up to 50 miles | Various and earth and gravel | 5c. cash and up | 5 to 7 | "Jitney" | One | ? ? ? |
| KANSAS CITY | Business and residential | 2 miles | Asphalt and gravel | 5c. and 10c. cash | 20 | Observation | One | 3 years |
| MILWAUKEE | Residential | 3 miles | Brick | Buses are Feeders to Street cars* | 20 | Single deck closed | One | Few months |
| MINNEAPOLIS | Business and interurban | 10-28 miles | Various and earth and gravel | Various | 14 to 26 | Single deck closed | One | 6 years |
| NEW YORK† | Business and residential | 6½ miles | Asphalt | 10c. cash | 40 | Double deck open and closed | Two | 13 years |
| LOS ANGELES | Residential sparsely settled | 3 to 7 miles | Asphalt and earth | 5c.-20c. | 15 | Converted trucks | One | —— |
| | Interurban sparsely settled | 30 to 130 miles | Asphalt and earth | 3c. per mile | 12 to 28 | Single deck | One | —— |
| PASADENA | Principally suburban and interurban | 25 to 35 miles | Asphalt and concrete | Various—less than electrics | 14 to 20 | Single deck open | One | 5 years |
| SAN FRANCISCO | Residential | ? ? ? | asphalt | 5c. fare* | 30 | Single deck closed | One | 4 years |
| TOLEDO | Business and residential, crosstown | 3 to 4 miles | Brick and wood | 5c.-6c. cash | 15 | Single deck closed | One | —— |

†The Privately-owned Fifth Avenue Line.
*Transfers issued to and from street cars.

### What the Correspondents Say About Service Given.

Akron, Ohio: "Our own experience here at Akron with the Goodyear Heights line is proving very successful from the standpoint of being able to move hhe residents, who are practically all Goodyear employes, to and from work."

Detroit, Mich.: "The buses run over a regular route and on schedule as regular as that of an electric railway."

Los Angeles, Cal.: "The interurban motor service has become an important element in transportation and is in competition with the interurban and steam railways throughout southern California. There are three classes of motor bus service, viz.: local service in competition with street cars; local service not competing with street cars; and interurban service competing with both steam and electric lines. The types of machines used are converted touring cars, or one-ton trucks with special 15 passenger bodies. Certain bus lines issue transfers to other bus lines, with no extra charge. There are approximately 300,000 passengers hauled out of the Union stage depot here each month."

Minneapolis, Minn.: "Each bus averages 100 miles a day, with an average of 100 minutes a round trip (of 20 miles). Each bus will average 150 passengers a day. The operators of the cars are paid a per diem rate, plus a commission. This provides an incentive for overloading the buses at times."

New York, N.Y. (municipally-owned line): "Certain trolley lines . . . ceased rendering to the public the service required by their franchise . . . The bus was introduced as a makeshift. However, on Sept. 21, 1919, the operation of motor buses was commenced under the supervision of the Plant and Structures Department . . . There are now operating on 25 routes, 400 buses, each carrying passengers at the same 5c. fare, but twice as quickly as the abandoned trolley lines. About 300,000 passengers are carried each day. I confidently estimate a net profit of $540,128 a year."

**Cost of Operation.**—The only systems with regard to which the bureau could obtain authoritative data on the cost of operation, were those of San Francisco, municipally owned, and Akron and New York, both privately owned. San Francisco, with 6 buses operating as feeders to the street railway system at a cost of 23.6c. a bus mile, reports a deficit of 11.6c. a bus mile, on a 5c. fare.

The Akron line, with 8 buses, reports a total cost of 36.78c. a bus mile, which includes overhead. Being operated by an industrial concern, principally for the benefit of its employes, the buses are managed so as to produce no profit and no loss. These buses charge a 5c. fare for a run of from one to three miles, the average journey per passenger being about 1¾ miles. The cost per passenger in 1919 was about 4 1/16c.

The cost of operation, per bus mile, on the privately-owned Fifth Avenue line, New York, with 300 buses, is given at 41.55c., not including certain unstated overhead charges. The fare is 10c., and the venture is said to be profitable, although no statement of profit and loss was obtained from the company.

From a study of the replies received it was obvious that these figures are not closely comparable, as the headings for the different items entering into the total costs were not uniform.

**Would an Experiment in Motor Buses for Toronto be Justifiable?**—The profitable operation of a motor bus line in any section of a city depends upon the relation of the number of passengers, and the fares charges, to the cost of operation.

It is impossible to estimate, without detailed study, how many people would patronize the motor bus, if installed as an auxiliary to the street railway in any particular section of Toronto, but the cost of operation can be estimated and the number of passengers required in order to meet expenses at a 5c. or 10c. fare can be determined. Taking the maximum unit costs reported as a basis for computation, the cost per mile per bus in Toronto would be 45.61c. This cost might prove to be even greater, due to

the higher cost of gasoline and also to climatic conditions. Assuming these costs to be approximately correct for Toronto, at a 5c. rate at least 10 fares a mile would be necessary in order to make the system profitable. At a 10c. rate, 5 fares a mile would be necessary.

North Toronto has, according to the assessment department figures, a population of about 12,110. This is an increase of 40% over 1914. The civic transportation committee reported, in 1914, that the passenger movement into North Toronto, from street cars and jitneys, was about 4,000 persons in one day. If this be increased by 40% (the rate of growth of population), there will be at least 5,600 people now requiring daily transportation to and from North Toronto.

Eight buses in Akron carried at the rate of about 5,600 persons a day for 312 days in 1919. These buses cost about $48,000, and are operated on a "no profit, no loss" policy at a 5c. fare. They travelled over brick paved streets which were in bad condition as a rule." North Yonge St. is macadam, in fair condition, and there are several cross streets paved with asphalt and concrete.

It must be noted that in every city in which buses are being operated, with any degree of success, they supplement rather than supplant street cars and rapid transit systems.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry.** and allied companies:—

| | June, 1920 | June, 1919 | 12 mos. to June 30, 1920 | 12 mos. to June 30, 1919 |
|---|---|---|---|---|
| Gross | $710,210 | $411,605 | $8,737,132 | $7,062,559 |
| Expenses | 565,796 | 362,027 | 6,259,721 | 5,284,938 |
| Net | 144,414 | 49,578 | 2,477,411 | 1,777,621 |

**Calgary Municipal Railway.—**

| | 1920. | 1919. |
|---|---|---|
| Car earnings for July | $77,087.02 | $71,751.04 |
| Total earnings for July | 71,441.11 | 83,571.99 |
| Total earnings for 7 months | 581,895.59 | 442,716.17 |
| Deficit for July | 10,603.89 | ..... |
| Deficit for 7 months | 25,788.72 | *1,919.18 |

*Surplus.

**Cape Breton Electric Co:—**

| | June, 1920 | June, 1919 | June 30, 6 mos. to 1920 | June 30, 6 mos. to 1919 |
|---|---|---|---|---|
| Gross | $49,174 | $46,529 | $285,839 | $277,434 |
| Expenses | 44,026 | 36,883 | 255,036 | 212,065 |
| Net | $5,148 | 9,646 | 30,803 | 65,369 |

**Cornwall Street Ry., Light & Power Co.**—A press report states that at a joint meeting of the Cornwall, Ont., Town Council and Board of Trade on Aug. 8, a proposition for acquiring the Cornwall St. Ry., Light & Power Co. and the Stormont Electric Light & Power Co., from the Sun Life Insurance Co., Montreal, and amalgamating them was approved. The project was submitted by Brigadier General C. L. Hervey, D.S.O., C.E., of Lancaster, Ont., and Montreal, who asked that the town of Cornwall guarantee $800,000 of 30-year 6% gold bonds of the undertaking, in return for which the town would be paid one-half of the net earnings of the combined companies, the other half going to the promoters of the new company. A committee was appointed to consider the matter and report to the town council, and at a subsequent meeting of the council the mayor was authorized to engage an expert to value the properties and to advise the committee. If the project is favorably reported upon, and is approved by the council, the necessary bylaws will be prepared for submission to the ratepayers.

**London St. Ry.**—A statement as to the company's operations for the two weeks ended June 30 is reported to have been laid before the London, Ont., City Council, July 28, as follows:—

| | | |
|---|---|---|
| Gross earnings | | $22,062.01 |
| Operating expenses | | 18,727.53 |
| Net earnings | | $3,334.48 |
| Bond interest | $1,091.05 | |
| Bond redemption | 1,509.00 | |
| Interest on loan | 62.47 | |
| Taxes | 375.00 | |
| | | 3,037.52 |
| Net income | | $296.96 |

**Montreal Tramways Co.**—A Montreal press dispatch says that the directors on Aug. 25 declared another dividend to shareholders on record Sept. 8, of 2½% on arrears to be paid on the capital stock of the company. This dividend is for the quarter ended March 31, 1919, and makes the fourth payment amounting to 10% on the total of 15% arrears originally accumulated, this leaves two more distributions or 5% on the total arrears, which, it is said, will be paid within the next few months. The first dividend on arrears was paid on Dec. 31, 1919, and practically a payment of 2½ has followed every two months or so. The company has also paid regular dividends on the capital stock at the rate of 10% a year since the beginning of the year, and up the present three distributions have been made during 1920. The common dividend was deferred in the spring of 1918, but was resumed at the close of 1919. By the regular distribution of dividends on the common stock, shareholders will have received by Sept. 15 next, 17½% since Jan. 1.

**Regina Municipal Railway.—**

| | 1920. | 1919. |
|---|---|---|
| Revenue for July | $26,749 | $28,189 |
| Passengers carried | 588,882 | 582,915 |

A press report states that the decrease is largely due to the small number of visitors in the city during exhibition week, the total number of passengers carried during the entire week of the exhibition being 182,982, against 188,765 during the four days of the exhibition week in July, 1919.

**St. Thomas Municipal Railway.—**

| | |
|---|---|
| Receipts for July | $1,987.75 |
| Expenditures | 3,671.11 |
| Deficit | $1,683.36 |

Passengers carried, 49,829, against 58,391 for July, 1919.

**Toronto Civic Railway.—**

| | Passengers. | Receipts. |
|---|---|---|
| Jan. | 2,493,296 | $41,989 |
| Feb. | 2,334,431 | 39,331 |
| Mar. | 2,700,264 | 45,434 |
| Apr. | 2,622,993 | 43,814 |
| May | 2,678,059 | 45,378 |
| June | 2,524,803 | 42,221 |
| July | 2,603,931 | 43,563 |
| | 17,957,777 | $301,730 |

During the same period in 1919 the number of passengers carried was 14,118,000 and the total receipts $237,870.

**Toronto Railway.—**

| | 1920 Receipts | 1920 City percentage | 1919 Receipts | 1919 City percentage |
|---|---|---|---|---|
| Jan. | $ 652,350 | $110,950 | $ 588,923 | $ 88,339 |
| Feb. | 595,861 | 119,172 | 545,771 | 96,563 |
| Mar. | 745,706 | 149,141 | 615,526 | 123,105 |
| Apr. | 653,340 | 130,668 | 600,231 | 120,046 |
| May | 644,458 | 132,892 | 620,068 | 124,014 |
| June | 544,833 | 108,966 | 431,082, | 86,217 |
| July | 641,793 | ..... | 534,412 | 128,359 |
| | $4,498,341 | ..... | $3,936,013 | $766,643 |

**Toronto Ry., Toronto & York Radial Ry.** and allied companies:—

| | June, 1920 | June, 1919 | 6 mos. to June 30, 1920 | 6 mos. to June 30, 1919 |
|---|---|---|---|---|
| Gross | $1,127,239 | $842,697 | $7,045,748 | $6,133,296 |
| Expenses | 757,436 | 543,040 | 4,650,618 | 3,643,296 |
| Net | 369,803 | 299,657 | 2,395,130 | 2,490,000 |

**Winnipeg Electric Ry.** and allied companies:—

| | June, 1920 | June, 1919 | June 30, 6 mos. to 1920 | June 30, 6 mos. to 1919 |
|---|---|---|---|---|
| Gross | $407,625 | $112,615 | $2,644,677 | $1,874,640 |
| Expense | 288,822 | 147,805 | 1,967,927 | 1,458,487 |
| Net | 118,803 | *35,190 | 676,750 | 416,153 |

*Deficit.

The surplus for May, after deducting fixed charges, was $48,649.25.

## The Toronto Railway and City Percentage Payments.

As mentioned in our last issue, the Toronto Ry. requested the city to allow it to postpone any further percentage payments to the city, until the city takes over the company's property on the expiration of the franchise in Sept., 1921. The matter was brought before the city Board of Control in July, and referred to the City Solicitor for advice. The question was again brought up at a meeting of the Board of Control early in August, when it was stated that the percentage payments for June and July, due respectively in July and August, were unpaid. The Mayor urged that legal steps be taken immediately for their recovery, and that the consideration of the company's proposal be refused. He was overruled, and the discussion adjourned, pending a conference with the company's General Manager.

The agreement between the company and the city provides for the payment of certain defined percentages, "monthly, and every month during the term covered by the agreement, on the first Monday of each month." No provision is made for any specific penalty in case of failure to pay the amounts on their due dates, but another clause in the agreement provides "that the payment of the said gross percentages monthly, and mileages quarterly, and the fulfilment of the obligations of the said conditions shall be a lien and charge on the said railways and the property used in the working thereof, both before and after the incorporation of the said company intended to be substituted as aforesaid in the place of the said purchasers."

At the time of going to press no decision had been reached by the City Council, but it was proposed that the city's legal department draw up an agreement with a view to deferring payment which, if approved, is to be confirmed by legislation.

**Toronto Transportation Commission.**—The Toronto City Council on Aug. 5 appointed P. W. Ellis, wholesale jeweller, President Toronto Hydro Electric Commission and Chairman Queen Victoria, Niagara Falls Park Commission; Fred. Miller, of Roger Miller & Sons, harbor contractors, Toronto; and Geo. Wright, hotel proprietor, who is a member of the Toronto Hydro Electric Commission, as a commission to manage and operate the Toronto Ry. after it is taken over by the city on the expiration of the company's franchise in Sept., 1921. In the meantime the commission's duties are to consist of preparation for taking over the property, re-arranging routes, ordering additional cars, etc.

**Three Rivers Traction Co.'s One-Man Cars.**—In the description of these cars, published in Canadian Railway and Marine World for August, on pg. 448, it was omitted to be mentioned that they were built by the Ottawa Car Manufacturing Co.

The Toronto City Council made a trip over the London & Port Stanley Ry. Aug. 14 on the invitation of Sir Adam Beck.

# Ottawa Electric Railway's Insurance and Benefit Plan.

Canadian Railway and Marine World has given in previous issues considerable information about the O.E.R.'s insurance and benefit plan, and was advised recently that a considerable majority of the company's employes are insured under the plan. As it is a new one and likely to be of interest to other electric railway companies, the certificate issued to employes insuring, is given in full as follows:

The O.E.R. Insurance and Benefit Plan.

Agreement made this day of 19 , between the Ottawa Electric Railway Co. (hereinafter called the "company"), and (hereinafter called the "employe").

1. The company desires to provide a continuing scheme of insurance for the benefit of its employes, to assist them to make provision for themselves and their families in case of death, illness, or accident not provided for by the Workmen's Compensation Act (Ontario).

2. To attain this object, the company agrees to pay, for each employe, a portion of the premiums for the policies referred to in clause 8 of this agreement and to guarantee that while the employe remains in its employ he will be entitled to benefits nos. , subject to the conditions of this agreement, and the employe agrees to pay to the company the sum of $ per month.

3. Benefit 1. In case of death from any cause (except suicide within the first year), $1,000 will be paid to

Benefit 2. Upon retirement from the service, at the age of 65, the employe will have his choice of the following benefits:—

(a) A cash payment of $1,083.12.

(b) A paid-up insurance policy of $1,625.00 (subject to further medical examination).

(c) A cash payment of $416.22, with a paid-up insurance policy of $1,000.00 (subject to further medical examination).

(d) An annuity of $100 for the balance of his life, with a guarantee of $1,000 if he dies before the tenth annuity is paid, the balance will be paid to the beneficiary named above.

If the employe by arrangement with the company remains in the service after reaching the age of 65, any cash payments due him under this agreement will be held in trust by the company, drawing interest at 3% per annum until such time as the employe, retires from the service.

Benefit 3. If the employe is prevented from working, by reason of sickness, or accident occurring while he is off duty, he will receive $10 a week, but no payments shall be made for disability resulting from venereal disease, nor from any disease for which he is not treated by a physician, nor for the first seven pdays of disability, nor for disability in excess of 26 weeks duration, nor for any bodily injuries received while doing any act or thing pertaining to any trade, business, employment, or occupation for pecuniary gain. The employe agrees that the physician appointed under this plan will be the sole judge as to whether he is not capable of performing his duties, and if he fails to return to work at the time that the said physician declares that he is capable of doing so, he will not receive any further weekly payments on account of that illness or accident.

Benefit 4. When the employe is absent from duty on account of illness, or accident occurring while he is off duty as referred to under benefit 3, paragraph next above, he will be provided with free medical attendance, but this will not include the cost of surgical operations. He will also have the right to consult one of the company's physicians, at the physician's office, whenever he feels that medical advice is necessary for the benefit of his health.

Benefit 5. In consideration of the employe, continuing while in the employ of the company to pay to the company the sum of $ mentioned in clause 2, the company undertakes to pay whatever sum is necessary to keep the employe insured under the policies mentioned in clause 8, subject to the following conditions:

(a) If the employe, before reaching the age of 65 ceases from any cause to be an employe of the company the total of the monthly sums paid in to the company by him will be returned to him with interest thereon at the rate of 3% per annum; or instead of accepting such refund the employe may continue the policy in force with the insurance company mentioned in clause 8, according to the conditions prescribed by the insurance company in that event. Provided, however, that in case the employe continues the policy in force, it is agreed that if the cash surrender value of the policy at the time the employe leaves the service of the company is greater than the total of the monthly sums paid by the employe with interest at 3% per annum, such excess belongs to the company, and must be paid to the company by the employe before the company transfers its right in the policy to the employe.

(b) Inasmuch as the withdrawal of any employe from the plan, while remaining in the employ of the company, would tend to do away with the consideration for which the company agrees to make the payments mentioned above, and would tend to prevent the plan achieving the results which it may reasonably be expected to achieve if the employe signing this contract continues to make his payments; it is agreed that if any employe while continuing in the employ of the company, gives to the company, through its Superintendent or other official, written notice that he wishes to withdraw from the plan, or who does not make any payment within 30 days after the day on which such payment became due, such employe shall thereby immediately forfeit all right, claim and interest, if any, that he or his beneficiaries may have had at the time of such notice or failure to pay, and shall not receive any benefits under this plan. And in particular it is agreed that such notice or failure to pay shall operate as a renunciation by the employe of his interest, if any, in all payments previously made by him under this plan, and that such payments shall be forfeited to the company. Provided, that where the employe has no wages due and is in the opinion of the company, temporarily unable to pay premiums on account of illness or other similar cause, the company may relieve the employe from such forfeiture.

4. All the benefits are open to all employes who are paid by the hour or day, the monthly assessment being $1.50.

5. Benefits 1, 2 and 5 only are open to employes who are paid by the month, the monthly assessment being $1.25.

6. No entrance fee or money charge of any kind will be made except the above monthly assessment.

7. The employe agrees that the assessment mentioned in clause 2 may be deducted from the wages due him, if there are any due, as each monthly assessment becomes payable, and that the monthly assessment will be considered as due on the 20th day of each calendar month.

8. Benefits 1 and 2 are covered by policy no. , issued by The Travelers Insurance Co., Hartford, Connecticut, U.S.A., and are subject to the terms thereof. Benefit 3 is covered by blanket policy no. G.A. 66, issued by The Travelers Indemnity Co. In consideration of the company making the payments necessary to keep these policies in force, the employe assigns policy no. to the company by assignment dated . These policies are open to inspection at the office of the company at all times.

9. It is agreed that neither this contract nor the policies referred to herein shall be hypothecated as security for a loan, or otherwise used to transfer, right, title or interest to a third party.

The Ottawa Electric Railway Co.
Witness: .....Sec'y. Treasurer.
.....Employe.

## Electric Railway Notes.

Regina, Sask., ratepayers have defeated a bylaw to provide for the operation of one-man cars on the Regina Municipal Ry. The vote was 428 against and 321 for.

The Toronto Civic Ry., to Aug. 20, had received 14 of the 25 one-man safety cars ordered from Philadelphia, Pa., and it was expected that the balance would be received by the end of August.

The London St. Ry. Co. is reported to have entered an action against the London, Ont., Free Press for allaged libel published during the recent fare agitation in the city.

St. Thomas, Ont., Municipal Ry. began the operation of one-man cars Aug. 2.

The Dominion Power & Transmission Co., Hamilton, Ont., advised us recently that it had bought 80 tons of 70 lb. steel rails.

British Columbia Electric Ry.'s head office employes held their fifth annual picnic on Aug. 5, when over 400 left Vancouver in the steamship Rowena for Bowen Island early in the morning, returning in the evening.

The Montreal Tramways Co. put into effect on Aug. 1, on all it slines, a new transfer form which had been in use for about six weeks previously on the St. Catherine St. line. The new form is punched by the conductor to indicate the proper transfer point.

Nova Scotia Tramways & Power Co.'s employes in a recent petition to the Halifax, N.S., City Council claimed that the operation of the daylight saving bylaw was a hardship in regard to the operation of the street cars and asked that the new time be abandoned. The council on Aug. 13 decided to revert to standard time on Aug. 29, two weeks later than the petition asked for, but two weeks earlier than the date named in the bylaw.

# Marine Department

## General Shipbuilding Matters Throughout Canada.

B.C. Yacht & Boat Builders Co., Victoria, B.C., which has a contract from the Marine Department for building two motor boats for the British Columbia coast patrol service at $62,750 each, has commenced work on them, the keels having been laid early in August. The boats will be 75 ft. long overall, with 17 ft. 8 in. beam, and will be equipped with heavy oil engines of the semi-Diesel type of 100 h.p. by Canadian Fairbanks-Morse Co. The company's plant is at Point Hope on the old Songhees Indian Reserve. The members of the company are returned soldiers and have qualified in boat construction in the vocational training branch of the Department of Soldiers Civil Re-establishment.

Bridgewater Shipping Co., Bridgewater, N.S., launched the tern schooner Hazel L. Myra, Aug. 4. Her dimensions are,—length of keel 90 ft., beam 27 ft., depth of hold 11 ft. She is equipped with auxiliary power, was built for W. Duff, M.P., Lunenburg, N.S., who will be managing owner, and will engage in trade with the West Indies, Brazil and Europe.

Steel Cargo Steamship Indus, approximately 8,800 d.w. tons, built for Swedish East Asiatic Co., Gotenburg Sweden, by J. Coughlan & Sons, Vancouver, B.C., for operation in Indian Ocean.

Canadian Vickers Ltd., Montreal.—The contract for repairs to the C.G.S. Montcalm is reported to have been awarded to this company at approximately $100,000. We have been unable to obtain confirmation of this.

Chester Basin Shipbuilders Ltd., Lunenburg, N.S., launched the tern schooner D. D. McKenzie Aug. 12. She is fitted with the latest coasting equipment, and has the following dimensions,—length overall 130 ft., beam 27 ft., depth of hold 11 ft., tonnage 140 net. She is owned by W. Duff, M.P., and E. C. Adams, Lunenburg, N.S.

Collingwood Shipbuilding Co., Collingwood, Ont., launched the bulk oil steamship Transpet July 27, for the Compania Transportadora de Petreles, Buenos Aires, a subsidiary of the Standard Oil Co. of New Jersey. The christening was performed by Miss Susan Smith, daughter of the President of the International Petroleum Co., Toronto. This is the sixth oil tank steamship built at this yard for the Standard Oil Co. and its subsidiaries, the previous five being larger than the present one. The s.s. Transpet is being built under Lloyd's special survey for the highest class, for river service at Buenos Aires, and has been designed to meet the requirements of the Argentine port authorities. The cargo will be carried in 12 tanks, 6 on each side, and at the forward end there will be a small hold for general cargo. This hold will be separated from the oil tanks by a cofferdam, and will be served by a small derrick on each side of the ship. The machinery will be located aft, with a cofferdam, and oil fuel tank and pump room between machinery space and aftermost cargo oil tank. An expansion trunk will run continuously from boiler casing front to forecastle. Steam heating coils will be fitted in the tanks to facilitate pumping of the heavy crude oil cargo. The crew will be housed in the forecastle, and officers and engineers in deckhouses aft, at each side of the machinery casings. Peak tanks will be arranged to carry fresh water, and feed water will be carried in a double bottom tank under the engines. The ship will be fully equipped with steam windlass, steam steering gear, electric lighting, refrigerating machinery and cold chamber. The propelling machinery will consist of a set of triple expansion, surface condensing engines, with cylinders 12¾, 21½ and 35 in. diar. by 24 in. stroke, supplied with steam by a single ended Scotch marine boiler, 11 ft. 8 in. diar. by 10½ ft. long, designed for a working pressure of 190 lbs., equipped for oil burning, and all designed for a speed of 8 knots an hour when loaded. The arrangements for handling the oil cargo will be very complete. Two duplex pumps 12 x 9 x 18 in. will be provided, with piping so arranged that the cargo tanks can either be pumped up or out. The main suction lines will be 6 in. with 4 in. branches to each tank. The general dimensions are,—length over all 175 ft. 8 in.; length b.p. 170 ft., breadth moulded 35 ft., depth moulded 10½ ft., load draft 8 ft., load, d.w., 625 tons.

At a general meeting of shareholders at Collingwood, at which 95% of the stock was represented, it was unanimously resolved to sell all the Collingwood Shipbuilding Co.'s assets to the Collingwood Shipbuilding Corporation Ltd., which H. B. Smith, President, Collingwood Shipbuilding Co., stated is a subsidiary of the British Empire Steel Corporation. The corporation undertakes to pay all accounts and assume all contracts and agreements of the Collingwood Shipbuilding Co. The consideration for the purchase is as follows:—First mortgage 10-year 5% serial bonds upon the corporation's property of the par value of $1,950,000, unconditionally guaranteed as to principal and interest by the British Empire Steel Corporation. Seven per cent cumulative preference stock of British Empire Steel Corporation, of the par value of $1,040,000. Seven per cent cumulative second preference stock of British Empire Steel Corporation, of the par value of $1,040,000. Common stock of British Empire Steel Corporation, of the par value of $1,040,000. The Collingwood Shipbuilding Co.'s assets are stated as $6,500.000. The capital stock is $2,600,000 and funded debt $1,950,000. Two plants are operated, one at Collingwood, the other at Kingston. About 1,500 men are employed. The stock has sold recently at about 90.

J. Coughlan & Sons, Vancouver, B.C.

The s.s. Indus, builder's yard no. 16, the launching of which was announced in our last issue, and an illustration of which appears in this issue, was laid down originally for Western Canada Steamships Ltd., a subsidiary of the building company, but was sold later to the Swedish East Asiatic Co., Gotenburg, Sweden, for operation in Indian Ocean service. She was built in 66½ days and launched 89 days after the laying of the keel. She underwent her trials in English Bay July 20, averaging 13.56 knots an hour, and as upon her return it was found impossible to obtain fuel oil, it was decided to alter her to burn coal. She has been accepted by J. A. Sturrock on behalf of the owners, and has loaded flour at Puget Sound ports for Alexandria, Egypt. She is of the builder's standard 8,800 d.w. ton type, of steel, with the following dimensions,—length overall 427 ft., breadth moulded 54 ft., depth moulded 29¾ ft., and is equipped with triple expansion engines, with cylinders 27, 44 and 73 in. diar. by 48 in. stroke.

The keel of a steel cargo steamship of 8,800 d.w. tons, yard no. 19, intended for one of the builder's subsidiary companies, was laid Aug. 2. She will be similar to the s.s. Indus, and will be equipped with triple expansion engines, with boilers fitted for either coal or oil fuel.

Fields, Kirkpatrick & Seaman, Spen-

cers Island, N.S., launched the tern schooner Rupert K, 400 tons register, Aug. 5. She is classed in Bureau Veritas, and fitted with all the latest improvements for ships of this class. She loaded deals at Parrsboro for Europe.

Fraser Brace Shipyards Ltd., Montreal, we are advised, has been awarded the contract for repairs to Canadian Government Merchant Marine's s.s. Canadian Recruit, which stranded on Vache Reef near the mouth of the Saguenay River, Dec. 20, 1919, and which was refloated July 17.

Halifax Shipbuilding Corporation Ltd. has been incorporated under the Dominion Companies Act, with $100,000 authorized capital and office at Montreal, to build, own and navigate ships operated by steam and other motive power, warehouses, elevators, and other transportation and terminal facilities.

W. R. Huntley & Son, Parrsboro, N.S., launched a four masted schooner, White Belle, towards the end of July. She is 573 tons net and is equipped with gasoline power for hoisting, with two winches for handling cargo. She is classed with Bureau Veritas, and is owned by C. T. White & Son, Sussex, N.B.

Nova Scotia Shipbuilding & Transportation Co., Liverpool, N.S., launched the tern schooner Isobel Moore, Aug. 10, for J. and F. Moore, St. John's, Nfld. She is a sister ship of the Olive Moore, launched in June for the same owners. Her dimensions are,—length 136 ft., breadth 25 ft., depth of hold 11 ft.

Nova Scotia Steel & Coal Co., New Glasgow, N.S., launched its seventh steel cargo steamship Volunda, July 31. This ship has been built on the company's account, and is of the same type as the steamships Canadian Sealer and Canadian Miner, built by the company for Canadian Government Merchant Marine Ltd. She is approximately 2,800 d.w. tons capacity, and is of the single deck, poop, bridge and forecastle type, with the following general dimensions,—length overall 280 ft., length b.p. 270 ft., breadth moulded 38 ft., depth moulded 20½ ft., draft loaded 17¼ ft. She will be equipped with tri-compound engines, with cylinders 17½, 28¾ and 47 in. diar., 33 in. stroke, 875 i.h.p., supplied with steam by 2 single ended boilers, each 12¾ ft. diar. by 10¾ ft. long, at 185 lb. working pressure, and fitted with 2 furnaces, having a grate surface of 80 sq. ft., and a heating surface of 3,000 sq. ft. She will have a sea going speed under full load of about 8½ knots an hour. The company is laying the keel for a similar ship, on its own account, and has also one of the same type under construction, which is understood to be for Canadian Government Merchant Marine, but the contract for which had not been signed up to Aug. 18.

Prince Rupert Drydock & Engineering Co., Prince Rupert, B.C.—W. T. Donnelly, New York, the engineer who designed and built this drydock and plant at Prince Rupert for the Grand Trunk Pacific Ry., visited the yards recently, on behalf of Newman Erb, of New York, and associates, who have a lease of the plant, and it is reported that he has recommended a general development of the yards and the construction of large oil tanks, as the present facilities there are not sufficient to enable the company to extend its business to handle some prospective contracts.

A Winnipeg press dispatch of Aug. 24 credited W. P. Hinton, Vice President and General Manager, Grand Trunk Pacific Ry., with stating that the Prince Rupert Drydock & Engineering Co. had received a contract for building five steel tank steamships and had offers pending for sufficient miscellaneous tonnage to keep the plant running for two or three years, also that arrangements would be made to accommodate from 2,500 to 3,000 men.

Three Rivers Shipyards Ltd., Three Rivers, Que., which is a subsidiary of the National Shipbuilding Corporation of Wilmington, Del., and which has been operated as its Three Rivers Shipyards division, is to be wound up, on the application of a creditor, G. W. Scott, of P. S. Ross & Son, Montreal, having been appointed Provisional Liquidator. The company was formed originally to take over a contract given by the Imperial Munitions Board to T. M. Kirkwood, Toronto, for building 2 wooden steamships of 3,080 d.w. tons each. Before the completion of these contracts, the plant was sold to the National Shipbuilding Corporation and contracts for wooden steamships were carried out for the French Government and the yard was remodelled to build steel steamships.

**Dominion Marine Association.**

President, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

Second Vice President, A. A. Larocque, President, Sincennes - McNaughton Line, Montreal.

Executive Committee, W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

General Counsel, Francis King, M.A., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

Wallace Shipyards Ltd., North Vancouver, B.C.—It is reported that the C. P.R. has ordered a steamship from this company for its B.C. Coast Service, to replace the s.s. Princess Sophia, which was lost with her passengers and crew on the Vanderbilt Reef in the Portland Canal Oct. 24, 1918. The new ship has, it is said, been specially designed for the Alaska service, and will be 325 ft. long, with a speed of 17 knots. The contract price is stated to be about $1,500,000.

Victoria, B.C.—Capt. A. Berquist, a local owner and builder of steam tugs, is reported to have bought the Point Ellice yard, operated formerly by the Foundation Co. of British Columbia, Ltd. The plant as it stands is valued at $25,000, and consists of 4 building ways, 2 overhead gantrys, some electrically driven machinery and general shipbuilding plant and buildings. It is said that the new owner contemplates building tugs and barges as soon as his plans are completed, and he has arranged a lease of the land from the B.C. government.

Victoria (B.C.) Shipowners Ltd., Victoria, B.C.—J. W. Spencer, President, and F. B. Pemberton, have resigned from the board of directors, due, it is stated, to differences of opinion on general policy. C. Hoard, Vice President, has been elected President, and H. Shepherd has been appointed Secretary. This company is building four wooden barkentines at Cholberg shipyard, under Dominion Government aid, through loans of $175,000 for each ship. Three of the keels have been laid, one of them being fully framed. Good progress is reported in connection with the building of these ships, a second payment of $100,000 having been received from the Dominion Government at the end of July. The square framing on the first ship was completed at the end of July, and the framing on the second ship was reported well advanced.

Yarrows Ltd., Victoria, B.C.—N. A. Yarrow, Manager, who is at present in Great Britain, is reported to be discussing with the management of the parent company, Yarrow & Co. Ltd., Glasgow, the possibility of transferring the Clyde plant to British Columbia. Sir Alfred Yarrow stated some time ago that if labor troubles continued to occur on the Clyde, his company would have to consider seriously the question of transferring its works to British Columbia.

## Icebreaking Steamship for St. Lawrence River.

The Marine Department called for tenders to Aug. 13, for the construction of an icebreaking steamship for service in the St. Lawrence River and Gulf, the plans and specifications having been prepared largely on the lines of those of the icebreaking steamship J. D. Hazen, which was built by Canadian Vickers Ltd., for the Department, but transferred to the Russian Government, early in the war, at the request of the British Government. We have been advised that the tenders received were considered excessive by the Department, and that they were all rejected. The question of calling for new tenders, or postponing further action until Parliament meets, is under consideration.

The general dimensions of the proposed ship are,—length between perpendiculars 275 ft., breadth moulded 57½ ft., depth moulded 32 ft., tonnage, 3,520 gross, indicated horsepower 8,000, speed 16 knots. The estimates for 1920-21 contain an appropriation of $2,000,000 for building this ship.

A Vancouver press dispatch of Aug. 13, states that Wallace Shipyards Ltd., North Vancouver, B.C., has been advised that its tender for the construction of this steamship was the lowest of those submitted by any firm on the American continent, but that it exceeded the amount of the appropriation. It is stated that the Wallace Shipyards tenders was about $3,000,000.

The Magog & Newport Steam Navigation Co. Ltd. has been incorporated under the Dominion Companies Act, with $200,000 authorized capital and office at Montreal, to build, own and operate steam and other ships of every description, and general navigation and transportation facilities, for handling passenger and freight traffic. The incorporators are: J. DeWitt, O. S. Pyndale, H. C. McNeil, O. F. Edwards, Montreal, and H. Pond, Outremont, Que.

# Canadian Pacific Ocean Services' s.s. Empress of Canada Launched.

The s.s. Empress of Canada, which is being built at Glasgow, Scotland, for Canadian Pacific Ocean Services' Pacific service, was launched Aug. 17, the ceremony being performed by Mrs. G. M. Bosworth, of Montreal, wife of the Chairman of the managing company. On completion of the ship in March, 1921, she will sail from Liverpool, Eng., for Vancouver, B.C., via the Suez Canal, on a round-the-world trip, details of which, together with some particulars of the ship, were given in our last issue.

Sir Thomas Fisher, K.B.E., General Manager, Atlantic Lines, C.P.O.S., London, Eng., is reported to have stated in a speech following the launching regarding prospects of steamship service on the Atlantic, that unless there is some cessation in the continually rising costs, British shipyards may find themselves without orders, and that under present conditions it would be absolutely unthinkable to lay down another ship today like the Empress of Canada. Before the war, Atlantic steamships cost £550,000, whereas the Empress of Canada cost £1,700,000. Increased maintenance is still more serious, and the difference in the cost of running a ship of the type of the company's s.s. Calgarian, could be estimated as follows,—coal per voyage before the war £4,500, now £24,000; repairs per round trip, before the war £7,700, now £17,000; provisions, before the war £3,000, now £8,000; wages before the war £2,500, now £9,000. Apart from the cost of the improved accommodation, etc., the total increases for the round trip approximate £60,000, and the increase in passenger rates is only 185%, against the cost increase of 850%. This, he claimed, could not continue very long, a number of first class ships would necessarily be laid up and he could not conceive of anything worse for the Empire than charging such immense sums. The rising of Atlantic rates would seriously impede communication between different parts of the empire, which, he claimed, if not stopped, would mean empire disintegration. He urged economy in shipbuilding, by better organization, and suggested that standardization might possibly give some reduction in costs. One principal economy in operation, he stated, would be to reduce speed by four knots an hour, and he believed that oil burners as at present utilized on some steamships, would be followed in about five years by internal combustion engines, which, he claimed, would about halve the cost of fuel and bring matters nearer to the pre-war position.

The ship has an overall length of 653 ft., is 77¾ ft. wide and 53½ ft. deep to the bridge deck. She has a straight stem and cruiser stern, and will have 3 funnels and 2 pole masts and will be rigged as a fore and aft schooner. There will be a continuous shelter deck with bridge, promenade and boat decks over, the former extending for the full length of the ship; two complete 'tween decks and lower Orlop 'tween decks at fore and aft ends. She will have a gross tonnage of about 20,000 tons and will be arranged to carry about 490 first class, 106 second class, 238 third class and 932 Asiatic steerage passengers and 547 of a crew. Of the cargo spaces a large portion will be fitted for the carriage of silk and refrigerated cargo. The deadweight will be 9,500 tons and the ocean speed not less than 18 knots. The ship is built to the highest class of Lloyd's register, to full Board of Trade requirements, and will be subdivided in full accordance with the requirements of the Bulkhead Convention.

The first class accommodation will be arranged on the shelter deck, in 2, 3 and 4 berth rooms, and on the bridge deck in 1, 2 and 3 berth rooms, also in a number of special rooms and private suites, comprising sitting rooms, bedrooms and bathrooms. The staterooms will be fitted up with the latest type of open wash basin, having a supply of hot and cold fresh water. The public lavatories and bathrooms will be fitted up with the most modern improvements in sanitary fittings. The dining saloon will be on the upper deck and will accommodate 307 persons; there will be a large reception room forward of the dining saloon, with a passenger elevator at its fore end; and on this deck there will also be a large swimming bath and gymnasium with dressing rooms and other auxiliaries. The remaining public rooms will be on the promenade deck and will include a large lounge, with cinema operating room, long gallery, card room, children's room, drawing room, writing room, smoking room and venandah cafe. They will be treated in a most elaborate and luxurious style in the matter of design and comfort. Long promenades and recreation spaces for games, dancing, etc., will be reserved for the passengers.

The approach to the dining saloon on D deck will be through the first class reception room, which is designed as a large open space suitable for dancing, with a floor space of over 300 superficial feet, and with arched recesses at the sides fitted with fixed seatings and a space for the orchestra. It will be panelled throughout in large painted panels, of a light grey tone with mouldings picked out in white. In the central portion there will be large arch-headed mirrors at the aft end, with jardinieres for flowers at their feet, and on the for'ard end a handsome wrought iron lift enclosure.

The first class dining saloon will be approached from the reception room through two auxiliary dining rooms, which will also serve as supper rooms on the occasion of dances in the reception rooms. It will be capable of seating 325 people. The seating will be arranged to provide separate tables for parties of 6, in recesses at the ship's sides, and 24 other tables seating 4 each, adjoining the main gangways, reserving the long tables for the central portion of the room. The central portion will be carried up to the height of two decks, the upper portion being arcaded in treatment, open at one side to a gallery, and on the other side glazed with semi-circular mirrors. At the forward end will be the musicians' gallery, with a handsome wrought iron balustrade, and at the after end will be a fine carved mahogany sideboard. The whole motive of the central portion is designed to give a great appearance of height. The general scheme of this room will be Georgian in character, with large painted panels of a similar color scheme to the reception room, and with mirrors between these panels, which will add to the light of the room.

The general design of the main stairway follows closely that of the reception room. It will be fitted with fine wrought iron lift enclosures and balustrades at each deck level. On the promenade deck it will open into the long gallery, which will be made a feature of the ship, as it will give access to all the principal first class rooms. It will be 13 ft. wide and 110 ft. long. It will be panelled in polished Honduras mahogany, and the sides will be hung with choice prints and will be amply lighted from the ship's side.

At the forward end of the lounge gallery will be the first class lounge gallery. This room has been planned with a view to providing a large open central space, raised about 4½ ft. in height above the rest of the room and it will be lighted by clerestory windows, by a handsome wrought iron lay light. It will be utilized as a music room, and also for cinema exhibitions. The central portion will be divided from the outer portions by arches supported by columns. The remainder of the room, which will be at the lower level, will be arranged with a view to providing for card parties. The keynote of this design is the wall decoration, which will consist of large brocade panels of a rich design in walnut framing. The utmost use will be made of the facilities for lighting this room, by introducing large teak windows, with transom lights, at frequent intervals along the side, and by large teak bays at the forward end. The floor of this room will be in oak parquet.

The smoking room has been planned on somewhat similar lines. The central portion in itself will constitute a large and well lit room, while the portions towards the sides of the ship will be adapted with a view to the accommodation of card parties. The room will be panelled in large oak panels, sub-divided with carved Ionic columns. At the sides of the ship there will be 3-light mullioned and transomed windows. The features of this room will be the fireplace at the after end with its large canopied pediment, under which will be a carved Canadian coat of arms, and at the forward end will be the handsome central doorway surmounted by a carved and quilt Sunray clock.

The first class card room's walls will be panelled throughout in grey sycamore panels, with large fielded and belection moulded panels, and with a fine carved cornice and bold dado skirting mouldings.

The first class drawing room main feature will be the decoration of the panels above the dado, which will be in specially selected printed linen, with curtains and upholstery to match. The framing of these panels at intervals will be carved and gilt mirrors, and over the fireplace a painted flower picture. All the panelling and dado panelling will be painted in mahogany in soft tints.

The second class accommodation will be arranged on the shelter deck aft, in 2 and 4 berth rooms. The state rooms will be fitted up similar to the first class. The dining saloon will be on the upper deck, and will accommodate 100 persons and there will be a lounge on the bridge deck aft.

The third class (permanent and portable) will be arranged on the upper and main decks in large 2, 4 and 6 berth rooms. The dining saloon will be on the upper deck and will accommodate 100 persons. The Asiatic steerage will be arranged in compartments, on the main, upper and shelter decks, in open berths. Large and airy rooms will be arranged for officers and crew.

Miscellaneous.—The ship will be fully equipped with a large laundry, dispensary, hospitals, dark rooms, etc., also store rooms and insulated chambers for cold storage of provisions, and the kitchen and pantry arrangements will be such as will ensure efficient and rapid service.

Throughout the ship special attention will be given to the fact that she is to serve in a semi-tropical climate; the public rooms will therefore be large and airy and the ventilation amply and sufficiently arranged. A feature of the ship will be the elaborate system of mechanical ventilation fitted throughout. All the first and second class accommodation and public rooms, except dining saloons, will be heated by steam radiators, and ventilated by electric exhausting fans. All dining saloons and third class accommodation will be heated and ventilated on the thermo tank hot air system. All supply and exhaust fans will be capable of changing the air, in the compartments to which they are connected, a sufficient number of times per hour to guarantee a continuous supply of pure air. All thermo tanks and supply fans will have a disinfecting apparatus, fitted to ensure purity of air. Electric radiators will be fitted in first and second class state rooms.

The ship will be equipped with three sets of main electric generators, turbine driven, for lighting and for operating the various fans and auxiliary appliances, and in addition an emergency electric plant, driven by an oil engine, will be installed on the boat deck, for service if the main plant is not available. Wireless telegraphy plant, submarine signalling apparatus and a Sperry gyro compass will be part of the equipment.

Refrigerating plant will be installed for cargo and provision chambers.

The 'tween decks will be sub-divided by special bulkheads, to prevent the spread of fire. There will also be a considerable number of chemical fire extinguishers fitted throughout the passenger accommodations. A complete system of automatic fire alarms will be fitted throughout, also a system of telephones, with a central exchange to the special and suite rooms and various offices, etc. For fire extinguishing in the cargo holds, etc., steam and water will be carried through various compartments.

Machinery, Etc.—The ship will be propelled by 2 sets of Brown-Curtiss turbines, driving twin screws through double reduction gearing. Each set of turbines will be divided into units, working in series. The high pressure and low pressure turbines will be coupled together in tandem, and will drive the outboard first reduction pinions of gearing, and the first intermediate and second intermediate pressure turbines will be similarly coupled, and drive the inboard first reduction pinions. For astern working, a high pressure turbine will be incorporated in the same casing as the second intermediate pressure ahead turbine, and a low pressure astern turbine will be incorporated in the same casing with the low pressure ahead turbine. The propelling machinery will be the largest installation of double reduction gearing which has, so far, been constructed.

The boiler installation will comprise 8 double ended, and 4 single ended cylindrical return-tube boilers, arranged in 2 separate boiler compartments, and designed to burn oil fuel in combination with the Howden system of forced draft. There will be a complete duplicate system, in each boiler room, of oil fuel pumps, heaters and fittings for supplying oil to the furnaces, and provision will be made for readily converting the boilers, so that they may burn coal at a later date if required.

The installation of auxiliary machinery will be of the most modern type, designed specially to economize consumption of steam for propelling purposes, and also to suit the requirements of the high class passenger service in which the ship will be engaged. The steam steering gear, manoeuvring and warping machinery will be of the latest types.

The cargo equipment will be of the most recent type, the cargo derricks on the masts and derrick posts being operated by 12 powerful electrical winches.

The lifeboats will have capacity for all on board and will be operated by Babcock & Wilcox patent Wylie davits, Welins quadrant davits, and electric boat winches. The doors on the watertight bulkheads will be operated by Brunton Bros. hydraulic system and will be controlled from the navigating bridge.

The oil fuel bunkers will have a normal capacity for 4,500 tons of oil; in emergencies many of the double bottom rooms may also be utilized for the carriage of oil, so that the fuel supply can be increased to about 6,400 tons, sufficient to carry the ship over 14,000 miles.

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**The Bear River Steamship Co. Ltd.** has been incorporated under the Dominion Companies Act, with $150,000 authorized capital and office at Bear River, N. S., to own and operate steam and other ships, and to carry on a general shipowning and transportation business. The incorporators are,—R. S. Robertson, J. W. Pickup, Jas. Aitchison, L. Kert, and D. A. McCrimmon, all of Toronto.

## Ships Registered in Canada During May, 1920.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons register.

### STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|
| 141592 | Canadian Beaver* | Montreal | Kingston, Ont. 1920 | 251.0 | 43.6 | 23.6 | 2410 | 1451 | 124 Sc. | Minister of Marine and Fisheries, Ottawa. |
| 141705 | Canadian Inventor* | Vancouver, B.C. | Vancouver, B.C. 1920 | 400.1 | 52.4 | 28.8 | 5497 | 3384 | 266½ Sc. | Minister of Marine and Fisheries, Ottawa. |
| 141710 | Chilkoot | Vancouver, B.C. | North Vancouver, B.C. 1919 | 172.6 | 30.2 | 12.9 | 756 | 411 | 95 2/3 Sc. | Union Steamship Co. of British Columbia, Vancouver, B.C. |
| 133799 | Dimmie John | Port Stanley, Ont. | Port Stanley, Ont. 1920 | 69.0 | 16.6 | 6.0 | 50 | 34 | 10½ Sc. | H. F. Woolatt, M.O., Port Stanley, Ont. |
| 141599 | Jeannette R.(1) | Montreal | Buffalo, N.Y. 1888 | 113.1 | 20.9 | 5.7 | 144 | 56 | 33 Sc. | Sincennes McNaughton Line, Ltd., Montreal. |
| 141752 | Maplegulf(2) | Montreal | Marine City, Mich. 1889 | 175.1 | 32.4 | 13.0 | 821 | 493 | 80½ Sc. | T. R. Enderby, Montreal. |
| 141259 | Majorie V. | Yarmouth, N.S. | Wedgeport, N.S. 1920 | 68.6 | 18.0 | 6.7 | 61 | 38 | 13 Sc. | D. D. LeBlanc, Wedgeport, N.S. |
| 115953 | Princess Victoria* | Victoria, B.C. | Wallsend-on-Tyne, Eng. 1903 | 300.0 | 40.5 | 15.4 | 1943 | 785 | 800 Sc. | Canadian Pacific Ry. Co., Montreal. |
| 141662 | T. L. Church | Toronto | Toronto 1920 | 251.0 | 43.6 | 20.7 | 2264 | 1353 | 147 Sc. | Dominion Shipbuilding & Repair Co., Toronto. |
| 141456 | Two Roses | Halifax, N.S. | Sorel, Que. 1917 | 84.0 | 19.2 | 10.0 | 113 | 14 | 24 Sc. | T. M. Kirkwood, Montreal. |

(1) Formerly New Island Wanderer.
(2) Formerly Pawnee.

* Equipped with wireless.

### SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Tons Reg. | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141609 | Berquist No. 1 | Victoria, B.C. | Scow | Ladner, B.C. 1911 | 81.2 | 26.2 | 6.5 | 116 | 116 | A. Berquist, Vancouver, B.C. |
| 141688 | Donald T. | Lunenburg, N.S. | Schr. | Daysprings, N.S. 1920 | 116.4 | 26.3 | 11.4 | 175 | 163 | W. Duff, Lunenburg, N.S. |
| 141687 | Giant King | Lunenburg, N.S. | " | La Have, N.S. 1920 | 127.4 | 27.6 | 11.0 | 198 | 135 | B. Himmelman, M.O., Rose Bay, N.S. |
| 141538 | J. T. M. No. 1 | New Westminster | Scow | Steveston, B.C. 1920 | 57.3 | 24.0 | 6.0 | 99 | 99 | H. M. Margetts, Steveston, B.C. |
| 141753 | J. R. Edwards | Montreal | Barge. | Marine City, Mich. 1883 | 175.8 | 30.5 | 10.0 | 453 | 422 | T. R. Enderby, Montreal. |
| 141690 | Joyce M. Smith | Lunenburg, N.S. | Schr. | Salmon River, N.S. 1920 | 122.5 | 26.0 | 11.0 | 173 | 113 | W. C. Smith, M.O., Lunenburg, N.S. |
| 141754 | Minnie E. Orton | Montreal | Barge. | Marine City, Mich. 1884 | 178.6 | 30.8 | 10.2 | 456 | 424 | T. R. Enderby, Montreal. |
| 141463 | Nellie T. Walters | Shelburne, N.S. | Schr. | Shelburne, N.S. 1920 | 113.4 | 26.0 | 10.5 | 175 | 139 | R. T. Sainthill, North Sydney, N.S. |
| 141689 | Pauline B. Mosher | Lunenburg, N.S. | " | Yarmouth, N.S. 1920 | 118.6 | 27.5 | 12.4 | 177 | 177 | C. Iverson, M.O., Lunenburg, N.S. |
| 141719 | R. P. 2 | Vancouver, B.C. | " | Vancouver, B.C. 1920 | 80.0 | 30.0 | 7.1 | 147 | 147 | Rat Portage Lumber Co., St. Boniface, Man. |
| 141720 | R. P. L. III | Vancouver, B.C. | Scow | " 1920 | 80.0 | 30.0 | 7.1 | 147 | 147 | Rat Portage Lumber Co., St. Boniface, Man. |
| 141638 | Retraction | La Have, N.S. | Schr. | Conquerall Bank, N.S. 1920 | 119.0 | 26.0 | 11.0 | 183 | 148 | J. N. Rafuse & Sons, Conquerall Bank, N.S. |

# Canadian Government, Merchant Marine Ltd., Shipbuilding, Operation, Etc.

**Launching of Steamships.**—Since Canadian Railway and Marine World for August was issued we have been advised of the following launchings of steel cargo steamships for Canadian Government Merchant Marine.

July 20 and 26, s.s. Canadian Squatter, Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, British American Shipbuilding Co., Welland, Ont. The aft section was launched July 20, and the forward section July 26, both sections being towed to Montreal, where they will be joined together.

July 27, s.s. Canadian Conqueror; Marine Department contract 51; builder's yard no. 78; approximately 8,390 d.w. tons, Canadian Vickers Ltd., Montreal.

Aug. 14, s.s. Canadian Fisher, Marine Department contract 15; builder's yard no. 7; approximately 5,100 d.w. tons, cargo at Sydney, N.S., for Liverpool, Eng.

**Names of Steamships.** — The name chosen for the steel cargo steamship being built under Marine Department contract 54, by Midland Shipbuilding Co., Midland, Ont.; builder's yard no. 10; approximately 3,890 d.w. tons; for Canadian Government Merchant Marine Ltd. has been changed from Canadian Racer to Canadian Logger.

We were officially advised on Aug. 20 that while the contract to be numbered 59, for building a steel cargo steamship by the Nova Scotia Steel & Coal Co., builder's yard no. 8, approximately 2,800 d.w. tons, had not been signed, the name Canadian Sapper has been selected, in the event of the contract being awarded. The keel for this ship was laid May 4.

**Oil Fuel Equipment.**—We are officially advised that oil fuel equipment will be provided on the following ships being built for Canadian Government Merchant Marine Ltd., viz.: Canadian Highlander and Canadian Skirmisher, Wallace Shipyards Ltd., North Vancouver, B.C.; Canadian Challenger, Davie Shipbuilding & Repair Co., Lauzon, Que.; Canadian Transporter and Canadian Freighter, J. Coughlan & Sons, Vancouver, B.C.

**Passenger Accommodation for Trade with West Indies.**—The question of providing some passenger accommodation, on some of the steel cargo steamships being built for Canadian Government Merchant Marine, to be used in the West Indian service has been under the Marine Department's consideration, and it has been decided to make the changes necessary in the two ships being built by Tidewater Shipbuilders Ltd., Three Rivers, Que., viz., Canadian Fisher, and Canadian Forrester, each approximately 5,100 d.w. tons, and similar changes in other ships are being considered. This, however, can only be a temporary expedient, as these ships will have a speed of only 11 knots, which is not sufficient for passenger business, and if a passenger service with the West Indies is to be operated successfully, the ships will have to be of a class to compete on even terms with those sailing from New York.

**Refrigeration Equipment.**—We are officially advised that refrigerator equipment will be fitted in the following ships now building for Canadian Government Merchant Marine Ltd., viz., Canadian Winner and Canadian Traveller, by Harbour Marine Co., Victoria, B.C.; Canadian Exporter, Canadian Inventor and Canadian Prospector, by J. Coughlan & Sons, Vancouver, B.C.; Canadian Cruiser and Canadian Constructor, by Halifax Shipyards Ltd., Halifax, N.S.; Canadian Victor, Canadian Conqueror, Canadian Commander, and Canadian Leader, by Canadian Vickers Ltd., Montreal; Canadian Highlander and Canadian Skirmisher, by Wallace Shipyards Ltd., North Vancouver, B.C.

**Steel Cargo Steamship Canadian Runner, approximately 4,350 d.w. tons, built for Canadian Government Merchant Marine Ltd., by Port Arthur Shipbuilding Co., Port Arthur, Ont.**

Tidewater Shipbuilders Ltd., Three Rivers, Que.

**Deliveries of Steamships.**—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following deliveries have been made to Canadian Government Merchant Marine Ltd.:—

July 17, s.s. Canadian Inventor, Marine Department contract 36; builder's yard no. 13; approximately 8,390 d.w. tons; J. Coughlan & Sons, Vancouver, B.C. This ship loaded general cargo and lumber and sailed from Vancouver, Aug. 13, for Sydney and Melbourne, Australia.

July 18, s.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4; approximately 4,575 d.w. tons; British American Shipbuilding Co., Welland, Ont. This ship loaded a general cargo at Montreal and sailed Aug. 20 for Barbados, Trinidad and Demerara.

Aug. 10, s.s. Canadian Hunter, Marine Department contract 18; builder's yard no. 460; approximately 5,100 d.w. tons; Davie Shipbuilding & Repairing Co., Lauzon, Que. This ship loaded a

**Officers of Steamships.**—The following masters have been appointed to steamships by Canadian Government Merchant Marine Ltd., since those mentioned in our last issue:—Canadian Miner, Capt. A. Blouin, vice Capt. M. Fraser, resigned; Canadian Otter, Capt. J. McFadyen; Canadian Victor, Capt. M. Robertson; Canadian Volunteer, Capt. C. R. Bissett. Chief engineers have been appointed as follows:—Canadian Conqueror, J. J. Pringle; Canadian Spinner, W. Humphreys.

The s.s. Canadian Inventor, which loaded lumber at Chemainus, B.C., towards the end of July, for Australia, is expected back at Vancouver about Nov. 1, when she will inaugurate the Canadian Government Merchant Marine service to India and other Oriental ports. It is stated that capacity cargo for this ship has already been booked for Shanghai, Hong Kong, Singapore, Calcutta, etc.

British American Shipbuilding Co., Welland, Ont., advised us Aug. 18 that the s.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4;

approximately 4,575 d.w. tons; which was launched at Welland in two sections, and towed to Montreal, had been joined together at Canadian Vickers Ltd. plant, and had been delivered to the Marine Department. She subsequently loaded a general cargo at Montreal and sailed Aug. 20 for Barbados, Trinidad and Demerara.

British American Shipbuilding Co. launched the s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, in two sections, the aft section on July 20, and the forward section on July 26. The two sections will probably leave Welland, in tow, about Sept. 15, for Montreal, where they will be joined together at Canadian Vickers Ltd. plant.

Canadian Vickers Ltd., Montreal, launched the steel cargo steamship Canadian Conqueror: Marine Department contract 51; builder's yard no. 78; approximately 8,390 d.w. tons, for Canadian Government Merchant Marine, July 27.

J. Coughlan & Sons, Vancouver, B.C., delivered the steel cargo steamship Canadian Inventor; Marine Department contract 36; builder's yard no. 13; approximately 8,390 d.w. tons, to the Marine Department July 17. She was transferred to Canadian Government Merchant Marine Ltd., loaded with general cargo and lumber, and sailed Aug. 13 for Sydney and Melbourne, Australia.

Davie Shipbuilding & Repairing Co., Lauzon, Que., delivered the steel cargo steamship Canadian Hunter, Marine Department contract 18; builder's yard no. 460; approximately 5,100 d.w. tons; to the Marine Department, Aug. 10. She was transferred to Canadian Government Merchant Marine, and proceeded to Sydney, N.S., and loaded a cargo for Liverpool, Eng.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—The s.s. Canadian Runner, Marine Department contract 32; builder's yard no. 43; approximately 4,350 d. w. tons, built by this company, sailed from Port Arthur, Ont., Aug. 8, with a cargo of grain for Port Colborne, on her way to the ocean. She is stated to be the largest ocean going freight steamship ever built on the Great Lakes and she will be cut in two by the Great Lakes Engineering Co. at Ashtabula, Ohio, and the two sections will be towed through the canals by the Great Lakes Towing Co., to Montreal, where the sections will be rejoined by Canadian Vickers Ltd., after which she will be operated on the West Indies route. Her keel was laid Aug. 29, 1919, and she was launched May 8, 1920. Her dimensions are,—length overall 333 ft. 7 in., length b.p. 319 ft. 10⅝ in., breadth moulded 43 ft. 10 in., depth moulded 25 ft. She is of the two deck, poop, bridge and forecastle type with 'tween decks, and is equipped with triple expansion condensing engines of 1,900 h.p., supplied with steam by two Scotch boilers, each 15 ft. diar. by 11 ft. long, under forced draft. Her propellers are of bronze, and on her trial trip she developed a speed of 12 knots an hour.

Tidewater Shipbuilders Ltd., Three Rivers, Que., launched the steel cargo steamship Canadian Fisher, Marine Department contract 15; builder's yard no. 7; approximately 5,100 d.w. tons, on Aug. 14. The upper structures of this ship, and of the s.s. Canadian Forrester; Marine Department contract 16; builder's yard no. 8; approximately 5,100 d.w. tons, are to be changed, so as to provide for carrying a limited number of passengers between Canada and the West Indies.

## Coal Exportation Prohibited and Rules for Bunkering Atlantic Steamships Suggested.

Under authority of an act passed by the Dominion Parliament at its last session, and which was published in full in Canadian Railway and Marine World for August, pg. 431, the Board of Railway Commissioners passed general order 301, July 22, as follows:—"In the matter of the question of the coal supply in Canada, and the powers conferred upon the board by chap. 66 of the acts of the Parliament, 1920: Upon its appearing to the board that there is a real or apprehended scarcity of coal, with a view to conserving the supply, and in pursuance of the powers conferred by the said act, the board doth order that the exportation of coal from the Atlantic, St. Lawrence River and Gulf ports of Canada, except to the United States or to Newfoundland, unless otherwise permitted, and in accordance with regulations to be promulgated by the board, be, and it is hereby prohibited on and after Aug. 1, 1920."

### Suggestions for Bunkering Atlantic Steamships.

Hon. F. B. Carvell, Chief Railway Commissioner, has written Thos. Robb, Manager, Shipping Federation of Canada, as follows:—"In order to conserve to as great degree as possible the coal supplies of Canada, this board, as you are already aware, has by order prohibited the exportation of coal from Eastern Canada after Aug. 1, which will release nearly 100,000 tons a month for home consumption which has been exported during the present summer. This, if properly distributed, should to some extent relieve the situation. We have interviewed the Interstate Commerce Commission, the Chairman of the American Railway Association, and others in authority in that country, earnestly desiring a larger amount of U.S. coal, and do not feel we are treating them fairly in allowing coal imported presumably for our domestic purposes to be used for bunkering ships not only across the Atlantic, but for the return voyage, as has been a very common practice since the opening of navigation on the St. Lawrence. While realizing the responsibility resting upon this board, as well as the danger of interfering with the trade routes of the country, we have decided for the present not to issue positive orders, but to express to you our wishes re the bunkering of coal as follows:—

"That passenger and freight liners for United Kingdom ports running on schedule may be bunkered at Montreal.

"That passenger and freight liners to French Atlantic ports may be bunkered to destination and thence to a United Kingdom port only, unless it be a liner returning direct to Canada, when it may receive sufficient bunkering to bring it back to Canada.

"That tramp steamships should be allowed only sufficient coal at Montreal or Quebec to carry them to Sydney, and at that point should receive sufficient coal to take them to destination, and, if bound to the Mediterranean, sufficient to bring them back to Gibraltar.

"That all vessels for South Africa, South America, the West Indies, Australia and New Zealand must be bunkered at Sydney, N.S., where they will be provided with sufficient coal for a return or to first coal port, excepting vessels loading at Montreal or other Canadian port requiring surplus bunkers stowed under cargo, this to be supplied at the loading port.

"That all vessels leaving a United Kingdom port should, whenever possible, obtain sufficient coal for the voyage to Canada and return."

It is reported from Sydney, N.S., that 23 ocean steamships, which were waiting in port, in the hope that the prohibition against the exportation of coal to Europe, would be removed or modified, sailed for other ports Aug. 16. One, the s.s. Lord Dufferin, which, it is stated, had about 7,000 tons of coal on board at the time the prohibition went into effect, was allowed to leave for Holland.

## Canal Traffic Statistics.

Figures issued by the Dominion Bureau of Statistics show a falling off in traffic through Canadian canals in July. The total number of vessels through all canals was 4,969, with 1,971,193 net tonnage, a decrease from July, 1919, of 261,399 tons. Cargoes totalled 1,272,746 tons, a decrease of 210,378. Since the opening of navigation the cargoes through the canals are: Bituminous coal, 1,201,806 tons, decrease 136,954; anthracite coal, 172,542 tons, decrease 41,785; iron ore, 464,043 tons, decrease 1,214,-680; pulpwood, 259,828 tons, increase 62,-814; wheat, 562,815 tons, decrease 327,-368; oats, 88,312 tons, increase 1,128; flour, 104,367 tons, decrease 60,323.

The main July cargoes, as compared with July, 1919, are: Bituminous coal, 489,423 tons, decrease 6,376; wheat, 127,-000 tons, decrease 1,738; iron ore, 79,768 tons, decrease 123,816; pulpwood, 124,-835 tons, increase 15,177; anthracite coal, 68,534 tons, decrease 6,732; sand, 106,348 tons, increase 36,371.

Toronto Floating Drydock.—John E. Russell, contractor, Toronto, has bought a floating drydock, in Montreal, and it is being towed to Toronto, where it will be used for the repair and overhaul of ships. The dock was a part of the plant which was established in Montreal by the U.S. Emergency Fleet Corporation, for use in connection with the joining of U.S. ships which were sent through the Welland Canal from the Great Lakes to the seaboard, during the war. The dock, which is built in sections, capable of being added to, is stated to be about 300 ft. long, and it is probable that it will be acquired by the Toronto Dry Dock Co., which, in 1917, bought a floating drydock about 160 ft. long, at Sturgeon Bay, Wis., with which it may be incorporated, thus giving sufficient dock capacity for handling the larger ships trading on the lakes. The Toronto Dry Dock Co. was incorporated under the Ontario Companies Act in 1917, the incorporators being C. S. Boone, President; J. E. Russell, Vice President and Managing Director; L. Solman, Manager, Toronto Ferry Co., J. J. Manley, and H. Dickson.

Vaccination of Steamship Passengers, Quebec press dispatch.—Steamship officials are disturbed over orders issued by the Immigration Department that no passengers on ocean liners, whether saloon, second cabin or third class, be permitted to land at Canadian ports before being vaccinated, unless they can give proof that they have been vaccinated within the required time. They point out that the ruling is absurd, since passengers can land at any point in the United States and enter Canada by rail without being vaccinated.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council. to place orders for. and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with the finally ascertained deadweight tons multiplied by the price per ton,the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d.. three deck; lake, lake type; p. poop; b.. bridge; f'c's'le. forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4,575 | $207. | $ 947,025 | S.d.. p., b. and f'c's'le | Lloyd's | 11 | June 11. 1918 | Nov. 23. 1918 | Feb. 22. 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " | 67 | *8,408 | 180. | 1,513.440 | 2.d., p., b and f'c's'le | " | 11 | July 17. 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbldg. Co., C'wood. | 61 | *3,995 | 205. | 818.975 | Lake. s.d.. p.. b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd. | 100 | *4.495.75 | 207. | 930,620.25 | 2.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19. 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | *4,540 | 217. | 985,180 | S.d.. p., b. and f'c's'le | " | 11 | Nov. 15. 1918 | May 31, 1919 | Aug. 7. 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | 2.d., p., b. and f'c's'le | " | 11 | Apr. 5. 1919 | Oct. 9. 1919 | Nov. 15. 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | 2.d., p., b. and f'c's'le | " | 11 | May 31. 1919 | Dec. 11. 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbldg. Co., C'wood, | 62. | *3,964 | 205. | 812,620 | Lake. s.d., p.. b. and f'c's'le | Bri. Corp. | 9 | Jan. 3, 1919 | May 3. 1919 | June 7. 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | *3,975 | 205. | 814,926.25 | 2.d., p., b. and f'c's'le | " | 9 | Jan. 16. 1919 | June 28, 1919 | Aug. 30. 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | *3,978 | 205. | 815.541.25 | 2.d., p., b. and f'c's'le | " | 9 | Feb. 10. 1919 | Oct. 4. 1919 | Nov. 6. 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1.020,000 | S.d.. p.. b. and f'c's'le | Lloyd's | 11 | Jan. 8. 1919 | Sept. 20. 1919 | Dec. 2. 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | *4.850 | 200. | 967,000 | 2.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1. 1919 | July 11, 1920 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5.100 | 200. | 1,020,000 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 20. 1919 | Aug. 14, 1920 | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5.100 | 200. | 1,020,000 | 2.d., p., b. and f'c's'le | " | 11 | Nov. 1. 1919 | ..... | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | *4.992 | 200. | 998,400 | 2.d., p., b. and f'c's'le | " | 12 | Mar. 11, 1919 | Oct. 9. 1919 | June 24. 1920 |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | *4,992 | 200. | 998.400 | 2.d., p., b. and f'c's'le | " | 12 | Mar. 28. 1919 | May 7. 1920 | Aug. 10, 1920 |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | *3.341 | 205. | 684.905 | Lake. s.d., p.. b. and f'c's'le | " | 10½ | Dec. 9, 1918 | May 5. 1919 | July 18. 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3.408 | 210. | 715,680 | Lake, s.d., p.. b. and f'c's'le | " | 10 | Mar. 31. 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sallor | " " | 40 | *3.357 | 205. | 688,185 | Lake. s.d., p.. b. and f'c's'le | " | 10½ | Dec. 10. 1918 | May 31. 1919 | Aug. 7. 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3,406 | 210. | 715.207.50 | Lake, s.d., p., b. and f'c's'le | " | 10 | Mar. 31, 1919 | Oct. 9. 1919 | Nov. 18. 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1,636,050 | 2.d., p.. b and f'c's'le | " | 10 | Feb. 24. 1919 | ..... | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " | 2 | 8,390 | 195. | 1,636.050 | 2.d.. p.. b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | *4,581 | 215. | 984,915 | 2.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18. 1919 | Nov. 22. 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8,382 | 188. | 1,575,816 | 2.d.. p.. b and f'c's'le | " | 11 | Aug. 26. 1918 | Apr. 19. 1919 | May 23. 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1.577.508 | 2.d.. p., b and f'c's'le | " | 11 | Nov. 30. 1918 | May 7. 1919 | Aug. 14. 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | *8.390 | 188. | 1,577,320 | 2.d.. p.. b and f'c's'le | " | 11 | Dec. 2. 1918 | Aug. 16. 1919 | Sept. 24. 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8.393 | 188. | 1,577,884 | 2.d.. p., b and f'c's'le | " | 11 | Apr. 23. 1919 | Nov. 8. 1919 | Dec. 6. 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | *8,399.30 | 188. | 1,579,068.40 | 2.d., p.. b and f'c's'le | " | 11 | May 10. 1919 | Nov. 22. 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Winner | Harbour Marine Co. Ltd. | 1 | 8,390 | 198. | 1,661.220 | 2.d., p.. b and f'c's'le | " | 11 | July 14, 1919 | June 29. 1920 | ..... |
| 30 | Jan. 24, 1919 | Canadian Traveller | " " | 2 | 8.390 | 198. | 1.661,220 | 2.d., p.. b and f'c's'le | " | 11 | Aug. 9. 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | 3,965.50 | 205. | 812.722.50 | 2.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7. 1919 | Dec. 10. 1919 | May 11. 1920 |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,350 | 215. | 935,250 | 2.d., p.. b. and f'c's'le | " | 11 | Aug. 29. 1919 | May 8, 1920 | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " | 44 | 4,350 | 215. | 935,250 | 2.d.. p., b. and f'c's'le | " | 11 | Aug. 29, 1919 | June 26, 1920 | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | *8,381 | 198. | 1.659.438 | 2.d., p., b and f'c's'le | Lloyd's | 11 | Apr. 26, 1919 | Dec. 6. 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | *8,380 | 198. | 1.659,240 | 2.d., p.. b and f'c's'le | " | 11 | May 3. 1919 | Dec. 27, 1919 | Mar. 6. 1920 |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | *8,350 | 198. | 1,653,300 | 2.d.. p., b and f'c's'le | " | 11 | July 24. 1919 | Jan. 24, 1920 | July 17. 1920 |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | *8.350 | 198. | 1,653,300 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26. 1919 | Feb. 24, 1920 | June 15. 1920 |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10.500 | 197.50 | 2.073.750 | 3.d. p.. and f'c's'le | " | 12 | Oct. 2. 1919 | ..... | ..... |
| 39 | Dec. 10. 1918 | Canadian Constructor | " " | 4 | 10,500 | 197.50 | 2.073,750 | 3.d. p.. and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | *2.776.50 | 210. | 583,065 | S.d.. p.. b. and f'c's'le | " | 8½ | Mar. 27. 1919 | Oct. 8, 1919 | Dec. 20, 1919 |
| 41 | Mar. 31, 1919 | Canadian Miner | " | 6 | *2,778 | 210. | 583,380 | S.d.. p.. b. and f'c's'le | " | 8½ | Mar. 31. 1919 | Apr. 3, 1920 | May 7. 1920 |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8.390 | 198. | 1.661.220 | 2.d., p.. b. and f'c's'le | Bri. Corp. | 11 | Sept. 27. 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8.390 | 198. | 1.661.220 | 2.d.. p.. b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983.625 | 2.d., p.. b. and f'c's'le | " | 11 | Mar. 29. 1919 | Apr. 13. 1920 | July 18, 1920 |
| 45 | Jan. 23. 1919 | Canadian Squatter | " " " | 5 | 4.575 | 215. | 983,625 | 2.d.. p., b. and f'c's'le | " | 11 | July 14. 1919 | July 26. 1920 | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbldg. Co., C'wood. | 65 | *3,954 | 180. | 711,720 | 2.d.. p., b. and f'c's'le | " | 11 | Sept. 3. 1919 | Dec. 27. 1919 | Apr. 28, 1920 |
| 47 | Sept. 11, 1919 | Canadian Observer | " | 66 | *3,950 | 180. | 711,000 | 2.d.. p., b. and f'c's'le | " | 11 | Sept. 12. 1919 | May 8. 1920 | June 15, 1920 |
| 48 | Sept. 2. 1919 | Canadian Pathfinder | Dominion Shipbuilding Co. | 10 | 3.500 | 180. | 630.000 | Lake. s.d., p., b. and f'c's'le | Lloyd's | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2. 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d.. p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426.300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10. 1919 | June 22. 1920 | ..... |
| 51 | Sept. 18. 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426.300 | 2.d. p., b. and f'c's'le | " | 11 | Jan. 17, 1920 | July 27, 1920 | ..... |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p.. b. and f'c's'le | " | 11 | June 2, 1920 | ..... | ..... |
| 53 | Sept. 18. 1919 | Canadian Leader | " " " | 80 | 8,390 | 170. | 1,426,300 | 2 d. p.. b. and f'c's'le | " | 11 | June 29. 1920 | ..... | ..... |
| 54 | Feb. 26. 1920 | Canadian Logger | Midland Shipbuilding Co. | 10 | 3,890 | 182.50 | 709.925 | 2.d.. p.. b. and f'c's'le | Bri. Corp. | 11 | June 9, 1920 | ..... | ..... |
| 55 | Mar. 18, 1920 | Canadian Highlander | Wallace Shipyards Ltd. | 103 | 8.390 | 167.50 | 1,405.325 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 56 | Mar. 18. 1920 | Canadian Skirmisher | " " | 104 | 8,390 | 167.50 | 1,405.325 | 2.d. p.. b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 57 | Mar. 13. 1920 | Canadlan Rover | Collingwood Shipbldg. Co., C'wood. | 67 | 3.890 | 182,50 | 709,925 | 2.d.. p.. b. and f'c's'le | Bri. Corp. | 11 | June 5. 1920 | ..... | ..... |
| 58 | Mar. 13, 1920 | Canadian Coaster | Collingwood Shipbldg Co., Kingston | 16 | 3,890 | 185.50 | 709,925 | 2.d.. p.. b. and f'c's'le | " | 11 | May 6, 1920 | ..... | ..... |
| 59 | ..... | Canadian Sapper | Nova Scotia Steel & Coal Co. | 8 | 2.800 | 190. | 532.000 | 2.d., p., b. and f'c's'le | Lloyd's | 8½ | May 4, 1920 | ..... | ..... |
| 60 | Feb. 2, 1920 | Canadian Challenger | Davie Shipbuilding & Repairing Co. | 476 | 8,390 | 167.50 | 1,405.325 | 2.d. p.. b. and f'c's'le | " | 11 | May 14, 1920 | ..... | ..... |
| 61 | Feb. 26, 1920 | Canadian Harvester | Port Arthur Shipbuilding Co. | 45 | 3.890 | 182.50 | 709.925 | 2.d.. p., b. and f'c's'le | Bri. Corp. | 11 | Mar. 30. 1920 | ..... | ..... |
| 62 | April 7, 1920 | Canadlan Transporter | J. Coughlan & Sons | 20 | 8,390 | 167.50 | 1,405.325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 63 | April 7, 1920 | Canadian Freighter | " | 21 | 8,390 | 167.50 | 1,405.325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 379,258.05 | | $72,773,537.15 | | | | | | |

# Canada-West Indies Trade Agreement and Steamship Services.

During June a conference was held at Ottawa between members of the Governments of Canada, the Bahamas Islands, Barbados, Bermuda, British Guiana, British Honduras, Jamaica, the Leeward Islands, Trinidad and the Windward Islands, to consider the extent to which, and the means by which, the trade relations between Canada and the several colonies mentioned above could be rendered closer and more intimate, their trade extended and enlarged, and the means of communication between them improved and rendered fully efficient for all purposes. In the agreement arrived at, which was made public early in August, the Dominion Government affirms the principle of granting a preference on all goods being the produce or manufacture of any of the colonies mentioned above imported into Canada, which are now subject to duty or which may be made subject to duty at any future time, and the said colonies affirm the principle of granting a preference on all goods being the produce or manufacture of Canada imported into such colonies, which are now subject to duty or which may be made subject to duty at any future time. The preferences are set out in an appendix to the agreement.

The agreement contains the following provisions in regard to ship services:—

Article VIII. The governments of any of the colonies aforesaid, on giving six months notice, may provide that to be entitled to the concessions granted in articles V and VI the products of Canada shall be conveyed by ship direct without transhipment from a Canadian port into the said colony or by way of one of the other colonies entitled to the advantages of this agreement.

The Government of Canada on giving six months notice may provide that, to be entitled to the concessions granted in articles II and III, the products of any of the colonies aforesaid shall be conveyed by ship direct without transhipment from the said colony or from one of the other colonies entitled to the advantages of this agreement into a Canadian port. Provided that, should the discretion recognized in this article be at any time exercised by the Government of Canada, provision shall be made, in all contracts entered into with steamships subsidized by the Dominion and the colonies aforesaid and plying between ports in Canada and ports in the said colonies, for an effective control of rates of freight.

Steamship Services—Eastern Group.

Article X. The Government of Canada will use its best endeavors to arrange for a mail, passenger and freight steamship service to come into effect as soon as possible, and in any case within three years, between Canada, Bermuda, the Leeward Islands, the Windward Islands, Barbados, Trinidad, and British Guiana, on the following lines:

(1) Steamers shall sail weekly from St. John or Halifax, calling one week on the outward passage at Bermuda, Barbados, Trinidad and British Guiana, and on the homeward passage at Trinidad, Grenada, St. Vincent, Barbados, St. Lucia, Dominica, Montserrat, Antigua, Nevis, St. Kitts and Bermuda; on alternate weeks calling on the outward passage at Bermuda, St. Kitts, Nevis, Antigua, Montserrat, Dominica, St. Lucia, Barbados, St. Vincent, Grenada, Trinidad, and British Guiana, and on the homeward passage at Trinidad, Barbados, and Bermuda.

(2) The steamers shall be from 5,000 to 6,000 tons gross, capable of maintaining an ocean speed of 12 knots, and providing accommodation for 100 first class, 30 second class, and 100 steerage, or deck, passengers, and shall be provided with 'tween decks.

Article XI. The Government of Canada will stipulate in any contract entered into for such steamship service that:—

(1) There shall be reasonable proportionate allocation of passenger and cargo accommodation between the colonies mentioned in article X.

(2) There shall be no unfair differentiation in rates of freight against the smaller colonies as compared with the rates to larger colonies situated at a similar distance from St. John or Halifax.

(3) The steamers shall be so constructed that, so far as the traffic warrants, cold storage shall be provided if this can be secured without unreasonable additional cost.

Article XII. If a subsidized steamship service is arranged for, the Government of Canada will endeavor to secure the co-operation of the owners of such steamship service towards the provisions of hotels and bungalows in the colonies, the governments of the colonies being prepared on their part to offer such facilities as may be practicable, both as regards sites and financial assistance.

Article XIII. The representatives of the colonies mentioned in article X undertake to recommend to their governments that these governments shall contribute towards such subsidized steamship service, when established, not less than the following amounts annually: Barbados, £5,000; Bermuda, £2,000; British Guiana, £7,500; Leeward Islands, £2,500; Trinidad, £7,500; Windward Islands, £2,500; total, £27,000.

Article XIV. Pending the establishment of such service the Government of Canada will use its best endeavors to maintain a fortnightly service on the existing lines and to supplement it with such additional freight or passenger and freight vessels as the trade may require.

Steamship Services—Western Group.

Article XV. The Government of Canada, subject to the adoption by the Governments concerned of the recommendations embodied in article XVI, undertakes to provide as soon as possible, and in any case not later than Jan. 1, 1921, a fortnightly freight, mail and passenger steamship service between Canada, the Bahamas, Jamaica, and British Honduras, on the following lines:—

(1) The steamers shall not be less than 3,500 long tons d.w., shall have an ocean going speed of not less than 10 knots, and shall have accommodation for from 15 to 20 first class passengers, and shall be provided with 'tween decks, and, so far as the traffic warrants, with cold storage, if this can be secured with reasonable cost.

(2) The steamers shall sail from such Canadian ports as freight conditions require and shall proceed to Belize in British Honduras, calling at Nassau in the Bahamas, and at such port or ports in Jamaica as may be necessary, and shall call on the return voyage at such port or ports in Jamaica as may be necessary, and at Nassau.

Article XVI. The representatives of the colonies mentioned in article XV undertake to recommend to their governments that these governments shall, if the service proves unremunerative, contribute 25% of any loss; provided that the amounts contributed shall not exceed, in the case of the Bahamas, £3,000 a year; in the case of British Honduras, £5,000 a year, and in the case of Jamaica, £5,000 a year.

Article XVII. This agreement shall be subject to the approval of the Parliament of Canada and of the legislature of each of the colonies aforesaid, and of the Secretary of State for the Colonies. Upon such approval being given, the agreement shall be brought into force at such time as may be agreed upon between the governments of Canada and of the colonies aforesaid by proclamation to be published in the Canada Gazette and in the official gazette of each of the said colonies.

Article XVIII. This agreement shall remain in force for ten years after the proclamation aforesaid and thereafter until terminated by 12 months written notice given either by the Government of Canada, or by the government of any of the colonies aforesaid, but in the latter case the agreement shall remain in full force and effect as to any of the other colonies which have not given such notice.

A Halifax, N.S., press dispatch says a meeting of the local board of trade's council was held there Aug. 20 to discuss a matter in connection with the Canada-West Indies trade agreement, information having been received by the board to the effect that unless certain conditions are complied with Bermuda may be left out as a port of call. It was shown that Bermuda's purchases in Canada amount to practically $1,500,000, Halifax sharing largely in this. The council decided to write the Minister of Trade and Commerce, asking if the information is correct, and if it is, the board will make representations in the matter.

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**Welland Canal Lock Gate Accident.**—While the s.s. Robert R. Rhodes, owned by W. E. Lawlor, Hawkesbury, Ont., upbound and light, was being raised in lock 9, Welland Canal, Aug. 3, the two lower gates of the lock were broken over, and it was necessary to replace them by spare gates. It is stated that the ship did not touch the gates and that apparently the valves in the upper gates were opened when the lower gates were not properly mitered, but whether the responsibility for this rests on the lock motormen, or the ships crew, was not determined. Navigation was resumed at 6.30 a.m. Aug. 4, very few ships being delayed. The cost of the lock repairs is estimated at $6,000, the ship was not damaged.

**South American Steamship Co. Ltd.** has been incorporated under the Dominion Companies Act, with $750,000 authorized capital and office at Toronto, to operate freight and passenger steamships, and to carry on general navigation, transportation and other allied businesses. The incorporators are: M. L. Gordon, J. S. Duggan, J. W. Bicknell, T. S. H. Giles and M. H. MacGregor, Toronto.

**The American Association of Port Authorities** will hold its convention at Chicago, Ill., Oct. 4 to 6. A number of papers will be read, four of them dealing with Canadian ports.

# The United Kingdom Resumes Supremacy in Shipbuilding.

By Harrison Watson, Chief Canadian Trade Commissioner in the United Kingdom.

The outstanding feature of Lloyd's shipbuilding report for the quarter ended June 30, 1920, is that the further and uninterrupted increase in the tonnage of merchant vessels under construction in the United Kingdom has enabled that country to almost reverse her position of a year ago in comparison with the United States, in so far that, while on June 30, 1919, the tonnage building in the United States exceeded that under construction in the United Kingdom by approximately 1,350,000 tons, the surplus at the present time in favor of the United Kingdom is about 1,472,000 tons. In fact shipbuilding in the United States during the past year has fallen off by nearly a half, because whereas the tonnage returns under construction on June 30, 1919, showed 994 ships with a gross tonnage of 3,874,143, the present position shows 414 aggregating only 2,105,956 tons. The opposite result achieved in the United Kingdom is shown in the following table:

| Description. | June 30, 1920. No. | Gross tons. |
|---|---|---|
| Steam. | | |
| Steel | 888 | 3,563,251 |
| Ferro-Concrete | 3 | 860 |
| Wood and composite | 4 | 1,799 |
| Total | 895 | 3,565,910 |
| Sail. | | |
| Steel | 41 | 9,469 |
| Ferro-concrete | 3 | 2,174 |
| Wood and composite | 2 | 600 |
| Total | 46 | 12,243 |
| Total, steam and sail | 941 | 3,578,153 |

During the past three months ended June 30, 200 steamships, aggregating 584,829 tons, and 14 sailing ships with a tonnage of 3,775 tons, were commenced, while 154 steamships with a tonnage of 518,568 and 11 sailing ships aggregating 4,375 tons were launched.

It seems scarcely necessary to state that the extraordinary increase in U.S. ship construction which took place during the war was due to unique circumstances which have now largely passed away, and the results achieved are a lasting tribute to U. S. enterprise. Upon the other hand, even if there has been a heavy falling off from the express speed of war requirements, the U.S. has risen from her comparatively humble pre-war position to that of the second shipbuilding nation in the world, and on June 30 was constructing more than half of the merchant ships building in the whole of the world outside of the United Kingdom, with an output more than five times greater than her nearest competitor on that date—Holland.

Lloyd's figures show that on June 30 merchant ships being built in the whole world aggregated 7,720,904 tons, to which the United Kingdom contributed 3,578,153 tons, and all other countries 4,142,751 tons, which is in striking comparison with similar figures of a year ago, when the United Kingdom's share of 8,017,767 tons was only 2,524,050 tons against 5,493,717, so that the proportion during the twelve months has risen from 30% to 46%.

Construction in the British dominions has fallen from 346,453 tons in June, 1919, to 268,799 at present, and Canada's proportion has gone back from 261.643 tons to 209,405, but this is entirely due to a reduction of 78,000 tons in wooden ships, and there was an actual increase in steel ships of 26,000 tons.

The gross tonnage of merchant ship construction on June 30, 1920, in the principal countries, excluding the United Kingdom, was:—

| | Tons. |
|---|---|
| United States | 2,105,956 |
| Holland | 398,915 |
| Italy (including Trieste) | 353,914 |
| British Dominions | 268,799 |
| France | 265,302 |
| Japan | 254,260 |
| Sweden | 125,899 |
| Denmark | 118,439 |
| Norway | 87,589 |

### A United States View of the Situation.

Washington, D.C., press despatch, Aug. 16.—Lloyd's shipbuilding returns, just issued, show that the volume of shipping under construction in England has increased by nearly 60% during the last 15 months, while that of the United States has been reduced by nearly 50%. The complete change of position between the two countries is illustrated by the following figures. At the end of June, 1919, the amount of tonnage under construction in the United States exceeded that of Great Britain by over 1,250,000 tons. This excess in the U.S. had by the end of 1919 been turned into an excess in Great Britain of 27,000 tons, while at this time the amount of tonnage being built in England exceeds that of the United States by nearly 1,500,000 tons.

| March 31, 1920. No. | Gross tons. | June 30, 1919. No. | Gross tons. |
|---|---|---|---|
| 814 | 3,379,731 | 701 | 2,489,820 |
| 7 | 1,401 | 10 | 2,456 |
| 4 | 1,799 | 8 | 2,293 |
| 825 | 3,382,931 | 719 | 2,494,569 |
| 35 | 8,451 | 35 | 9,873 |
| 4 | 2,854 | 28 | 19,608 |
| 1 | 189 | ..... | ..... |
| 40 | 11,494 | 63 | 29,481 |
| 865 | 3,394,425 | 782 | 2,524,050 |

The explanation of this great change, according to reports received here, is said to lie in the fact that British shipbuilding industries, released from government control, are now working off five years' arrears, whereas the great revival in the U.S., due to the war, is now declining.

Closer analysis of the relative shipping position of the two nations discloses the fact that, while U.S. tonnage has increased by over 10,000,000 tons in six years, that of Great Britain is still less than it was in 1914 by 781,000 tons, and that during the year ended June 30, 1920, the U.S. merchant marine fleet increased over 2,500,000 tons, whereas the British increase was only slightly over 1,750,000 tons.

The total amount of tonnage under construction in England is just over 3,500,000 tons, and for the rest of the world slightly over 4,000,000 tons, which seems to indicate that in a very short time the supply of cargo tonnage will exceed the demand. Freights are already falling and the market price of cargo tonnage has dropped by 25%.

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The Northern Chartering Co. has been incorporated under the Manitoba Companies Act, with $10,000 authorized capital and office at Winnipeg, to carry on business as general brokers and agents for ships, marine and other insurance, transportation lines, etc. The incorporators are: R. D. and A. T. H. Smith, A. J. Milligan, W. S. McEwen, and C. Darragh, Winnipeg.

## Increases in Great Lakes Freight and Passenger Rates.

Washington, D.C., press dispatch, Aug. 24.—Increases of 40% on freight traffic and 20% on passenger traffic between ports on the Great Lakes were authorized by the Shipping Board today. The increases may be made effective on one day's notice not later than Jan. 1, 1921. It is said the carriers will increase the rates at once, in accord with the decision, which says, in part:—"The advances proposed by the Great Lakes carriers approximate 40% on freight and 20% on passenger traffic. It appears from the record that the expenses incident to the operation of vessels on the Great Lakes have increased substantially to the same extent as on the Atlantic coast. For example, it was shown that these carriers are now paying for bunker coal approximately 100% more than they paid in 1919, and they claim to be receiving a poorer quality than was then available. These carriers also claim that they are paying 60% more for materials and supplies, and 40% more for labor than they paid in 1919. A situation existing on the Great Lakes which does not confront the carriers operating on the Atlantic and Gulf coasts is that the Great Lakes operations are seasonal, and during several months of the year some of the carriers are obliged to discontinue operation on account of weather conditions. During this non-operating period the overhead and fixed charges of the carriers remain fairly constant."

## Radiotelegraph Direction Finding Stations.

The Sydney, N.S., Post contained the following recently:—"The local office of the Marine Department has been informed that radiotelegraph direction finding stations are to be opened by the government at Chebucto Head, Canso and Cape Race. The purpose of this type of station is to ascertain the true bearings of a ship from the station, thus affording aid to mariners in determining their position."

The facts are, that the Naval Service Department erected four of these stations, at Cape Sable, Chebucto Head, Cape Canso and Cape Race, during the war, but for easily understood reasons this was not given publicity. When the restrictions on publicity were removed, Canadian Railway and Marine World dealt with the matter fully, a descriptive article, with illustrations, being given in the issue of May, 1919.

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**Sydney, Australia, Port Improvements.** Additional railway and harbor facilities for Sydney, New South Wales, are being provided at Darbor, west of the city and at the head of the landlocked bay on which the city is situated. An area of 23 acres at the inner end of Darling harbor has been reclaimed by filling. Double deck steel and concrete freight sheds are being built on long piers for ocean steamship service, and will be served by a waterfront railway connecting the city terminals with the freight belt line. At Glebe Island a grain elevator, with a storage capacity of 6,500,000 bush. is under construction. In order to keep switching movements clear of the harbor work a freight yard with capacity for 3,000 cars has been built at Rozelle, the junction of the lines to the docks and to the grain elevator.

# Mainly About Marine People.

Sir Montagu Allan, of Montreal, formerly of the Allan Line Steamship Co., who arrived from England early in August, spent the month with Lady Allan at St. Andrews, N.B.

Hon. C. C. Ballantyne, Minister of Marine, returned to Ottawa, Aug. 3, after having spent some time at St. Andrews, N.B., and left Ottawa, Aug. 12, on a trip to the Pacific coast.

W. A. Black, of Pickford & Black Ltd., steamship owners, etc., Halifax, N.S., has been appointed a governor of Dalhousie University.

Mrs. G. M. Bosworth, wife of the chairman, Canadian Pacific Ocean Services, Ltd., accompanied by her mother, Mrs. W. D. Birchall, and Mrs. J. B. Cole, all of Montreal, made a short trip recently to Belgium and France, after having christened the s.s. Empress of Canada at Glasgow.

H. B. Brenton, Purchasing Agent, Union Steamship Co. of British Columbia, was killed in a seaplane accident, in English Bay, Aug. 18. It is stated that there was an explosion on the machine before it fell from a height of 1,000 ft., and it was not ascertained whether he jumped, or fell from the machine to the water. E. H. Beazley, Managing Director of the company was also killed in an aeroplane accident on May 24.

G. J. Desbarats, C.M.G., Deputy Minister of the Naval Service, and Mrs. Desbarats, have returned to Ottawa from Europe, where Mr. Desbarats attended the Seamen's Conference at Genoa.

Capt. Patrick Duggan, a pioneer steamboat master on the Ottawa River, died at Ottawa, Aug. 8, aged 84, following a fall from a street car in Ottawa last December. He was engaged in navigation on the Ottawa River for 40 years, and after retiring from that occupation, was in the Customs Department, Ottawa, for 19 years.

Sir Frederick Orr Lewis, President, Canadian Vickers Ltd., shipbuilders, etc., Montreal, and Lady Lewis, sailed from England May 25 for Montreal.

S. S. Moncur, Passenger Manager, Anchor-Donaldson Line, Glasgow, Scotland, sailed from Montreal Aug. 21 on the s.s. Saturnia, for Glasgow, after a trip across Canada and the U.S.

J. P. Steedman, of Hamilton, Ont., who is largely interested in steamship matters, was fined $2,100 recently, in the police court, for neglecting to file a statement of his income for taxation purposes.

Major W. G. Swan, D.S.O., Chief Engineer, Vancouver Harbor Commission, is one of the first engineers to be granted certificates in civil engineering, under the recently enacted Engineering Profession Act of British Columbia, which provides that engineers practising in the province are given to July 1, 1921, to apply for membership in the Association of Professional Engineers, and to have their qualifications passed upon by a board of examiners.

E. E. Tedford, whose appointment as Marine Superintendent, Canadian Government Merchant Marine Ltd., Montreal, was announced in our last issue, was born at Yarmouth, N.S., May 21, 1870, and from Oct. 1889 to Aug. 1892 was second officer on ships operated by A. Stoneman, H. Cann & Sons, Yarmouth, N.S., and W. Thomson & Co., St. John, N.B.; Sept. 1892 to Nov. 1894, chief officer on ships operated by W. Thomson & Co., St. John, N.B.; Feb. 1895 to July 1896, chief officer on ships operated by W. H. Ross & Co., Liverpool, Eng.; Sept. 1896 to Oct. 1897, master, same company; Nov. 1897 to Apr. 1907, master, G. Windram & Co., Liverpool, Eng.; May 1907 to Apr. 1920, Marine Superintendent, Strath Steamship Co., Cardiff, Wales, and from 1917 superintendent construction of steamships for British Government, building at different yards in Ontario.

Frank Cameron Turner, who has been appointed Travelling Passenger Agent, Cunard Line, Anchor-Donaldson Line and Anchor Line, Montreal, was born at Riviere-du-Loup, Que., Apr. 22, 1892, and entered transportation service Oct. 15, 1919, since when he has been, to July 1911, stenographer and ticket clerk, G. T.R., Quebec, Que.; July 1911 to July 1912, Assistant ticket clerk, Canadian Northern Ry., Quebec, Que.; July 1912 to Apr. 1913, ticket clerk, G.T.R., Bonaventure station, Montreal; May to Dec. 1913, ticket agent, Canadian Northern Steamships, s.s. Royal Edward; Jan. 1914 to July 1915, ticket clerk, G.T.R., Montreal; Aug. 1915 to Aug. 1916, Soliciting Freight and Passenger Agent, Great Northern Ry. (U.S.), Montreal; Aug. 1916 to Feb. 1917, Travelling Passenger Agent, Canadian Northern Ry., Montreal; Feb. 1917 to Dec. 31, 1919, City Passenger Agent, same road, Montreal; Jan. 1 to Aug. 1, 1920, Travelling Passenger Agent, Robert Reford & Co., General Agents, Cunard, Anchor, and Anchor-Donald Lines, Montreal.

Jas. Weir, one of the founders of G. and J. Weir, Marine Engineers, Glasgow, Scotland, died there recently, aged 78. He retired from active participation in the business about 12 years ago, leaving the actual management to his sons, Lord Weir of Eastwood, and J. G. Weir, C.M.G., C.B.E.

J. R. Wren has been appointed superintendent of the survey and measurement of ships, vice R. H. Keay, resigned, and has also been appointed surveyor of accommodation for seamen, for the port of St. Andrews, N.B.

## No Embargo on United States Grain Shipments via Canadian Ports.

At a meeting of representatives of the Montreal Harbor Commissioners, the steamship, railway, warehousing and grain interests was held at the Montreal Harbor Commissioners' offices, Montreal, Aug. 17, W. G. Ross, President of the Commission, explained that it had been called to discuss a rumor that it was intended to place an embargo upon United States grain and other products passing through Canadian ports. He showed what facilities had been provided for handling the grain traffic in the coming rush season, and mentioned that whereas in 1914—the biggest year in the history of the port for grain movement—up to the end of July there had been shipped 12,649,000 bush., for the same period this year the shipment had been 25,002,000 bush. The port is capable at present of handling 900,000 bush. a day, and liners can take between 100,000 and 150,000 bush. per day from three elevators. The total movement through the port daily might thus be 900,000 bush., which meant that tramp tonnage to the extent of 750,000 bush. a day is required to carry away all this grain. In regard to preparations being made for handling the new grain crop, he said that the grain berth at shed 17 would be completed early in October, and that the commissioners were studying the problem of providing further accommodation of this nature.

It was stated that the C.P.R. is ready to take to Montreal 250 cars of grain a day, the equivalent of 400,000 bush., that the G.T.R. could take 150 to 175 cars a day, and in addition to this, that there would be the regular movement of grain by all-water route. In this latter respect, it was stated that the Canada Steamship Lines were to put on seven extra steamships this year over what it had last year to ply between Port Colborne and Montreal, which will greatly increase the volume of direct water-borne grain traffic.

Thos. Robb, Manager, Shipping Federation of Canada, gave information as to correspondence between the Federation and the Minister of Trade and Commerce, from which it appeared that a rumor had obtained circulation that an embargo would be placed, the result being owing to the uncertainty prevailing, that 6 ships had been diverted which were originally scheduled to load grain at Montreal. Grain brokers were also refusing to book grain through fear of a possible embargo.

A letter from the Minister of Trade and Commerce was read which stated that the Government had no intention of placing an embargo on the transit of U.S. products through Canadian ports.

We are officially advised from Ottawa that shippers of U.S. grain and other produce, in order to secure the passage of such through Canadian territory, must make their own arrangements with the carrying companies, and, in the case of wheat, with the elevator companies as well. The amount that it will be possible to carry through will depend on the shipping available at the port of embarkation, and the contract which can be made with the carrying and elevator companies. It must be borne in mind that there are only two months of open season of navigation during which grain of the Canadian west has to be moved in the largest volume possible. Regard must be had for the disposition of such transport on the part of carrying and elevating companies through whose hands such grain must pass to the seaboard.

**The Empress Navigation Co. Ltd.** has been incorporated under the Dominion Companies Act, with $100,000 authorized capital, and office at Ottawa, Ont., to build, own and operate steam and other ships, harbors, docks, elevators, warehouses, and railway and steamboat terminals, and to carry on business generally as carriers of passengers and freight on land and water, shipowners, shipbuilders, forwarders, etc. The incorporators are,—W. H. Dwyer, R. T. Holcomb, W. Cochrane, J. W. York, J. R. Osborne, and A. E. Provost, all of Ottawa. The Empress Navigation Co. recently purchased the s.s. Empress, formerly owned and operated by the Central Railway Co. of Canada, and also acquired the s.s. Victoria, owned formerly by the Victoria Navigation Co., Thurso, Que., details of both of which were given in our last issue.

## United States Shipping and Shipbuilding Notes.

New York, N.Y., is reported to have established a new high record for 1920 in point of ship entrances, 508 steamships engaged in foreign trade having arrived there during June.

The gross tonnage of U.S. shipping is reported to have increased since 1914 by more than 500% and now to stand at 16,049,000, which places the U.S. second only to the United Kingdom, credited with 18,330,000 tons.

The U.S. Shipping Board, on Aug. 18, opened hearings on the applications of 60 coastwise, gulf, and Great Lakes steamship lines for freight rate increases, corresponding with those granted under the Interstate Commerce Commission's jurisdiction.

On June 1 private U.S. shipyards were building, or were under contract to build, for private ship owners, 345 steel ships of 1,060,643 gross tons, compared with 348 steel ships of 1,391,341 gross tons on May 1, 1919. This is the first decline since July, 1919. These figures do not include government ships building or contracted for by the U.S. Shipping Board out of money voted by Congress.

The U.S. Bureau of Navigation reports 171 sailing, steam, gas and unrigged vessels of 214,840 gross tons as having been built in the U.S., and officially numbered, during July. The output of U.S. shipyards, of ships officially numbered by the Bureau, during the 12 months ended July 31, was 2,086 ships, of 3,554,352 gross tons, of which 684 were steel ocean steamers aggregating 3,146,257 gross tons.

According to its latest statistical compilation the U.S. Shipping Board owns and controls a total gross tonnage of ships amounting to 9,243,464. This comprises 1,493 ships, of which 1,388 are cargo, 28 cargo and passenger, 59 tank, 15 refrigerator, and 3 transport ships. About one-ninth of the total consists of wood, composite and concrete ships, including 271 wood and composite, of 997,-854 tons, and 4 concrete, of 13,500 tons.

The U.S. Shipping Board is reported to be getting together in the James River the wooden ships which were built by the U.S. Emergency Fleet Corporation, during the war, and it is said that there will be eventually 170 of them gathered there, and that they will be offered for sale to any interests who care to purchase them. During the war the U.S. Government built about 300 wooden steamships at an approximate cost of $250,000,000, but owing to delays in construction, few, if any, of them were available for war transportation purposes.

The shipyard at Hog Island, Pa., which was laid out by the U.S. Emergency Fleet Corporation during the war, is offered for sale to the highest bidder, tenders being invited up to Sept. 20. It is announced that 122 cargo steamships, totalling approximately 976,000 d.w. tons, were built and equipped at that yard. The plant has an area of 946 acres, a water frontage of two miles, with 82 miles of railway, a complete sewerage and drainage system, 50 shipbuilding ways, 7 piers and a number of buildings.

The U.S. Shipping Board issued the following notice Aug. 13:—"Since the action of the Interstate Commerce Commission in authorizing common carriers under its jurisdiction to increase transportation rates, the Shipping Board has received numerous requests from water carriers, subject to the Board's jurisdiction under the Shipping Act, 1916, and Merchant Marine Act, 1920, and operating on the Atlantic Coast, Gulf of Mexico and Great Lakes, to materially increase their present rates. The Board has also received from shippers and commercial organizations protests against such proposed advances, and in order that the reasonableness of the proposed advances may be determined, the Board desires to consolidate all such applications for advances in rates, and to have hearing thereon, beginning Aug. 18."

## President D. B. Hanna on Steamship Services.

Daily newspaper press dispatches credited D. B. Hanna, President Canadian National Rys. and Canadian Government Merchant Marine, with having stated, during his recent visit to the Pacific coast, that the C.N.R. would inaugurate a Vancouver-Victoria-Seattle steamship service, that passenger steamships would be put in operation between Vancouver and Oriental ports as soon as available, and that the company had been in negotiation for the purchase of a passenger fleet, involving an expenditure of approximately $85,000,000, but that it had fallen through.

We are advied that Mr. Hanna did not state that the C.N.R. intended to inaugurate a Vancouver - Victoria - Seattle steamship service, but did say that the C.N.R. service on the Pacific Coast would not be rounded out until such a steamship service was provided. The Grand Trunk Pacific Coast Steamship Co. is already operating a coast service, which is now under Canadian National Rys. management. Mr. Hanna did not say that passenger ships would be put in operation between Vancouver and Oriental ports, but he did say that on the completion of the Dominion Government's present steel cargo steamship shipbuilding programme, 12 steamships aggregating some 100,000 d.w. tons, would be operated out of Vancouver. Mr. Hanna did not say that the Canadian National Rys. had been negotiating for the purchase of a fleet of passenger steamships, involving an expenditure of approximately $85,000,000, or any other amount, no such negotiations having taken place.

## The Position of Canadian Shipping.

Shipping facilities in Canadian ports are in course of being greatly improved. As regards Europe, our eastern ports are in touch with more points in the United Kingdom than ever before, with several in Norway, with Gotenburg, Malmo and Norrkoping in Sweden, with a free port at Danzig, with Antwerp and Rotterdam in Holland, Passage in Spain, and Havre, Bordeaux and St. Nazaire in France, while for the first time there will be a direct line from Montreal to Mediterranean ports, such as Gibraltar, Palermo, Naples and Genoa. This line may be extended to take in Odessa and other ports in the Black Sea. There have been for years regular sailings between Canada, British West Indies and British Guiana, and latterly Canadian Government Merchant Marine ships have also been running to Cuba, Jamaica, Barbados, Trinidad and British Guiana.

A new field of trade possibilities has been opened up by a service which has been instituted from Montreal to the west coast of Africa. A new line from Montreal to Australia, and many new ships on the Vancouver-Australia-New Zealand route have been reported. More ships are to be placed on the Vancouver-Japan-China service. From the east and west, Canada is now in touch with her markets. Direct shipping facilities of this nature are prerequisite to the establishment of our foreign trade on any satisfactory basis. The lack of them involves, at the best, higher transportation charges, and in many cases means that our imports and exports pass to their destination through the hands of a foreign middleman. During the last six months the usual course of trade has been interrupted, and much United States freight has passed through Canadian ports on account of the severe traffic congestion existing in the U.S.—Royal Bank of Canada Monthly Letter.

## Shipbuilding Depression in Japan.

Attacks on Japanese interests overseas, combined with internal depression, have influenced the great shipping companies to modify or to abandon the ambitious building programmes they decided on at the height of the shipping boom. It is reported that the Nippon Yusen Kaisha and the Osaka Shosen Kaisha have cancelled their decision to build an aggregate of 1,000,000 tons, and this will seriously affect the already attenuated war boom in the shipyards. The outlook in the shipbuilding industry is thus most discouraging. The largest yards are engaged in warship construction, and are showing evidence of the sobering effects of financial depression. A member of the House of Peers ventured recently to propose that Japan should economize by purchasing warships abroad. The fact that such a proposal has been seriously broached to a patriotic assembly is eloquent of changing times.

**Employment of Children on Ships.**—The International Seamen's Conference at Genoa, Italy, has decided that no children under 14 years old shall be permitted to work on seagoing ships, unless on ships on which only members of the same family are employed, and in case of children working on training ships under the supervision of public authorities, these latter, it being decided, being actually pupils and there being no intention of obtaining profit from their work.

**Seamen's Working Hours, Etc.**—Brussels, Belgium, press dispatch, Aug. 13.—The International Seamen's Federation has adopted resolutions for immediate steps for the enforcement of a demand for a 48-hour maximum week at sea, a 44-hour week on port duty, and for fixed international seaman's wage. An amendment urges the calling of a conference of ship owners and seamen before the precipitation of a strike.

**Freight Rates on Great Lakes.** — In commenting on the general condition in lake freight traffic, L. A. W. Doherty, General Traffic Manager, Canada Steamship Lines Ltd., is reported to have said that there will probably be an increase in freight rates on the Great Lakes in the autumn, but that no changes will be made in passenger rates.

**B. W. B. Navigation Co. Ltd.** has been incorporated under the British Columbia Companies Act, with $1,000,000 authorized capital, and office at Vancouver, to build, own and operate steam and other vessels of every description, wharves, piers, drydocks, warehouses, etc.

## Atlantic and Pacific Ocean.

The Canadian Pacific Ocean Services' s.s. Minnedosa completed her run from Liverpool, Eng., to Father Point, recently, in 6 days and 9 hours. She had favorable weather all the way and came through Belle Isle Strait.

Five steamships, the Tunisian, Corsican, Canada, Saturnia and Megantic, arrived at Montreal during the week end Aug. 14-16, bringing approximately 5,000 passengers and making a new record for that port.

The Elder Dempster & Co.'s s.s. Kaduna arrived at Simonstown, South Africa, Aug. 15, from Montreal with fire in no. 3 hold. It was extinguished shortly after her arrival, but it is stated that the cargo is considerably damaged.

Furness Withy & Co. are operating two steamships on a service between Liverpool, Eng., St. John's, Nfld., and Sydney, N.S. It is said to be the first cargo transatlantic steamship service making Sydney its Canadian terminal port.

A long distance wireless telephone station is reported to be under construction at Devizes, Wiltshire, Eng. It is said that conversation will be maintained with ships on the Atlantic to a distance of over 1,000 miles, and that the station will be kept in touch with ships at least two-thirds of the way across the ocean.

It is announced that U.S. mail for the Orient is being transported across the Pacific Ocean by Canadian Pacific Ocean Services' steamships and that a probable feature of the arrangement in the future will be the conveyance of mail from Seattle, Wash, to Vancouver, B.C., by aeroplane, thus saving nearly a day on the trip between those points.

The Canadian Robert Dollar Steamship Co., Vancouver, B.C., is reported to have bought an 11,500 ton steamship named Parisian, in Great Britain, recently, and it is stated that she will sail from London, Eng., about the end of August for New York, in ballast, and that on arrival she will be placed on the Canadian register under the name of Esther Dollar.

Canadian Pacific Ocean Services' s.s. Tunisian and Manchester Liners' s.s. Manchester Division, collided in the St. Lawrence near Quebec, Aug. 8, considerable damage being done to the hulls of both ships, which, however, both made port in safety without assistance. An enquiry into the casualty was opened before Capt. L. A. Demers, Dominion Wreck Commissioner at Montreal, Aug. 19.

The Anchor-Donaldson Line's steamships Athenia and Letitia are expected to be completed by the Fairfield Shipbuilding & Engineering Co., Glasgow, Scotland, shortly. They will be operated between Glasgow and Montreal, and will be 520 ft. long overall, with 66 ft. beam, and with accommodation for 2,000 passengers. They are designed for a speed of 15 to 16 knots an hour using fuel oil. We are advised that they are not expected to be on the route until next summer.

Canadian Pacific Ocean Services' s.s. Empress of Britain, which has been overhauled and reconditioned after her war service, details of which work were given in our last issue, underwent a series of trials early in August, in the Irish Sea, when she developed a speed of 19 knots an hour, or one knot better than when she was burning coal. She is scheduled to sail from Liverpool, Sept. 1, for Quebec, and from Quebec Sept. 15.

Canadian Pacific Ocean Services Ltd. has arranged with the Japan and China Government railways for the sale of overland tickets in connection with its ocean tickets, between Yokohama and Shanghai, in either direction, to enable passengers to visit the principal points of business, historical and scenic interest, in Japan, Korea and China. Tickets are limited to 90 days, allow certain stopovers, and include express train charges and transit duty.

Canada Steamship Lines Ltd. has been appointed Canadian passenger and freight agents for the U.S. Mail Steamship Co., which has been organized recently to take over from the U.S. government, for operation, a number of former German passenger and freight steamships. It is stated that when the company is completely organized it will have in operation over 100 steamships, which will be operated to London and Plymouth, Eng., Havre and Cherbourg, France, to Danzig and on other routes not yet decided upon.

The Cunard Line announces that two additional steamships building at Birkenhead and Wallsend on Tyne, Eng., named respectively Samaria and Laconia, will be launched shortly. They are to be 625 ft. long over all, with 74 ft. beam, 30 ft. draft and 27,000 tons displacement. They will be equipped with geared turbines of 12,500 h.p., for an average sea speed of 16 knots, the boilers being fired with fuel oil. They will be of the three class type, with accommodation for 343 first class, 347 second class and 1,698 third class passengers, and 315 officers and crew.

The Cunard Co. has, according to a Montreal press report of Aug. 18, sold the s.s. Royal George to Furness Withy & Co., for operation between Liverpool, Eng., and Boston, Mass. The s.s. Royal George was built at Glasgow, Scotland, in 1908, when she was named Cairo, for the Egyptian Mail Steamship Co.'s Marseilles-Mediterranean service. She was bought in 1909 by Canadian Northern Steamships Ltd., and after being remodelled to make her suitable for Atlantic service, was operated between Canada and Avonmouth, Eng. On the Canadian Northern deciding to relinquish the ocean passenger steamship business, the ship was sold, with others belonging to the company, to the Cunard Co. The report of the sale is unconfirmed, according to our latest advice on Aug. 25.

## Maritime Provinces and Newfoundland.

S. C. MacMillan has been appointed measuring surveyor of shipping, Isaac's Harbor, N.S.

J. B. Hachey and A. Gatain have been appointed pilot commissioners for the pilotage district of Bathurst, N.B., vice J. J. S. Hachey and H. White, resigned.

The certificates of registration, issued under the Nova Scotia Companies Act, to Stella Maris Steamship Co. Ltd., and the Coastal Dredging & Construction Co. Ltd., hav been revoked.

The Dominion Public Works Department will receive tenders, to Sept. 14, for repairs to the breakwater at Port Lorne, N.S., and for an addition to the east breakwater at Port Maitland, N.S.

The Dominion Public Works Department has established a new harbor headline at Halifax, N.S., beyond which wharves, piers, breakwaters, and similar structures are not permitted to be built.

Tenders were received by the Naval Store Officer, H.M.C. Dockyard, Halifax, N.S., at the end of August, for the purchase of a number of small motor, steam and sailing boats at the dockyard and at Sydney, N.S.

The s.s. Martara, owned by G. W. Jones, New York, ran ashore near Lunenburg, N.S., Aug. 13, and is reported a total loss, having broken her back over the ledge. She was bound, in ballast, from Philadelphia to Botwood, Nfld.

The suction dredge Tornado, which was towed from Norfolk, Va., for use in the Courtenay Bay development works, arrived at St. John, N.B., Aug. 4, where she will be operated by the St. John Drydock & Shipbuilding Co., contractors for the work. The Tornado is owned in Toronto, and was built there by Polson Iron Works.

The Nova Scotia Shipping Co.'s s.s. steam tug Diamond, while bound from Parrsboro to Economy, N.S., July 30, sprang a leak when off Five Islands, and sank. She was built at Pictou, N.S., in 1894, and was screw driven by engine of 10 h.p. Her dimensions are,—length 43.3 ft., breadth 12.4 ft., depth 5.6 ft.; tonnage 23 gross, 15 net.

The Minister of Customs and Inland Revenue is reported to have stated at St. John, N.B., Aug. 16, that the Marine Department has an appropriation of $25,000 for the installation of a radiotelegraph station in St. John harbor, to assist ships in negotiating the entrance to the harbor in safety during storms and dull weather.

The International Mercantile Marine Co. has presented Capt. C. F. Martin, superintendent of tow boats, G. S. Campbell & Co., and Capt. T. O. Ormiston, master of the tug S. F. Roebling, of Halifax, N.S., with an engraved gold watch each, as a memento of their services in rescuing the crew of the Leyland Line s.s. Bohemian, when she stranded on Sambro ledges, near Halifax, on Mar. 2.

The Dominion Coal Co.'s s.s. Wabana,

## Ships Added to and Deducted From the Canadian Register During May, 1920.

| | Steam. | | | Sailing. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| Added. | No. | Gross. | Registered. | No. | Gross. | Reg'red |
| Built in Canada | 23 | 11,457 | 6,852 | 10 | 1,590 | 1,384 |
| Purchased from foreigners | 5 | 1,115 | 651 | 2 | 909 | 846 |
| Transferred from United Kingdom | 1 | 1,943 | 785 | .... | ..... | ..... |
| New registers | 4 | 102 | 96 | .... | ..... | ..... |
| Added without re-registry | .... | 26 | 17 | .... | ..... | ..... |
| Totals | 33 | 14,643 | 8,401 | 12 | 2,499 | 2,230 |
| Deducted. | | | | | | |
| Wrecked or otherwise lost | 3 | 61 | 50 | 2 | 45 | 45 |
| Broken up or unfit for use | 4 | 444 | 302 | 5 | 77 | 77 |
| Sold to foreigners | 4 | 1,585 | 1,301 | .... | ..... | ..... |
| New registers | .... | ..... | ..... | 5 | 164 | 164 |
| Other ships | 3 | 226 | 97 | .... | ..... | ..... |
| Added without re-registry | .... | ..... | ..... | .... | ..... | 56 |
| Totals | 14 | 2,316 | 1,750 | 12 | 286 | 342 |

while bound from Sydney, N.S., to Bell Island, Nfld., in ballast, to load ore, during July, ran on Cape Freels rock near Cape Pine, Nfld. She refloated at high tide and proceeded to St. John's under her own steam, where she was placed in the drydock for overhaul and repairs to her fore foot and stern. A number of plates were also damaged below the water line.

The schooner Netherton, owned in Dennisville, Me., was abandoned at sea in a burning condition, early in August. She was built at St. John, N.B., in 1918, and named Dornfontein. While on her maiden voyage she was captured by a German raider in the Bay of Fundy and set on fire, and was afterwards rebuilt and renamed. She was a four master, of 666 net tons, and cost about $100,000.

The Royal Mail Steam Packet Co.'s s.s. Cobequid, which was wrecked on Trinity Ledge, some time ago, is being salved by the wrecking steamship Coast Guard. It was expected that the material would be cleaned up before the end of August, after which the wrecking steamship would proceed to Beatson's Rock, near Briar Island, to deal with the s.s. Corinthian, which stranded, and afterwards sank, there, early in 1919.

The British s.s. Willdomino struck an uncharted rock off the eastern shore near Canso, N.S., towards the end of July, and tore a large hole in her bow. The C.G.S. Lady Laurier was sent to her assistance and towed her into Halifax. The s.s. Willdomino, which was bound from St. Michaels, via Halifax, for New York, was formerly named War Convoy, and was built by J. Coughlan & Sons, Vancouver, B.C., for the British Government, under order from the Imperial Munitions Board.

The U.S. Shipping Board's wooden steamship Quinneseco was taken into Halifax, N.S., at the end of July, considerably damaged by fire. She sailed from Newport News, Va., July 4, for Sydney, N.S., where she took on a cargo of coal, and sailed for Aarhus, Denmark, via Hull, Eng., July 17. When about 700 miles east of Halifax, fire was discovered in her port bunker. Considerable damage was done to her planking before the fire was subdued. She was taken to port under her own steam, and by her own crew.

The Minister of Customs and Inland Revenue is reported to have stated at St. John, N.B., Aug. 11, that the filling of the west channel, between Negro Point breakwater and Partridge Island, to provide protection for docks 15 and 16, would be commenced immediately. It is also stated that a floating grain elevator will be placed in the harbor next winter, and it is possible that one of the floating elevators of 6,000 bush. an hour capacity, owned by the Montreal Harbor Commissioners, will be bought or hired for use at St. John.

The Naval Service Department will receive tenders to Sept. 9, for the purchase of the steamship Thirty-three as she now lies at Halifax. N.S. She was built at North Shields, Eng., in 1902, and is screw driven by engine of 21 h.p., at an approximate speed of 9 knots an hour. The hull is of steel, with the following dimensions,—length 80 ft., breadth 18.1 ft., depth 8.3 ft., tonnage 79 gross, 33 net.

Job Bros. & Co., St. John's, Nfld., are offering for sale 2 three-masted wooden schooners built with hardwood frames, and with stem, stern post, rudder stock and keel all with galvanized fastenings below the waterline. They are designed on lines to make fast sailers and are guaranteed to pass American Bureau and Bureau Veritas A1 classifications. They have the following dimensions,—length of keel 120 ft., registered length 128 ft., beam 28 ft., depth shoalest place 10 ft. 8 in., depth deepest 12 ft. 6 in., tonnage 255 gross, 220 net, 400 d.w.

## Province of Quebec Marine.

The s.s. Perreault, which was launched at Roberval, early in August, has been built under subsidies from the Quebec Government and will be operated on Lake St. John.

The Dominion Public Works Department has awarded a contract for repairs to wharf at St. Francois Sud, Isle of Orleans, to S. Ratte, St. Anne de Beaupre, at schedule of prices.

The wrecked s.s. Germanicus, which ran aground at Bic Island, last autumn, is reported to have been examined early in August by C.P.R. officials, having in view the possibility of salving her. It is said that the cost would be approximately $400,000.

The Keystone Transportation Co.'s s.s. Keybell struck bottom near the entrance to the Lachine canal, Aug. 20, and sank at the bow. It has been found that the water at the point where the casualty occurred is only 14 ft. deep. The spot has been marked and a notice to ships drawing over 13 ft. 10 in. has been issued.

The Marine Department's s.s. Speedy II is reported to have been sold to T. M. Kirkwood, Montreal. She was built at Leith, Scotland, in 1896, as a private yacht, for Barney Barnato, of the DeBeers Co. of South Africa, and was acquired by the Dominion Government after his death, and operated under the Marine Department. She is screw driven by engine of 88 h.p., and has the following dimensions,—length 115 ft., breadth 20½ ft., depth 10½ ft., tonnage 252 gross, 145 net.

The s.s. C. W. Chamberlain is reported to have been sold to the Sincennes McNaughton Line Ltd., Montreal. She was built of oak, at Walkerville, Ont., in 1881, when she was named C. N. Pratt, and was rebuilt in 1890. Her dimensions are,—length 127 ft., breadth 26½ ft., depth 9 ft. 7 in.; tonnage, 385 gross, 243 net. She is equipped with fore and aft compound engine, with cylinders 18 and 32 in. diar. by 26 in. stroke, 280 i.h.p. at 100 r.p.m., and supplied with steam by a Scotch boiler 10 ft. diar. by 11 ft. long, at 100 lb. She was at one time owned by the Midland Transportation Co., Midland, Ont., and later by James Swift & Co., Kingston Ont. She was damaged by fire at Cornwall, early this year, since when she was reported to have been owned by Capt. H. Martin, Kingston.

The Sincennes McNaughton Line Ltd., Montreal, has bought the s.s. New Island Wanderer, from Canada Steamship Lines Ltd., and has transferred her from the U.S. register to the Canadian register, under the name of Jeannette R. She was built at Buffalo, N.Y., in 1888, and registered at Alexandria Bay, N.Y. She is of the hurricane deck type, with oak hull, of the following dimensions,—length 116 ft., breadth 21 ft., depth 7 ft.; tonnage, 123 gross, 84 net. She is equipped with fore and aft compound engine, with cylinders 15 and 28 in. diar. by 24 in. stroke, 165 i.h.p. at 100 r.p.m., and is supplied with steam by a fire box boiler 7½ ft. diar. by 10½ ft. long at 135 lb. She was owned originally by the St. Lawrence River Steamboat Co., Kingston, Ont., and was taken over by Canada Steamship Lines Ltd. on its incorporation.

## Ontario and the Great Lakes.

P. W. Lyon, Toronto, has been appointed Inspector of hulls, steamboat equipment, boilers and machinery.

The Gulf Navigation Co.'s s.s. Gonzaba, which was built by the Dominion Shipbuilding Co., Toronto, for service in the Gulf of Mexico, sailed from Toronto at the end of July with a cargo of 60 lb. rails for Sagua la Grand, Cuba. This is said to be the first direct ocean cargo shipped from Toronto.

The Dominion Public Works Department will receive tenders as follows:—To Sept. 10, for repairs to superstructure of western breakwater, including headblock, at Port Colborne, Ont. To Sept. 14, for reconstruction of 466 ft. of superstructure of east piers of eastern channel, Toronto harbor.

The Minister of Railways and Canals is reported to have stated, at St. Catharines, Ont., Aug. 23, that the construction of the Welland Ship Canal, which was held up owing to the war, will be pushed to completion at the earliest possible moment. While in the neighborhood he went over the route with some of the engineering staff.

The U.S. Lake Survey reports the stages of the Great Lakes for July, in

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during July, 1920:

| Articles | | Canadian Canal | U.S. Canal | Total |
|---|---|---|---|---|
| Lumber | Eastbound | M. ft. B. M. 4,044 | 29,053 | 33,097 |
| Flour | " | Barrels 393,590 | 777,660 | 1,171,250 |
| Wheat | " | Bushels 1,566,404 | 6,272,066 | 7,838,470 |
| Grain, other than wheat | " | Bushels 707,487 | 2,425,932 | 3,133,419 |
| Copper | " | Short tons 2,791 | 5,195 | 7,986 |
| Iron Ore | " | Short tons 79,768 | 9,155,318 | 9,235,086 |
| Pig Iron | " | Short tons 95 | ..... | 95 |
| Stone | " | Short tons 1,050 | 3,200 | 4,250 |
| General Merchandise | " | Short tons 3,125 | 6,046 | 9,171 |
| Passengers | " | Number 6,951 | 3,964 | 10,915 |
| Coal, soft | Westbound | Short tons 14,975 | 1,279,187 | 1,294,162 |
| Coal, hard | " | Short tons 5,600 | 294,500 | 300,150 |
| Iron Ore | " | Short tons ..... | 8,683 | 8,683 |
| Manufactured Iron and Steel | " | Short tons 4,369 | 12,902 | 17,271 |
| Salt | " | Short tons 1,049 | 13,464 | 14,513 |
| Oil | " | Short tons ..... | 52,636 | 52,636 |
| Stone | " | Short tons 400 | 56,973 | 57,373 |
| General Merchandise | " | Short tons 38,406 | 44,784 | 83,190 |
| Passengers | " | Number 6,699 | 4,226 | 10,925 |
| **Summary** | | | | |
| Vessel Passages | | Number 630 | 2,282 | 2,912 |
| Registered Tonnage | | Net 757,587 | 8,030,832 | 8,788,419 |
| Freight—Eastbound | | Short tons 201,570 | 9,548,131 | 9,749,701 |
| Westbound | | Short tons 64,799 | 1,763,179 | 1,827,978 |
| Total Freight | | Short tons 266,369 | 11,311,310 | 11,577,679 |

feet above mean sea level, as follows:—Superior, 602.94; Michigan and Huron, 581.03; St. Clair, 575.63; Erie, 572.63; Ontario, 245.70. Compared with the average July levels for the past 10 years, Superior was 0.50 ft. above; Michigan and Huron, 0.11 ft. above; Erie, 0.19 ft. below, and Ontario, 1.15 ft. below.

The Northern Michigan Transit Co. is reported to have been organized, with office at Detroit, Mich., to take over and operate the properties of Goodrich Transit Co., Wisconsin Steamship Co., Milwaukee Steamship Co., and the Chicago, Racine & Milwaukee Line. The Goodrich Transit Co. owns 9 steamships and a tug; the Wisconsin Steamship Co. one steamship; the Milwaukee Steamship Co. one steamship, and the Chicago, Racine & Milwaukee Line one steamship.

Canada Steamship Lines' s.s. T. P. Phelan, while downbound, with 66,400 bush. of grain, grounded on the Iroquois shoal, in the River St. Lawrence, near Brockville, Aug. 19, and was reported to have been badly damaged. The ship and cargo were valued at $350,000, which is covered by insurance. The grain was lightered out on Aug. 26, after which she was to be pumped out, when the amount of the damage would be ascertained.

The Montreal Transportation Co.'s barge Quebec, now owned by Canada Steamship Lines Ltd., and which was sunk following the explosion at the Dominion Government grain elevator at Port Colborne, Aug. 9, 1919, has been raised and taken to Toronto, where she has been placed in the drydock for examination and repairs. At the time of the disaster 11 persons on board were killed and 16 injured, while the cargo of grain, valued at $100,000, was a total loss.

A Port Arthur press report of Aug. 17 stated that the Northern Navigation Co. was about to purchase the s.s. North Land, a passenger ship built in Cleveland, Ohio, in 1895, and that she will be refitted,. and placed in operation on the Great Lakes in 1921. The s.s. North Land, which was formerly operated by the Northern Steamship Co., Buffalo, N. Y., between Buffalo, Duluth and Chicago, was cut in two at Buffalo in the autumn of 1919, and reported sold to the Davie Shipbuilding & Repairing Co., Lauzon, Que. The two sections arrived in the St. Lawrence River eventually, after some trouble, one section being placed at Sorel, and the other at Coteau Landing, Que., and we were advised that the ship had been retransferred to the Northern Steamship Co. The last information we were able to obtain as to her movements was on May 10, when we were advised that the stern section had been moved from Coteau Landing to Montreal, pending the receipt of instructions from the Northern Steamship Co.'s directors as to whether she was to be sold as she was, or the two sections joined together again.

Since the foregoing was put in type, we have been advised that the North Land is trading between Canada and France, and that it is believed there is not much possibility of her returning to the Great Lakes.

## Manitoba, Saskatchewan and Alberta.

Dredging in the Red River was commenced about the end of July, the immediate work undertaken being deepening around the wharves within the Winnipeg city limits. This work has been undertaken at the request of the Winnipeg and St. Boniface Harbor Commission. No dredging has been done there since 1915, and numerous complaints had been made by the shipping interests in the city.

## British Columbia and Pacific Coast.

The s.s. Thomas Crosby, registered at Vancouver, B.C., which has been bought by the Naval Service Department from the Methodist Church Inc., Toronto, has had its name changed to Marfish.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince George was replaced in service Aug. 1, after being overhauled at Prince Rupert, subsequent to running on the rocks in Seymour Narrows during July.

In connection with the death of E. H. Beazley, Manager, Union Steamship Co. of British Columbia, in an aeroplane accident, it is proposed to endow a ward for sick mariners in the local hospital, as a memorial.

During the first half of this year there were shipped from British Columbia 29,000,000 ft. of lumber, and there are orders on hand for approximately 36,000,000 ft., for South Africa, South America, Australia, New Zealand and the United Kingdom.

The Canadian Robert Dollar Co.'s s.s. M.S. Dollar sailed from Vancouver, B.C., recently, with what is stated to be the largest general cargo on one ship from the port for the Orient. The total weight of cargo was 14,000 tons, of which about 6,000 tons were lumber.

The Vancouver Harbor Commissioners have deposited with the Public Works Department at Ottawa a description of the site and plans of the Ballantyne pier, to be built on the south shore of Burrard Inlet, on a water lot east of the west boundary on Heatley Ave. produced northerly.

The C.P.R. is reported to have placed a contract with Wallace Shipyards Ltd., North Vancouver, B.C., for the construction of a steamship to replace the s.s. Princess Sophia, which was wrecked and lost with all her passengers and crew, on Vanderbilt Reef in the Portland Canal, at the end of 1918. It is stated that the contract price is about $1,500,000, that she will be 325 ft. long, with a speed of 17 knots, and that she will be placed in the Alaska service, for which she is to be specially built.

D. C. Coleman, Vice President, Western Lines, C.P.R., is reported to have stated in Vancouver recently that J. W. Troup, Manager, British Columbia Coast Service, C.P.R., Victoria, would make an announcement shortly regarding the building of a steamship to replace the s.s. Princess Sophia, which was lost in the Portland Canal at the end of 1918. If it is decided to build a steamship, she will be larger than the Princess Sophia, tion, suitable for Alaska service. Tenders have been received for the building, two from British Columbia builders, and a third was expected, when a decision would be arrived at.

**The Lord Beatty Ltd.** has been incorporated under the New Brunswick Companies Act, with $25,000 authorized capital and office at St. John, to purchase the s.s. Lord Beatty and to carry on a general towing, salving and wrecking business. The incorporators are: T. Nagle, C. M. Kernson, and T. A. Linton, St. John, N.B.

## New Steamship for Toronto-Niagara River Line.

J. W. Norcross, President, Canada Steamship Lines Ltd. during an interview gave out the following statement in Toronto Aug. 25:—"The plans and specifications for the new steamship for the Toronto-Niagara-River line are completed, and the steel had been ordered. It is the company's intention to have the construction commenced at once and the ship ready for the summer season of 1921. This is to be the first of the new series of passenger ships that the Canada Steamship Lines contemplates building, and will embody all the best points of modern construction. The principal dimensions will be 410 ft. long, by a width of 70 ft. over the guards, and her carrying capacity will be 4,000 persons, which is twice the present carrying capacity of the s.s. Cayuga, on the same run. The entire construction of the ship will be of steel, and no wood will be used, the interior finish being of pressed steel, and the decorations after the most improved style. There will be four decks, and also a very large restaurant, and special attention will be paid to the allotment of dancing space, so that ample room will be provided for all. There will be a spacious moving picture theatre, and continuous entertainments will be put on. There will also be a children's playground, with competent attendants in charge, which will leave the mothers free from the responsibility of watching their little ones. The ship will be propelled by geared turbine engines of the latest design, and will develop a shaft horsepower of over 6,000, enabling the development of a speed of 22 knots an hour. Special attention has been paid to all details and the arrangements for the accommodation of the public. The deck space, designs and construction will be not only superior to, but far in advance of, anything that is now afloat, or under construction, for passenger carrying on fresh water."

The plans have been prepared by A. Angstrom, naval architect, Toronto. No announcement has been made as to where the ship will be built, but it will almost certainly be by one of the shipbuilding companies which are being merged into the British Empire Steel Corporation, probably the Collingwood Shipbuilding Co., Collingwood, Ont. On account of Welland Canal limitations, the ship, if built in Collingwood, would have to be brought through the canal in sections, probably on their sides, and even that might not be practicable, and it is more likely that the fabricating will be done in Collingwood and the assembling, etc., in Toronto.

**North American Steamship Co. Ltd.** has been incorporated under the Dominion Companies Act, with $750,000 authorized capital and office at Toronto, to operate freight and passenger steamships, and to carry on general navigation, transportation and other allied businesses. The incorporators are: M. L. Gordon, J. S. Duggan, J. W. Bicknell, T. S. H. Giles and M. H. MacGregor, Toronto.

**European Steamship Agencies (Toronto) Ltd.** has been incorporated under the Ontario Companies Act, with $40,000 authorized capital and office at Toronto, to carry on business as insurance brokers, steamship and transportation agents, etc. The provisional directors are H. and R. Goad, and S. and R. Peiman.

## Wreck Commissioner's Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following marine casualties:—

**Margaret Hackett-Brookdale Collision.**

Held at Montreal, July 30, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and C. J. Stuart, as nautical assessors, into the cause of the collision of the George Hall Coal Co.'s tug Margaret Hackett, and barge Gladys H. in tow, with the Canada Steamship Lines' barge Brookdale, in tow of the same company's s.s. Maplehurst, near buoy 25, Lake St. Peter, July 16. The court found that the mate, O. Portelance, of the tug Margaret Hackett, was solely responsible for the casualty, and though he is not required to carry a certificate as mate of a tug, he was judged unfit to hold the certificate he has, as master of a tug, and it was cancelled. The master of the tug Margaret Hackett, W. Allison, was exonerated from all blame, but he was criticized for sailing the tug until she sank in deep water, instead of selecting a shallow spot. The barges Brookdale and Gladys H. were exonerated from blame, but the officers were advised to keep a better lookout in future. The s.s. Maplehurst was also exonerated, but the master, K. LaRush, was found in default for not carrying properly constructed lights in accordance with article 3 of the International Rules of the Road, and was severely reprimanded. He was also censured for not making more enquiries into the condition of his barge and the tug Margaret Hackett, as had there been any loss of life, the court would have held him criminally responsible. The pilot, J. S. Raymond, was cautioned that it is essential for him, and all pilots, to ascertain for themselves the condition of the navigational lights of ships they are piloting, also of the tow, if any. The mate of the s.s. Maplehurst was cautioned to keep his watch on the bridge, and to bear in mind constantly his responsibilities as an officer. The court recommended to all concerned, a stricter supervision and examination of aids to navigation and their equipment.

**Appeal re Stranding and Loss of s.s. Chelston.**

In connection with the stranding of the British s.s. Chelston, at St. Paul's Island, in the Gulf of St. Lawrence, Oct. 9, 1919, the master of the ship, Capt. A. M. Fotheringhame appealed, in the Admiralty Division of the English High Court, against the decision of the Dominion Wreck Commissioner, concurred in by the two nautical assessors, by which he was held to have erred gravely in judgment, and his certificate suspended for three months. The judgment on the appeal stated that questions of principle were raised which might have far reaching consequences, and in particular that there was a challenge of the powers of the Canadian Parliament to make amendments of the Merchants Shipping Act, as done by the Canada Shipping Act of 1908, so far as they affect certificates of British masters. There was also the question as to whether the rules made by the Dominion Marine Department, which governed procedure in Canada under the Merchants Shipping Act, provided sufficiently for the protection of mariners implicated by charges. The most substantial ground of the appeal was that the master had no notice of the charges on which his certificate was dealt with. There was a further point that the Canadian procedure did not satisfy the requirements of the British law, and was ineffective to sustain a finding that prejudiced a master's certificate. In the court's view the rules made by the Lord Chancellor were rules governing procedure in British wreck commissioners' courts, and the rights of British shipmasters in Canadian courts were to be ascertained by considering whether the provisions of the Canadian Parliament diminished in any way the safeguards of the masters' interests, which were afforded by British legislation. In the court's view, they did not, but on the contrary Canadian legislation amply protected the rights of British shipmasters. The case was merely the efficacy of the procedure of the Canadian statutes to give the protection. Sec. 36 of the Canada Shipping Amendment Act 1908 provides that a certificate shall not be cancelled or suspended unless the holder of such certificate has an opportunity of making his defence. No charge was presented against the master, and the first notice he had of such a charge was the finding of the court that he was guilty. Therefore the appeal must be allowed, and the master's certificate restored, free from any suspension.

## Canadian Notices to Mariners.

The Marine Department has issued the following:—

**New Brunswick.**—The fixed red light on the north side of the gully at South Tracadie, in the Gulf of St. Lawrence, will be discontinued about Sept. 1.

The Kouchibougouac bar range lights in Kouchibougouac Bay, Northumberland Strait, have been changed in position, as follows: The front range light on the east side of south beach has been moved about 212 ft. north of its old position, and the back light about 32 ft. north of its old position and 365 ft. from the front light.

**Nova Scotia.**—The Public Works Department has dredged a channel 750 x 35 ft. with a least depth of 6 ft., from the main channel to the fishing boat anchorage in Fourchu Harbor, Cape Breton Island.

During the past season the channel in the East River, from Chambers point to New Glasgow, was dredged by the Public Works Department, to a least depth of 10 ft. The dredged channel, following the course of the river, is 38 ft. wide, with a turning basin in front of the government wharf at New Glasgow, 400 x 100 ft.

The light ship maintained on Lurcher shoal, off Yarmouth, will, without further notice, be removed from her station, about Sept. 15, to undergo repairs, pending which, her station will be marked by a gas buoy, painted red and showing an occulting white light. The ship will be off her station about four weeks, and further notice will be given when repairs have been completed and the ship replaced in position.

Back range light has been established at Grand Etang, on the west coast of Cape Breton Island, on the breakwater, 367 ft. from the existing light on the outer end of the breakwater. The light, which is fixed red, is shown from a locomotive headlight lantern at an elevation of 34 ft., with a visibility of 6 miles, and is mounted on a white pole with a white shed at base, 30 ft. high.

**Quebec.**—The Public Works Department has dredged the basin on the east side of the Government wharf at Murray Bay, to a depth of 15 ft., 100 ft. wide in line with the front face of the wharf, and extended shoreward 340 ft., 72 ft. wide at the inner end.

**Ontario.**—A red wooden spar buoy has been established on the north side of the St. Marys River channel at Sault Ste. Marie, about 1,100 ft. eastward of government wharf, in a depth of 21 ft.

The fog bell and auxiliary hand fog horn, about 300 ft. west from the east extreme of Davieaux Island, on the south side of Michipicoten Island, Lake Superior, will be discontinued without further notice.

The red gas buoy 64F, in 18 ft. of water, one mile east of South Lancaster, in Lake St. Francis, River St. Lawrence, will be discontinued without further notice.

L'Orignal wharf having been destroyed by fire, the fixed white electric light, on a shelf on the gable end of a brown wooden freight shed, on the outer end of the wharf, will be discontinued until further notice.

A red wooden spar buoy has been established on edge of shoal, about 55 ft. east from east side of government wharf, Brockville.

**Newfoundland.** — The diaphone fog alarm, which is operated by air, compressed by an oil engine, and which gives three blasts of 1¼ sec. every 90 sec., at Bonavista Cape, Bonavista Bay, on the east coast, has been moved to the mainland, on the south side of the lighthouse.

On the summit of Little Denier in Bonavista Bay, an occulting white light has been replaced by a flashing white light, giving a flash of 3 seconds every 30 seconds.

A flashing white acetylene gas light, showing a flash of 0.3 sec. duration every 3 seconds, has been established about 130 yd. from the northwest end of Eagle Island, Bay of Islands. The light is at an elevation of 109 ft. and consists of a white structure of open frame work surmounted by a red lantern.

**United States.**—A steel conical buoy, 17A, showing an occulting white light, has been established in 3 fathoms, off Whisky Island shoal, River St. Lawrence.

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**Vancouver Drydock.**—In reference to the Vancouver press dispatch of July 21, referred to in Canadian Railway and Marine World for August, stating that the contract between the Dominion Government and J. Coughlan & Sons, for building a drydock on Burrard Inlet had been signed, and that work would be started in 60 days thereafter, we were officially advised July 27 that the agreement had not been executed, as the contractors were re-arranging the layout of plant and site, which would require the approval of new plans and specifications.

**Cuban Port Congestion.**—Major H. A. Chisholm, Canadian Government Trade Commissioner at Havana, Cuba, wrote recently that so serious has Cuban port congestion become that a commission of 17 U.S. shipping men was due to arrive in Havana within a few days to go thoroughly into the problems of the port and make recommendations for the solution of the difficulties. Ships have sometimes been held up in Havana harbor for two or three months at a time.

**U. S. Steamship Rates.**—The Interstate Commerce Commission has authorized steamship lines, subject to its jurisdiction, to increase their rates to the same extent as railways have to be authorized to do between the same points or in the same territory.

## Panama Canal Traffic.

During the fiscal year ended June 30, the volume of traffic passing through the Panama Canal exceeded that in any previous 12 months. A total of 2,478 commercial ships made the transit, as compared with 2,025 in the fiscal year 1918-19, 2,130 in the fiscal year 1917-18, and 2,134 in the calendar year 1919. The aggregate net tonnage of the commercial ships passing through the canal in the fiscal year 1920 was 8,545,653 tons, according to the Panama Canal rules of measurement. In the fiscal year 1918-19, the aggregate was 6,131,575 net tons. In addition to the traffic of commercial ships, 266 ships passed through the canal in the U.S. Government Service without the payment of tolls. In revenues and in earnings in excess of expenses of operation and maintenance, new records were, likewise, established during the past fiscal year. The summation of charges has not been completed in detail, but the figures indicate aggregate revenues approximating $8,800,000 during the year. Expenses of operation and maintenance total about $6,650,000. No profit has been made in a commercial sense, since there is no consideration here of interest charges on the investment or of the depreciation of the plant. The previous record for a year for revenues was made in the fiscal year 1918, viz., $6,411,843.28. In that year the excess of revenues over expenses was $491,500.34, being greater than that in any fiscal year prior to 1919-1920.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Authorities. M. 9 Beaver Hall Square, Montreal.

Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.

Canadian Car Service Bureau—W. J. Collins. Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.

Canada Freight Association (Eastern lines)—G. C. Ransom, 909 Shaughnessy Bldg., Montreal.

Canadian Freight Association (Western Lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.

Niagara Frontier Summer Rate Committtee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.

Railway Association of Canada—C. P. Riddell, Montreal.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.

Transportation Club of Vancouver.—C. E. Blaney, Travelling Passenger Agent, Canadian Pacific Ocean Services Ltd., Vancouver, B.C.

## Transportation Conventions in 1920

Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.

Oct. 11 to 15.—American Electric Railway Accountants Association, Atlantic City, N.J.

Oct. 11 to 15.—American Electric Railway Engineering Association, Atlantic City, N.J.

Oct. 11 to 15.—American Electric Railway Transportation and Traffic Association, Atlantic City, N.J.

Oct. 14, 15.—American Association of Passenger Traffic Officers, Chicago, Ill.

Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**The Holden Co. Ltd.**, Montreal, has been granted supplementary letters patent, increasing its authorized capital stock from $250,000 to $1,000,000.

**Independent Pneumatic Tool Co.**, Chicago, Ill., has issued circular 33, describing and illustrating Thor universal electric drills.

**Joliette Castings & Forgings Ltd.**, which was incorporated July 3, under the Dominion Companies Act, with authorized capital of $1,000,000, and head office at Montreal, has taken over the businesses of F. E. Smith Ltd., Independent Steel Specialties Corporation Ltd., Montreal, and Joliette Steel Co. Ltd., Joliette, Que., with head office at Montreal and works at Joliette. The President, F. E. Smith, was at one time Manager, Canadian Steel Foundries, Montreal, resigning Aug., 1918, to establish F. E. Smith Ltd., which dealt in iron and steel refractories, mill, foundry, shipbuilding and railway supplies, and pneumatic tools, and who in Mar., 1920, incorporated Independent Steel Specialties Corporation Ltd., for the production of steel castings. The Vice President is W. A. McCallum, formerly Assistant to President, Canadian Tube & Iron Co., and the Secretary is M. J. Mervin, formerly Auditor, Sterling Bank. The new company is manufacturing steel castings for railway, shipbuilding and automobile works, also general machinery castings. It is putting in an electrical furnace with a capacity of 400 tons a month.

**Metal & Thermit Corporation**, New York, N.Y., is manufacturing an improved tool wagon for holding and keeping together materials and appliances for Thermit welding, which it recommends to railway shops using the Thermit process. The new design of tool wagon is claimed to be an improvement over the old design recommended formerly, as it provides a place for the Thermit preheater (lacking in the old design) side by side with the crucible. As in the case of the old tool wagon, the new one also contains a tool box for all necessary tools, space for mold boxes and a bin for molding material, divided into two parts, the upper one for facing material and the lower one for backing material. A sand screen is provided in the lower part of the lid for screening molding material, when a mold is broken up to prepare it for the next weld. During the screening of sand this lid is closed. The wagon is 42 in. wide, 57 in. high to the top of the tool box, and its length, exclusive of handle, is 7 ft. 5 in.

**The Superheater Co. Ltd.** has been incorporated in Canada. Its main office is in the Transportation Building, Montreal, and its manufacturing plant is at Sherbrooke, Que. It will manufacture the type of fire tube superheaters now in general use on locomotives, and also fire tube superheaters for marine installation, of which there are now over 2,000 in service. In the case of water tube boilers for marine service, the company designs and manufactures the superheater to suit each individual case. This, in fact, applies in all cases, and in particular in the design and construction of superheaters for stationary installation, either water tube, fire tube, or separately fired. The conditions are studied in each case, with a view to supplying the most economical and effective installation. The company uses a form of return bend, which is made, by a forging process, from the metal of the superheater pipes, making an exceptionally strong construction which is proof against high temperatures. This form of return bend has also been considerably sought after for use in pipe coils for refrigerating purposes, condensers and other uses.

**Vapor Car Heating Co. of Canada**, 61 Dalhousie St., Montreal, has issued a catalogue, 22, showing of its car heating and ventilating appartus, describing and illustrating the vapor system of car heating and other devices, including cab heating systems, steam and hot water car heating apparatus, etc., are manufactured formrly by Chicago Car Heating Co., Standard Heat & Ventilation Co. and Safety Car Heating & Lighting Co.

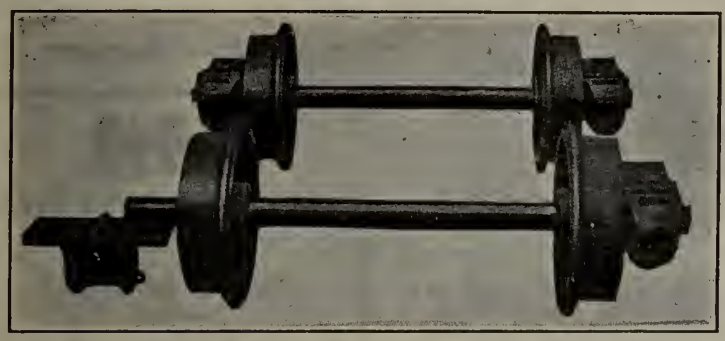
CRANE FLANGED FITTINGS

CRANE
LIMITED
HEAD OFFICE & WORKS
1280 ST PATRICK ST
MONTREAL

Branches: Toronto, Winnipeg, Vancouver
Sales Offices: Halifax, Quebec, Ottawa, Calgary

# Save Money by Making Your Own Cars

We have supplied many hundreds of sets of Car Irons of various designs to firms in well nigh every section of Canada for making up their own small cars, and are constantly getting repeat orders. Why pay freight on the wood work of your small cars when you can get the wood and make it up right where you are?



We make up these Car Irons to your specifications, with any diameter and weight of wheel, chilled, or unchilled. Any gauge axle, either round or square, and the right weight for your work.

Any style Box desired. We have a lot to choose from.

**We Also Make up Small Cars Complete,** either wood or iron body, in a great variety of designs.

**MARSH ENGINEERING WORKS, LIMITED** Established 1846 **Belleville, Ontario**

# FORGINGS

SEND PRINTS FOR PRICES

CANADA FOUNDRIES & FORGINGS, LIMITED WELLAND, ONT.

# IMPERIAL BANK OF CANADA

| | |
|---|---|
| Capital Authorized | $10,000,000 |
| Capital Paid up | 7,000,000 |
| Reserve Fund | 7,500,000 |

Head Office: Toronto.

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the World.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches throughout the Dominion of Canada.

## Buy Northern Cranes—Made in Canada

ELECTRIC CRANES
HAND CRANES
ELECTRIC HOISTS
AIR HOISTS
FOUNDRY EQUIPMENT

*Write for prices.*

**NORTHERN CRANE WORKS LIMITED**
WALKERVILLE, ONTARIO

## The Power of Advertising.

It is often difficult for an advertiser to realize what he is actually paying for, because he cannot project his imagination into the thousands of homes and offices and see his advertisement doing its work. The advertiser does not pay for ink and paper. These are merely mechanical essentials. He pays for the effect upon people's minds, and that is as intangible as air, but as permanent as a towering structure of steel and concrete.

# CHICAGO RAILWAY SIGNAL & SUPPLY COMPANY

*Manufacturers of All the Name Implies*

Interlocking and Electric Signals and Materials, Highway Crossing Alarms, Forgings, Castings, Etc.

CANADIAN DISTRICT OFFICES.

—Western— Moore, Cameron & Hill Ltd., McIntyre Block—Winnipeg.

—Eastern— Moore, Cameron & Hill Ltd., Beaver Hall Hill—Montreal.

# Malleable Castings

**High Grade Material**
**First Class Service**

## Galt Malleable Iron Co., Limited - GALT, ONT.

## General Railway Signal Company of Canada, Limited

**Consulting Railway Operating Engineers**

Reports, Freight and Passenger Yards and Terminals, Single Track Capacity, Side Track Location, Interlocking and Block Signal Design and Construction.

**Head Office - Lachine, Quebec**

# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

**ADVERTISING RATES.**

Rates for advertisements set in uniform style in six point under

Positions Wanted and Positions Vacant, 3c per word.
Equipment for Sale advertisements, 4c per word.

Allow five words where replies are to be sent to a box number. Minimum order—$1.

Rates under other headings and for display advertisements on application.

## FOR SALE

### At a Bargain

Steam screw wood steamer of 64.73 registered tonnage.

Built in 1890 in New York. Length 115.8', breadth 23.9'.

Two covered decks and one awning deck. Compound engine 12½" x 24" x 17" of 150 I. H. P., built by Montcrief McLay Company in 1890.

Horizontal Internal Marine Boiler, diameter 90", length 11'—8½", 115 pounds working pressure. Built by Robb Engineering Company in 1906.

Engine, shafting and pumps in good condition.

Boiler needs a few repairs. Last test 115 pounds—two years ago.
Hull not in best of condition.

Address all enquiries to the

**Cape Breton Electric Co., Limited, Sydney, Nova Scotia.**

## FOR SALE

Three steam tugs and one stern wheeler, about September 1st, now plying on the Saskatchewan River, between The Pas and Sturgeon Landing.

S.s. "Minasin," length 60 ft., width 13.2 ft., registered tonnage, 26.16, n.h.p. 6, speed about 9 miles, screw propelled.

S.s. Sam Brisbin, screw propelled, length 47.5 ft., width 11 ft., n.h.p. 4.2, registered tonnage 7.48, speed about 7 miles.

S.s. Notin, screw propelled, length 48 ft., width 10 ft., registered tonnage 12.56, n.h.p. 4.16, speed 8 miles.

S.s. City of Prince Albert, stern wheeler, length 96 ft., width 20 ft., registered tonnage 88.92, n.h.p. 6.6, speed 8 miles an hour.

Any further information as to price, or further description, of these boats will be furnished on application to the Mandy Mining Company, G. R. Bancroft, Superintendent, The Pas, Manitoba.

## CANADIAN PACIFIC RAILWAY CO.

### Dividend Notice.

At a meeting of the Board of Directors held today the following dividends were declared:—

On the Common Stock, two and one-half per cent. for the quarter ended 30th June last, being at the rate of seven per cent. per annum from revenue, and three per cent. per annum from Special Income Account, payable 1st October next, to Shareholders of record at 3 p.m. on 31st August instant.

On the Preference Stock, two per cent. for the half-year ended 30th June last, payable 1st October next, to Shareholders of record at 1 p.m. on 21st August instant.

The Preference Stock Books will be closed in London from 1 p.m. on the 21st day of August to 1 p.m. on the 2nd day of October.

By order of the Board,

ERNEST ALEXANDER,
Secretary.

## DEPARTMENT OF THE NAVAL SERVICE.

### NOTICE.

Arrangements have been completed whereby all of the vessels belonging to the Imperial Government commonly known as Trawlers and Drifters, and presently under the jurisdiction of the Department of the Naval Service at Halifax, N.S., will be sent to England with the least possible delay.

Any one desiring to avail themselves of the opportunity afforded by the presence of these vessels in Canada to purchase one or more of them should act promptly. Inquiries addressed to the undersigned will receive prompt consideration.

G. J. DESBARATS,
Deputy Minister of the
Naval Service.

Ottawa, Ont., August 12, 1920.

Unauthorized publication of this advertisement will not be paid for.

## For Sale

"We are now prepared and glad to furnish Stucki Side Bearings, per Canadian Patents Nos. 187019 and 170760 upon request. Please call—The Holden Co., Ltd., Montreal, Canada."

## DEPARTMENT OF THE NAVAL SERVICE.

### NOTICE OF SALE.

Sealed tenders addressed to the undersigned and endorsed on the envelope "Tender for C.G.S. 'Thirty-Three,'" will be received up to noon of Thursday, the 9th day of September, 1920, for the purchase of the Steamer "Thirty-Three" as she now lies at Halifax, N.S.

The length of this vessel is 80', breadth 18' 1", depth 8' 8", gross tonnage 79, registered tonnage 33, H.P. 21, with a speed of approximately 9 knots. She is constructed of steel.

Full particulars and permission to inspect may be obtained on application to the undersigned, or to the Commander in Charge, H.M.C. Dockyard, Halifax, N.S.

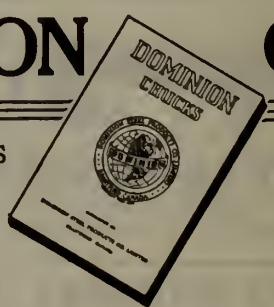
G. J. DESBARATS,
Deputy Minister
of the Naval Service.

Department of the Naval Service,
Ottawa, Ont.,
August 10th, 1920.

Unauthorized publication of this advertisement will not be paid for.

## *Send for this Book*

# DOMINION CHUCKS




DOMINION CHUCKS *Steel or Cast Iron Body* ARE GUARANTEED *Built for Heavy Duty*

## You Want Dependable Chucks

INCREASED cost of production demands that every tool give satisfactory and continuous service and be free from the annoyance of frequent breakage. **Dominion Chucks** were perfected by us for our own use and to fill a specific need for a chuck that would stand up and give a satisfactory service under the strain of heavy and continuous work.

Chuck troubles in our own plant compelled us to design and manufacture for our own use the **Dominion Chuck.** It has proved satisfactory under the test of heavy duty service and the most exacting work. We are manufacturing this chuck either in all-steel or iron bodies—sizes 10 to 24 inches. *Write for our Chuck Book.*

**DOMINION STEEL PRODUCTS CO.**
**LIMITED**
*Engineers • Manufacturers*
BRANTFORD, CANADA

7

CHAPTER 9.

# WHAT CANADA'S ELECTRIC RAILWAYS ARE BUYING

One might think, unthinkingly, that when an electric railway line was built and the cars set on its tracks, there was little for the operating company to buy.

Yet here is a list of 100 things or groups of things that operating companies buy—

Then, add to these the still larger list of things that railway contractors and car builders and power house engineers must buy when building and equipping new lines.

And remember, that more miles of new electric railway, more power houses and more cars are being built each year; and that Canada is really only in its infancy in urban and interurban development; with big things to come in the very near future.

And then make note of the fact that

## Canadian Railway and Marine World

is the only publication in Canada appealing specifically to both the building and the operating electric railway interests.

## CANADIAN RAILWAY AND MARINE WORLD

**Toronto** *Member of* **Canada**

*Audit Bureau of Circulations,*
*Associated Business Papers,*
*Canadian National Newspapers and Periodicals Association,*
*Canadian Press Association.*

### List of Supplies purchased by an Electric Railway

Axle Bearings.
Armature Bearings.
Augers.
Bar Iron.
Bar Steel.
Bar Copper.
Bolts, Machine.
Bolts, Carriage.
Bolts, Finished.
Brake Shoes.
Coal.
Conductors' Punches.
Coke for Forges.
Copper Bonds.
Cast Iron Castings.
Cotter Pins.
Car Trolley Poles.
Car Wheels.
Car Trucks.
Car Axles.
Corn Brooms.
Crowbars.
Emery Wheels.
Emery Cloth.
Forges.
First Aid Equipment.
Galvanized Pails.
Galvanized Coal Hods.
Galvanized Watering Cans.
Generators and Parts.
Hard Fibre.
Hammers.
Insulating Papers.
Lead Covered Wire.
Linen and Cotton.
Life Guards.
Leather Belt Cord.
Leather Belting.
Linen and Cotton Hose.
Lamps.
Lamp Sockets.
Magnet Wire.
Malleable Castings.
Metal-working Tools.
Pipe and Fittings.
Paint Shop Equipment.
Paint Brushes.
Paints and Oils.
Printing.
Railway Bolts.
Railway Varnishes.
Railway Insulating Varnish.
Repair Shop Equipment.
Rubber Packing.

### List of Supplies purchased by an Electric Railway

Railway Springs.
Rails and Fish Plates.
Railway Ties.
Railway Spikes.
Rubber Covered Wire.
Rubber Covered Ropes.
Railway Motors.
Railway Gears.
Railway Pinions.
Railway Motor Frames.
Railway Gear Cases.
Railway Controllers.
Railway Trolley Wheels.
Railway Harps, Trolley.
Railway Trolley Bushings.
Railway Commutators.
Railway Fields.
Railway Armatures.
Railway Brush Holders.
Railway Trolley Rope.
Railway Car Heaters.
Rattan Seating.
Rattan for Sweeper Brooms.
Rubber Belting.
Rubber Hose.
Saws.
Screws, Wood.
Screws, Brass.
Screws, Set.
Screws, Machine.
Screws, Cap.
Scythes.
Steel Castings.
Sand Paper.
Spray Cans for Paint.
Street Trolley Poles.
Tamps.
Track Bolts.
Trolley Wire.
Tape.
Trolley Catchers.
Trolley Stands.
Trolley Stand Bases.
Uniform Caps.
Uniform Clothing.
Uniform Buttons.
Wrenches.
Washers, Iron.
Wire Nails.
Weatherproof Wire.

FILL LAST AD.

**Engineers and Contractors**

**ANGUS SINCLAIR, C.E.**

*Railway Contractor*

OFFICE: EXCELSIOR LIFE BUILDING,
Adelaide and Toronto Sts., Toronto

**THE ARNOLD COMPANY**

ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
REPORTS, DESIGN AND CONSTRUCTION
Complete Railway Shop and Terminal Properties—
Electrification of Steam Railroads.
OUR EXPERIENCE COVERS THIRTY-FIVE PLANTS
CHICAGO

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Equipped with 75 H.P. boiler, engine generator set of 50 k.w., motor generator set, 2 steam winches, etc., etc.

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Condenser, Air, Bilge and Feed Pumps, up to and including thrust bearing included with engine.

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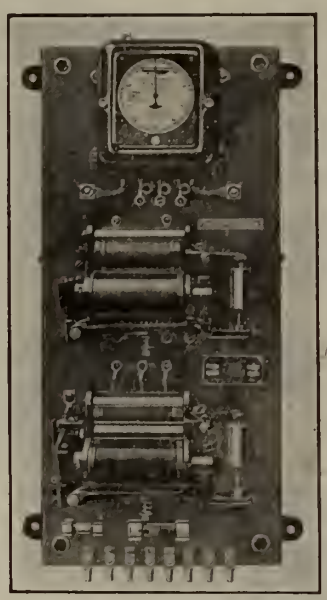
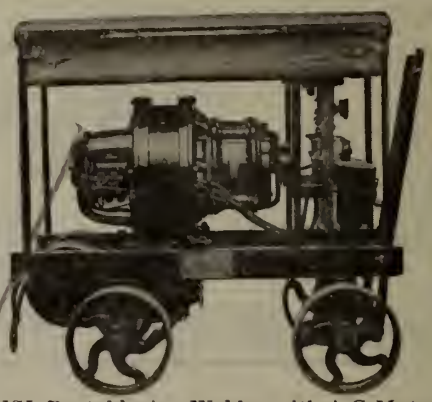


USL Car-Lighting Panel



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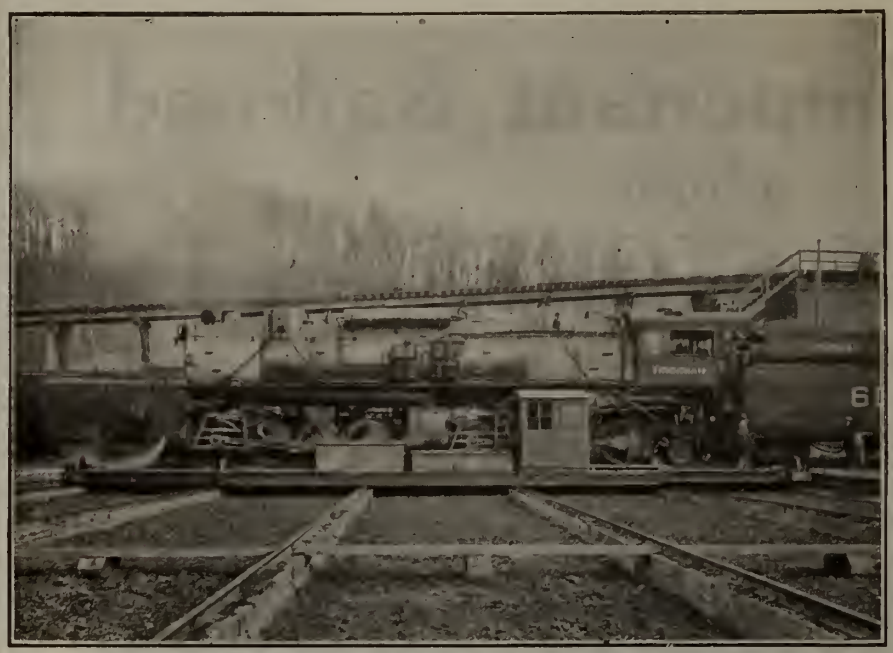

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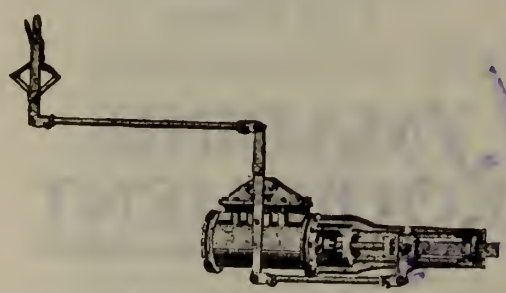

Ragonnet Power Reverse Gear

*Made in Canada*

# As Easy Right As Wrong

Even the hardiest engineer does not attempt to hook up a "big one" by hand, to get the cut-off just right at speed.

If steam is wasted he just can't help it.

But with the Ragonnet Power Reverse Gear it is easy to have the cut-off right always.

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"Another weld, shown in an illustration, was made on Engine No. 4, which had been welded with oxy-acetylene and failed during the first 100 miles that the engine made."

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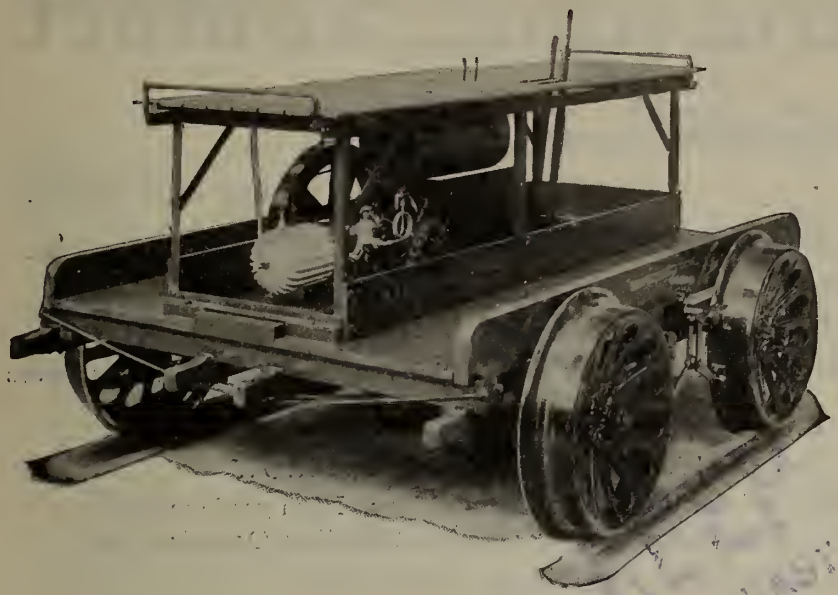

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This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running, all vibration being eliminated, and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

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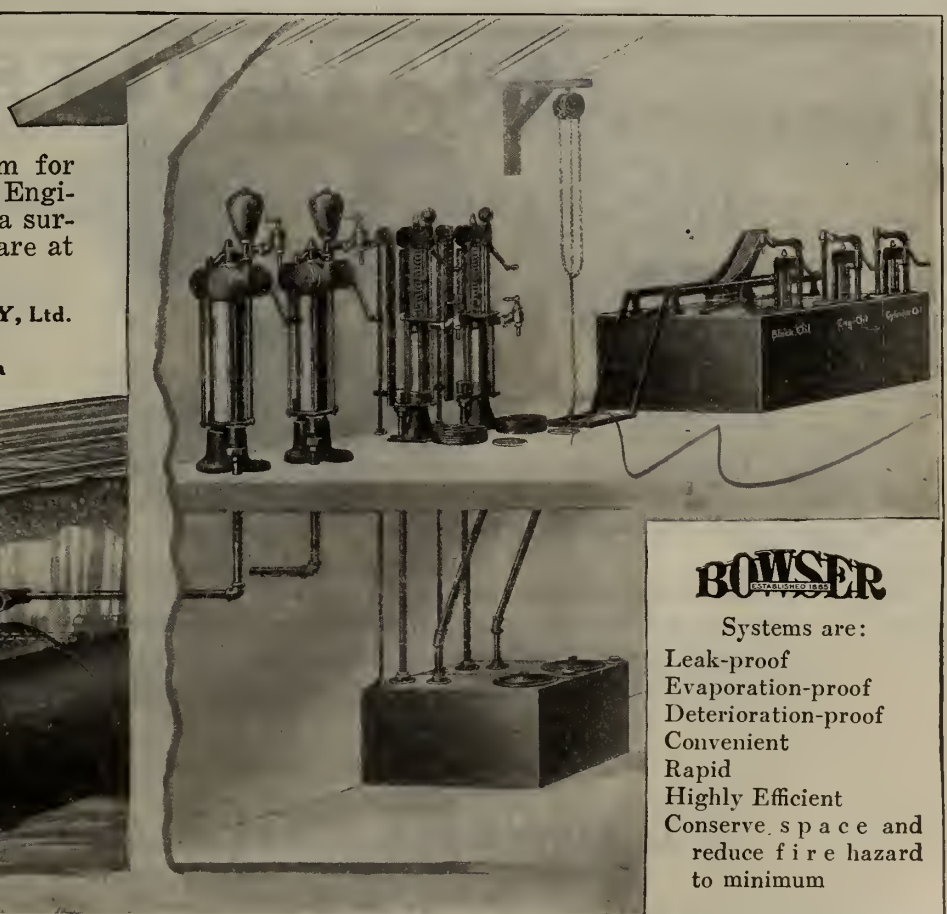

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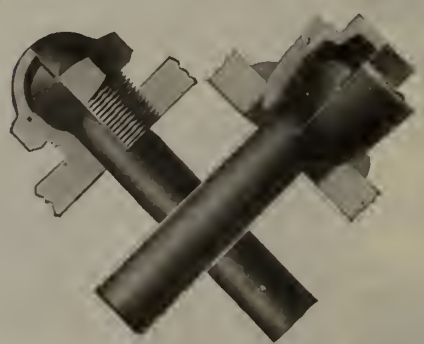

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Our latest achievement, the **"F. B. C." FLEXIBLE STAYBOLT,** is as great an improvement over the present type of Tate bolt, as the Tate was over the ordinary rigid staybolt.

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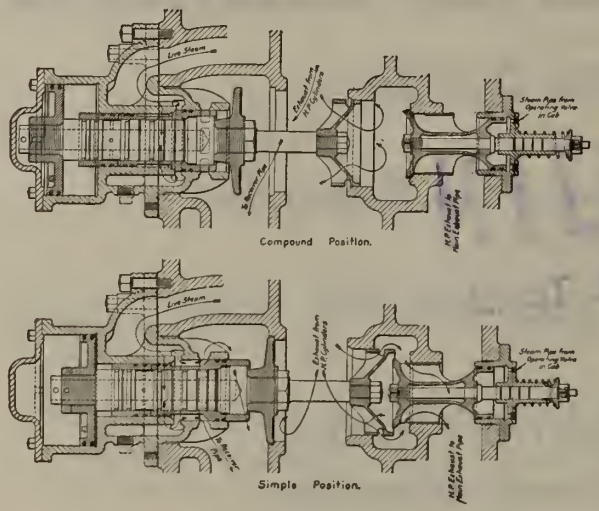
**Works: Rahway, N. J.**

# Alco Intercepting Valve




In order to obtain the most serviceable compound locomotive, steam should automatically be admitted direct from the boiler to the low pressure cylinders in starting and until they are supplied with steam by the exhaust from the high pressure cylinders. Provision also should be made by which when additional hauling capacity is required, the power of the locomotive may be increased by changing from compound working into simple gear.

In the ALCO system of compounding these conditions are covered by two of the functions of the intercepting valve.

As the operations of this valve are all automatic except that by which the locomotive is changed from compound into simple working, practically no special knowledge is required to handle it. Changing into simple working is effected by simply opening an operating valve in the cab which controls the emergency exhaust valve.

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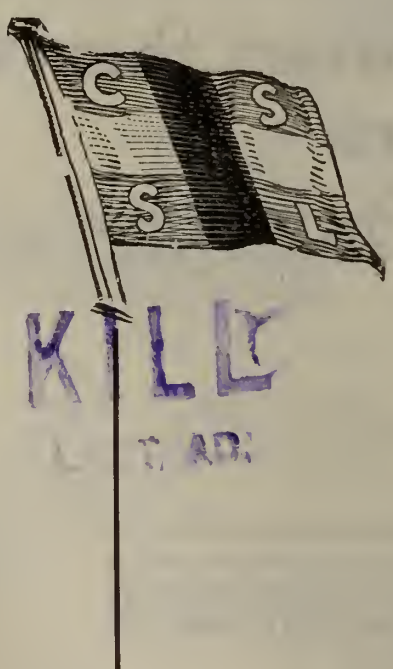


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Full Summer schedule to Niagara now in effect.

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**SHIP YOUR FREIGHT BY WATER**

Save both Time and Money.

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# Wire Rope
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IN stock at each of our warehouses we have a good assortment of standard sizes of Steel Wire Ropes in Siemens-Martin Steel, Crucible Cast Steel, Plough Steel and Extra Plough Steel.

*We also manufacture and carry in stock all kinds of*

**BARE and INSULATED ELECTRICAL WIRE and CABLE**

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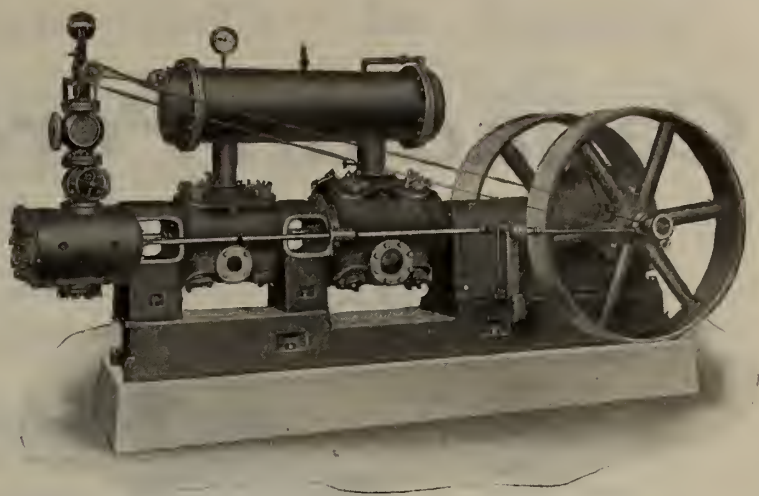

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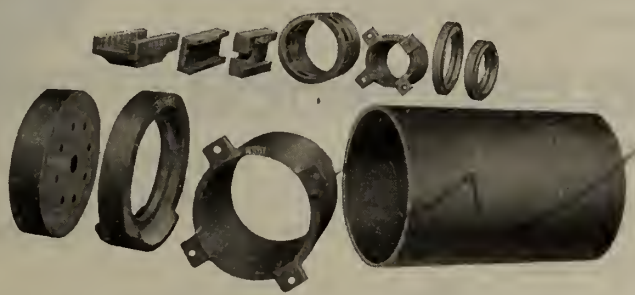

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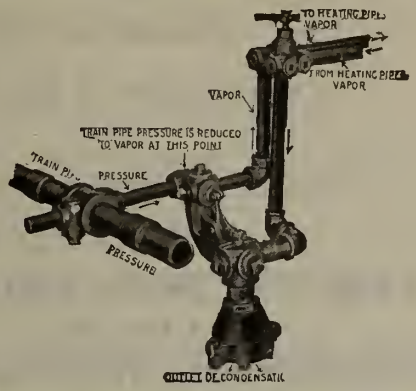


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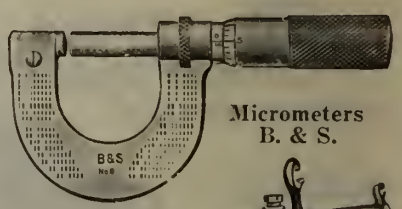


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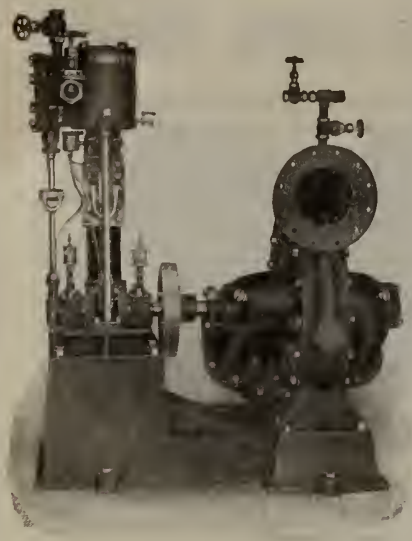

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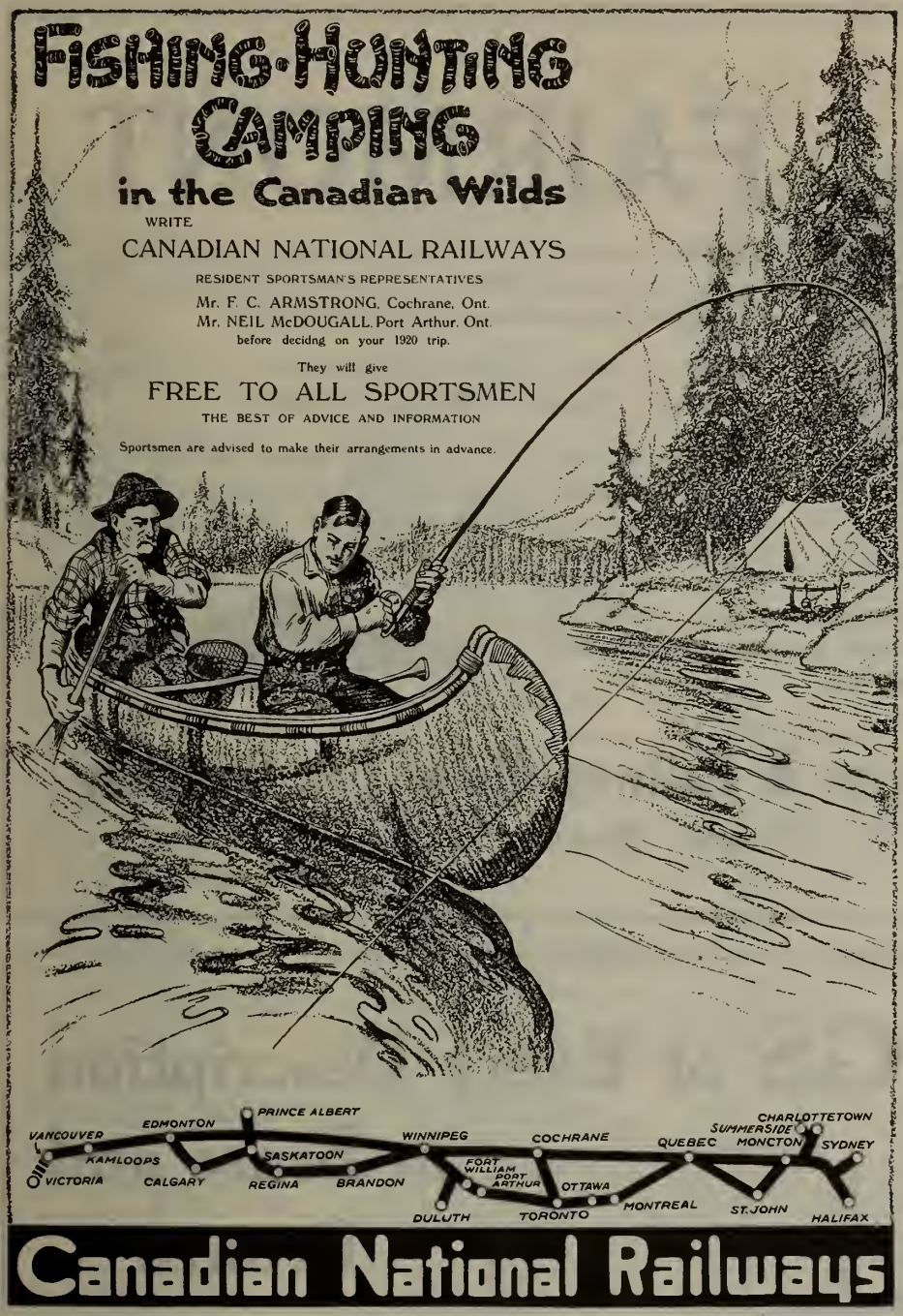

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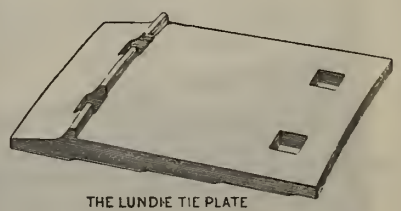

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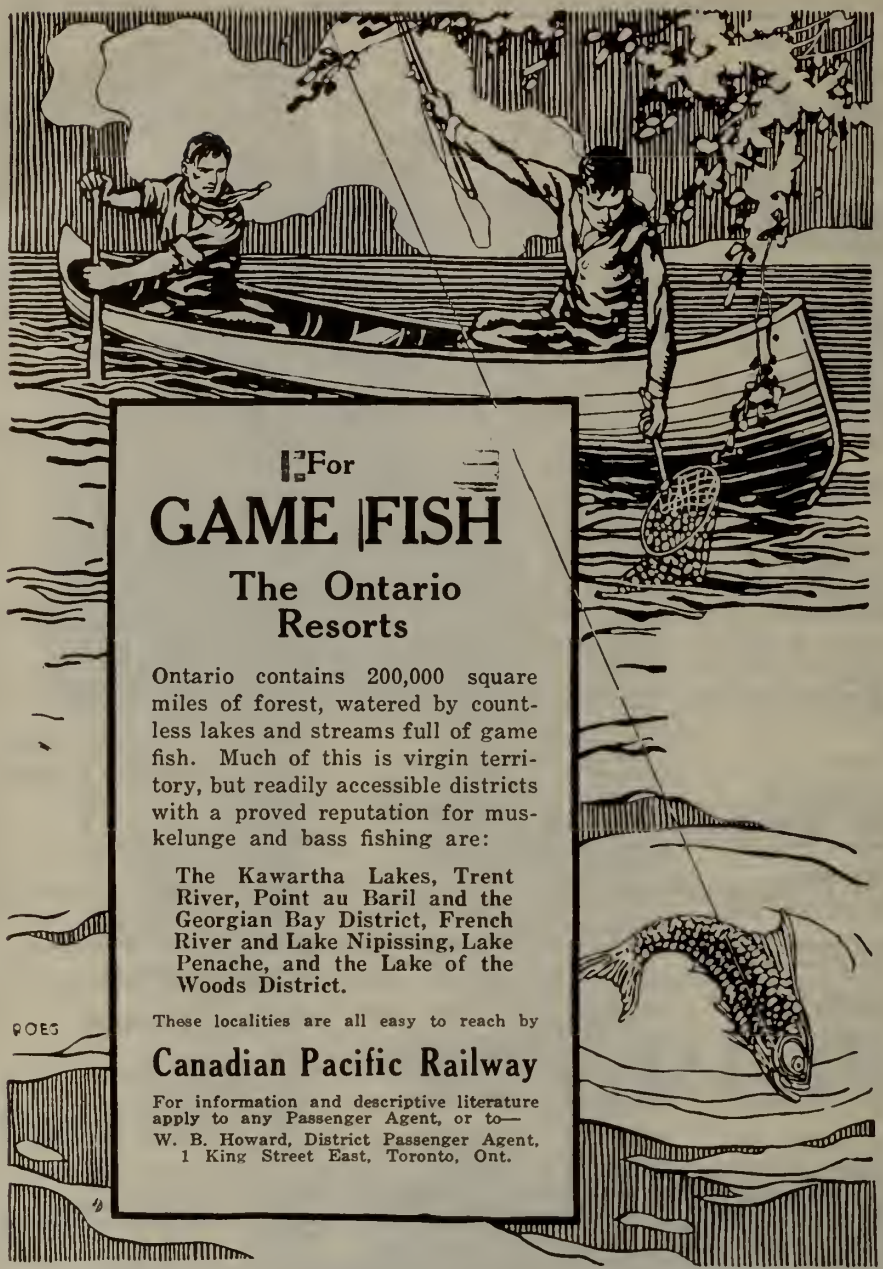

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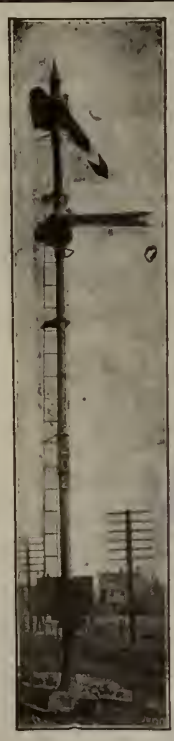

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*Alternate months.

# The Pyrograph Does It

**in 48 minutes**

trims to correct flange height, with beveled calking edge, at one operation a 15-ft. dia. Scotch Marine Boiler Head, with the oxy-acetylene cutting torch.

—no chipping!
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**in 48 minutes**

against 20 to 30 hours by former methods of hand chipping and grinding.

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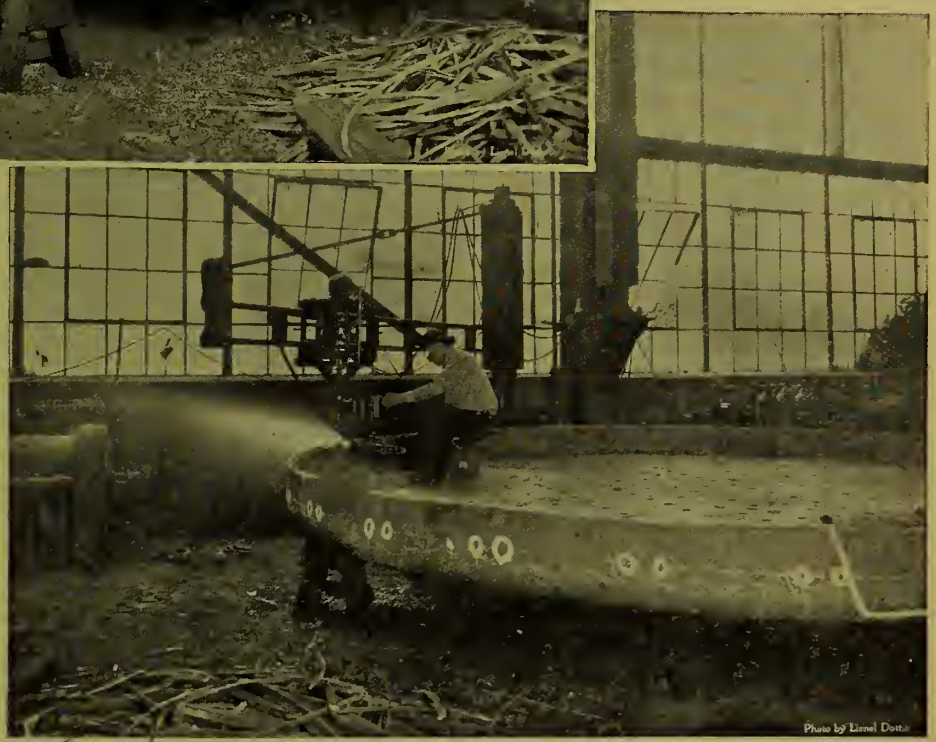

## THE PYROGRAPH

in operation at Federal Shipbuilding Co.'s Plant, motor driven (⅛ H.P.), automatically follows any shape of flanged head, round, oval, oblong or irregular. It is one of several exclusive developments of the D-B Co. for mechanical cutting and welding with the oxy-acetylene and oxy-hydrogen process, employed in fabricating plants, including locomotive and boiler shops, shipyards, rolling mills, foundries.

Photos by Lionel Dottin, Federal Shipbuilding Co.

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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 272
Index to contents, pg. 547

TORONTO, CANADA, OCTOBER, 1920

Single copies 25c.
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3,995 TONS D. W.

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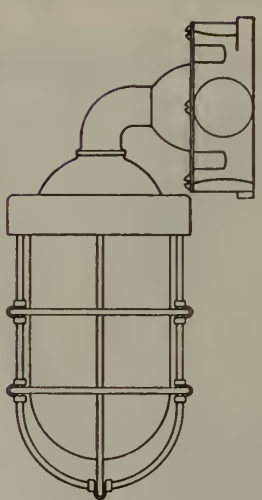
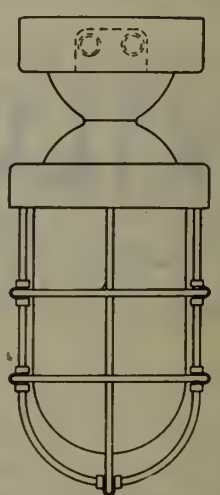


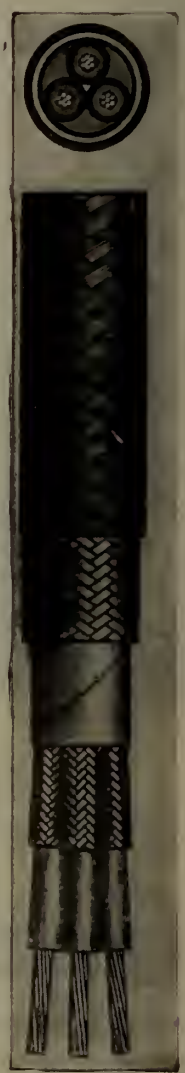
Inside Deck Fitting

## A Steel Cargo Vessel

This vessel was recently delivered to the Canadian Government. She is wired throughout with Cables and Fittings approved by the Department of Marine and *manufactured by*



Outside Deck Fitting



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Drew Samson Tunnel Approach, for taking trolley into barns, under bridges, elevations or through tunnels where there is minimum clearance.

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## WATER TREATMENT IS NECESSARY TO THE ECONOMICAL AND EFFICIENT OPERATION OF LOCOMOTIVES

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BARRETT PRODUCTS are the final result of exhaustive research and manufacturing experience that covers half a century. This is why they are the best — and they have been proven by many thousands of satisfied users in Canada.

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Elastigum is composed of a heavy bituminous base, combined with slow-drying, waterproof oils and a sufficient proportion of mineral fiber to give it consistency and holding power.

Elastigum is remarkably tenacious and retains its toughness and elasticity over long periods, regardless of temperature or weather conditions, expanding and contracting in conformity with any surface to which it is applied, whether metal, stone, concrete, wood or even such highly glazed surfaces as glass, glazed brick or terra cotta. It is known as the "plastic cement of a thousand uses."

No heating or mixing necessary. Elastigum comes to you all ready for use, in the following sized packages: 1-lb. tins (cases of 24 cans), 5-lb. packages (12 to the case), 25-lb. packages, 100-lb. packages, ½ barrels of about 300 lbs., and barrels of about 600 lbs.

## Everjet Industrial Paints

Railroads and manufacturing companies throughout the Dominion find constant use for these "Proven Protective Paints". Exceptionally durable and absolutely water-proof, as well as non-corrosive, they are the most popular of all Barrett products.

Barrett Industrial Paints include—

Everjet Boiler Paint
Everjet Roof Paint
Everjet Smoke-stack Paint
Everjet Bridge Paint
Everjet Penstock Paint
Everjet Machinery Paint

Put up in 1, 5, and 10 gallon cans, half barrels and barrels. Our service Department, composed of experienced chemists, will be glad to help you solve your paint problems.

## Nox-Aer-Leek Boiler Setting Cement

A leaky boiler-setting is fatal to fuel economy, and *every* brick boiler setting is more or less leaky.

Barrett Nox - Aer - Leek overcomes this condition. It is a plastic cement of elastic bitumen, fused with non-drying oils and asbestos fiber. Applied to the exterior walls, it renders boiler-settings absolutely air-tight and moisture-proof.

You will find it sound economy to use Nox-Aer-Leek. Its small cost is repaid many times over by the saving in fuel expense.

Put up in ½ barrels (about 300 lbs.) and barrels (about 550 lbs.).

*If your dealer cannot supply you with these "Proven Products" write us and we will.*

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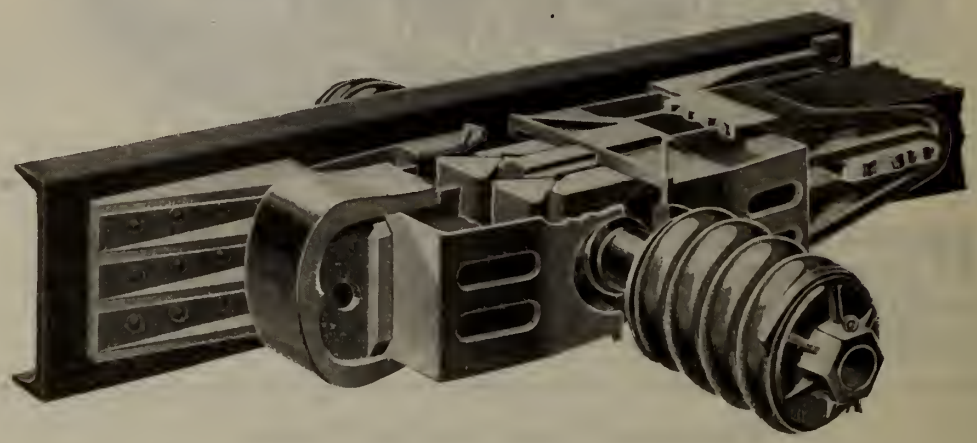

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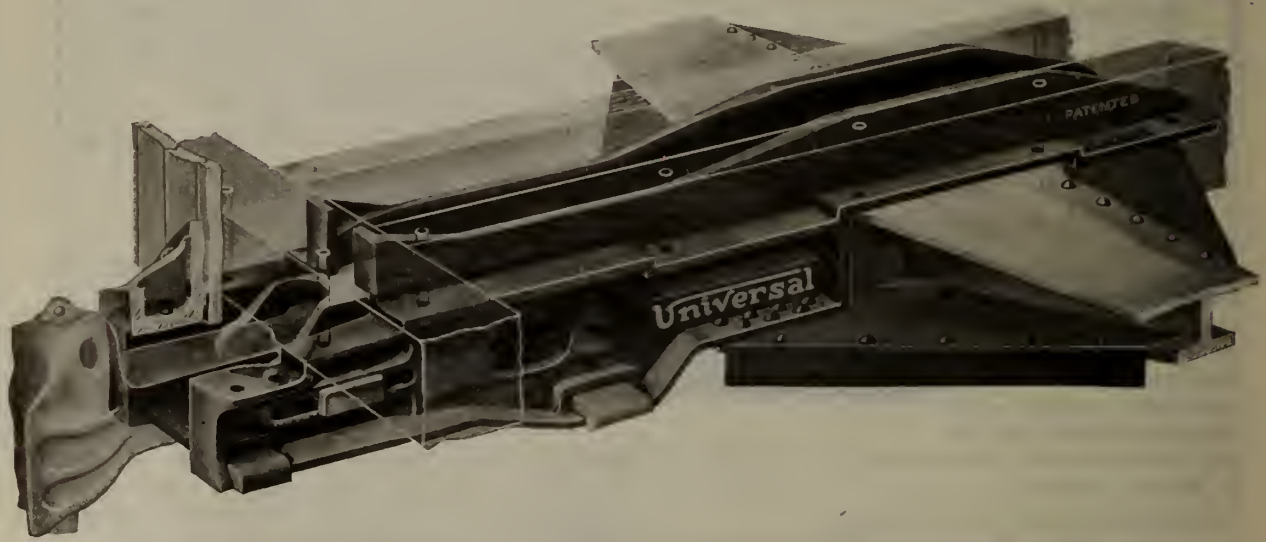


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# The Dependable Galena Oils

When the heavy load, the long haul or the high speed is necessary, the sturdy reliability of Galena Oils is quickly evident. They carry the extra strength and vitality necessary for the exacting nature of railway lubrication work. They do not give service just "now and then," but all the time. Galena Oils provide safety, security and satisfaction; they produce savings in fuel, repairs and equipment. They give greater mileage, minimize loss of time due to hot boxes and in every way are conducive to economy and efficient operation. Long after ordinary oils have lost their vitality or lubricating power, Galena Oils continue to protect and lubricate. All this is possible only because of their supreme quality and the valuable co-operation of Galena Service, which prescribes and puts into effect the methods that give results.

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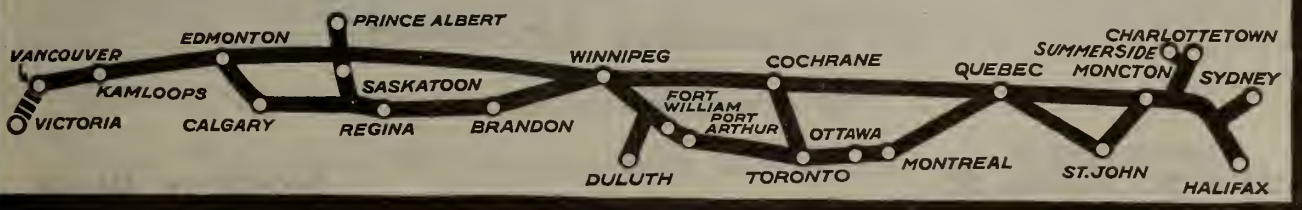


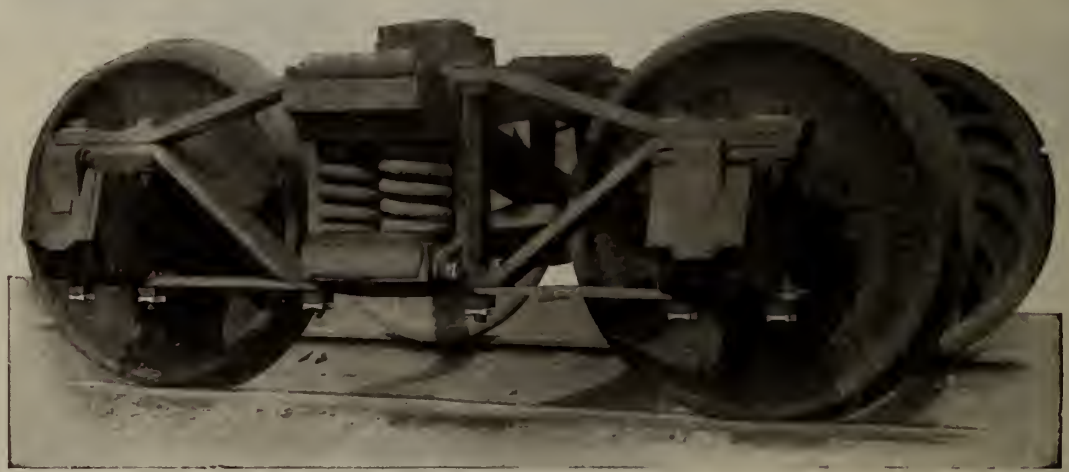

# Canadian National Railways

# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***



Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

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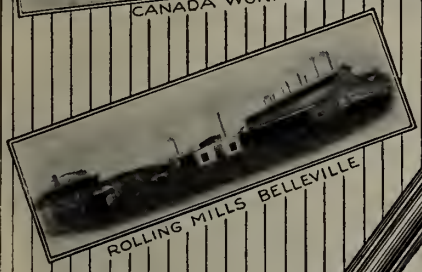

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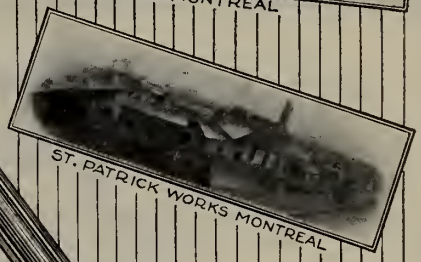

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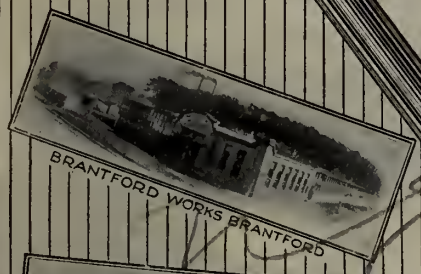

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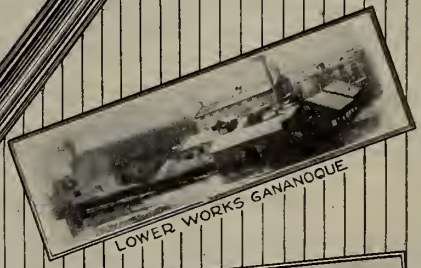

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**These Plants and the Organization that directs and operates them, stand back of and Guarantee Quality and Service at All Times**

# Confidence

While it is true that spring nut locks are only a small factor in railroad operations,

# HIPOWER NUT LOCKS

are a big factor in building up confidence. Hipowers produce good track, and good track begets confidence, and confidence is the right of way over which a railroad runs to success.

For fast express and heavy freight service, Hipower has become justly famous in maintaining fast train schedules with absolute safety.

The use of Hipowers on rail joints, frogs, switches and crossovers will retard if not eliminate initial looseness, caused by continual grnding wear, later compensate for this wear, and keep all bolted parts on your track tight.

*Specify Hipower and make your track safe*

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12000 LBS.
PRESSURE RESISTANCE

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The National Lock Washer Company

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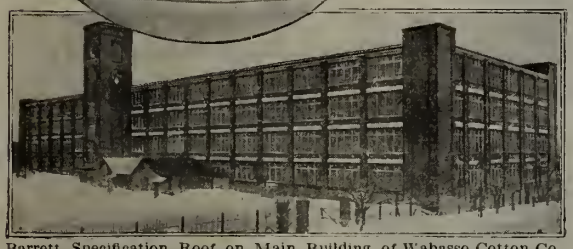
New York Chicago Detroit

ABOVE—Barrett Specification Roof on Manufacturing Plant of Wayagamack Pulp and Paper Co., Limited, Three Rivers, P.Q. Architects and Engineers: T. Pringle & Son, Limited, Montreal; General Cont.: C. E. Deakin, Montreal: Roofers: Sibley & Huot, Montreal.

Barrett Specification Roof on Office and Waiting Room of North Shore Power Co., Limited, Three Rivers, P.Q. Roofers: Germain & Frère, Three Rivers, P.Q.



Barrett Specification Roof on Main Building of Wabasso Cotton Co., Limited, Three Rivers, P.Q. Architects and Engineers: T. Pringle & Son, Limited, Montreal: General Cont.: C. E. Deakin, Montreal, Roofers: Geo. W. Reed & Co., Montreal.

Barrett Specification 20-Year Bonded Roof on Technical School of La Corporation de L'ecole Technique des Trois-Rivieres at Three Rivers, P.Q. Architects: Asselin & Denoncourt, Three Rivers, P.Q. General Cont.: Bellefeuille & Trépanier, Three Rivers, P.Q. Roofers: Nap. Turcot Ltée., Montreal, P.Q.

Barrett Specification 20-Year Bonded Roof on Casket Mfg. Plant of Girard & Godin, Three Rivers, P.Q. Roofers: C. Hamelin & Fils, Three Rivers, P.Q.

Barrett Specification 20-Year Bonded Roof on Drill Shed, Militia Dept., Federal Government, Three Rivers, P.Q. Roofers: Germain & Frère, Three Rivers, P.Q.

# Three Rivers, P.Q. is a "Specification City"—

THE sounder the industrial growth of a city, the greater the predominance of Barrett Specification Roofs! That is a rule which holds good all over the Dominion.

Take Three Rivers, for instance—

This hustling, progressive city on the St. Lawrence—with its splendid deep-water harbor and unlimited low-priced electrical power—is too busy turning raw materials into finished products for the world's commerce, to waste time and money on inferior buildings and equipment.

In Three Rivers they erect permanent buildings and cover practically all of them with Barrett Specification Roofs. Several of the newer buildings are shown in the accompanying illustrations.

## Free Surety Bond Guarantee

*"Lowest cost per year of service"* is more than a claim for Barrett Specification Roofs—it is a guaranteed fact. A surety company bond positively protects the owner from all expense for upkeep and maintenance for the life of the bond.

This bond is issued at our expense and may be obtained on any Barrett Specification Roof of 50 squares or larger, in towns of 25,000 or more, and in smaller places where our inspection service is available. Our only stipulations are that the roofing contractor shall be approved by us and that The Barrett Specification, *revised April 15, 1920,* shall be strictly followed.

## Important Notice

The Barrett Specification Type "AA" 20-Year Bonded Roof represents the most permanent form of roof-covering it is possible to construct, and while we bond it for twenty years only, we can name many roofs of this type that have been in service for over forty years and are still in good condition.

Where the character of the building does not justify a roof of such extreme length of service, we recommend the Barrett Specification Type "A" Roof bonded for 10 years. Both roofs are built of the same high-grade materials, the only difference being in the quantity used.

*Full details regarding these Bonded Roofs and copies of The Barrett Specification sent free on request.*

The Barrett Company
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MONTREAL TORONTO WINNIPEG VANCOUVER
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## The New Weir Evaporator

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## Embodies Three Important Improvements

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2. The Automatic Feed Regulator.
3. The Special Tube Coupling.

These devices ensure uniform efficiency, simplify working, and lessen costs of upkeep.

They are fully described and illustrated in our New Evaporator Booklet—Send for it.

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MADE IN CANADA

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MONTREAL

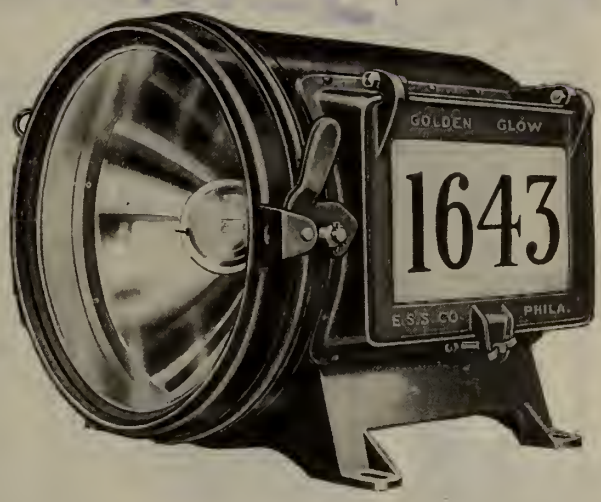
# Keystone Locomotive Headlight Equipment

## greatly reduces maintenance costs

### "Golden Glow" Headlights

with their fourteen inch untarnishing glass reflectors, ground to mathematically exact curvature, light the way more satisfactorily than do other headlights of greater diameter, even when new. Their soft, greenish-yellow "Golden Glow" is far less blinding, yet more penetrating than white light.

Compared with the necessary daily polishing of metal reflectors, the Golden Glow reflector needs only to be wiped free of dust occasionally, or when lamps are replaced. Its initial high efficiency is retained for years.




### Keystone Headlight Switches

"Keystone" Locomotive Headlight Switches are rugged and simple in construction. They offer a satisfactory, durable and easy means for controlling "Golden Glow" or any other type of electric headlight.

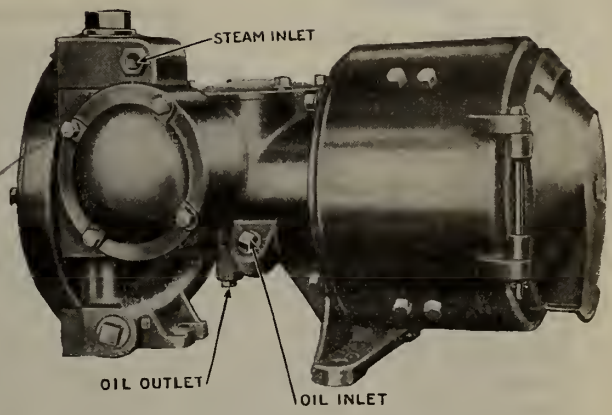
Their simplicity makes inspection and repair a matter of little effort, which has a pronounced effect on their maintenance cost.

### Keystone Turbo-Generators

The Keystone Turbo-Generator is a remarkably simple, compact and efficient combination of an impulse type steam turbine operating at uniform speed on from 100 to 250 pounds steam pressure, directly connected to a generator having a rated capacity of 500 watts at 32 or 115 volts, direct current, and capable of carrying a very considerable overload for long periods.

Steam turbine and generator compartments are entirely separated from the oil compartment, which wholly encloses the governor and ball bearings. These are automatically oiled from a reservoir, which needs filling only once in several months.

The whole machine is designed for the easiest possible inspection and speed and voltage regulation, and lowest maintenance cost.




***Bulletin 166 shows how these advantages are gained. Shall we send you a copy?***

**Made by Electric Service Supplies Co., Philadelphia**

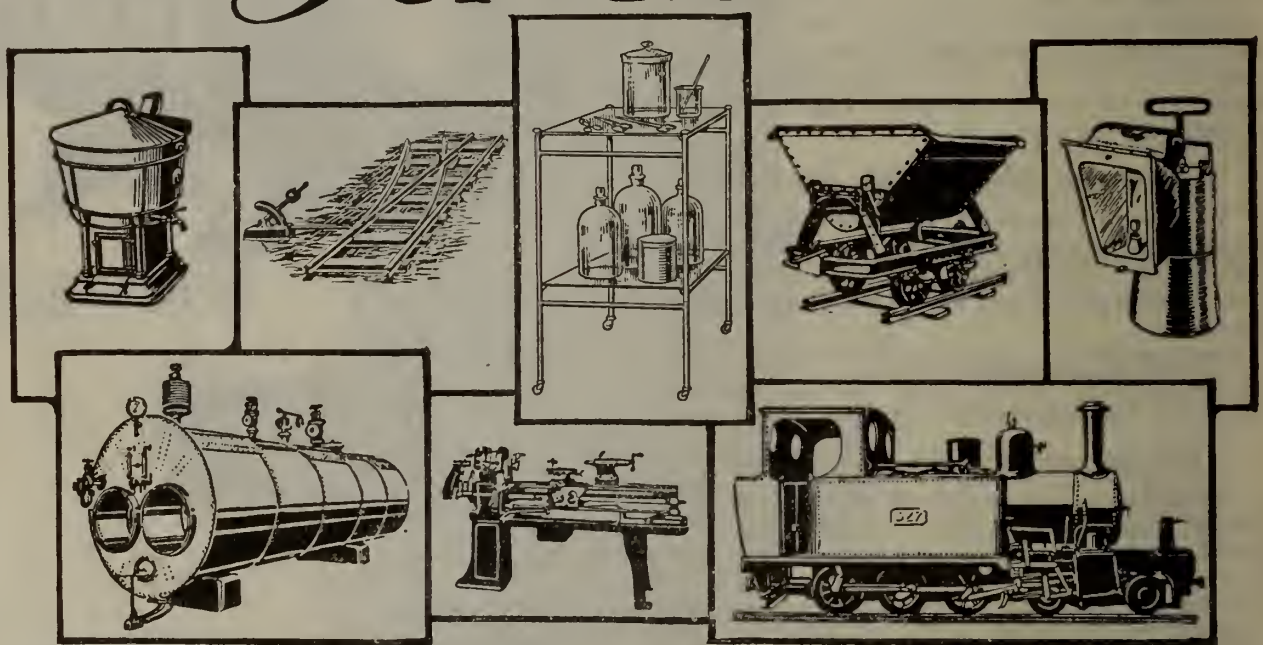
*Canadian Distributors:*

## LYMAN TUBE & SUPPLY CO., Limited

**Montreal Toronto Winnipeg New York**

GR MINISTRY of MUNITIONS

# GOVERNMENT PROPERTY For SALE



The Disposal Board
have

## STOCKS

lying in the United Kingdom and Available for Export
of

## ENGINEERING STORES

| | | |
|---|---|---|
| Ferrous and Non-Ferrous Metals | Contractors' Stores | Agricultural Machinery |
| Plant and Machinery | Electrical Instruments and | Aircraft |
| Steam Engines and Boilers | Machinery | Furniture |
| Factory Stores | Medical Stores | Textiles and Clothing |
| Machine Tools | Chemicals and Explosives | Boots and Leather Equipment |
| Railway Material | Motor Vehicles | Motor Boats, etc., etc. |

Buyers should instruct their representatives in the United Kingdom to communicate with D. B. 8 Canadian Export Department, Ministry of Munitions, Whitehall Place, S.W.

Cable address: "DISPEXPORT, MUNORGIZE, LONDON."

# Half Your Bonding is Done At the O-B Factory

To make your bonding easier, each detail of O-B Arc Weld Bond, each detail of O-B Resistance Welder was planned to save time and trouble at every track joint.

In the O-B Bond this is accomplished by the 90° welding angle, the "steel to steel with steel" welding, the steel sleeve which completely surrounds the copper terminal.

The safety control panel does it on the O-B Welder.

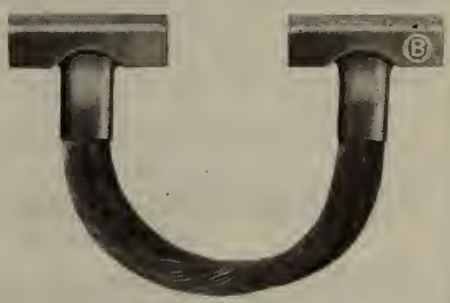
An automatic circuit breaker obeys a push switch in the operator's hand. He controls the machine absolutely by a push of his thumb. He works rapidly—unhandicapped. In case of overload or short circuit the breaker opens automatically.

*Send for "Electric Arc Weld Binding."*

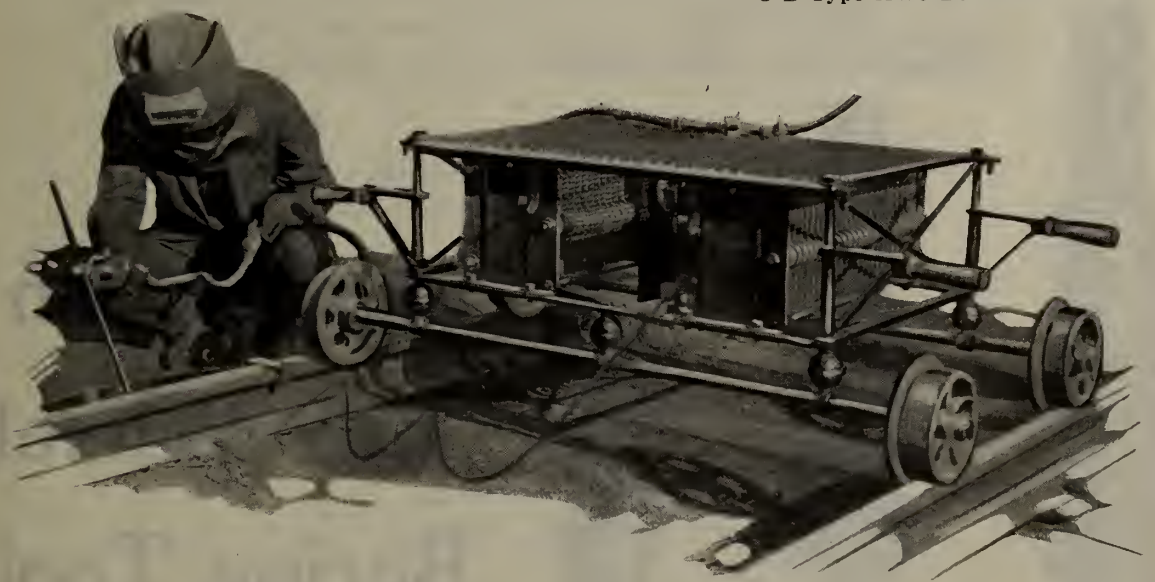
## The Ohio Brass Company

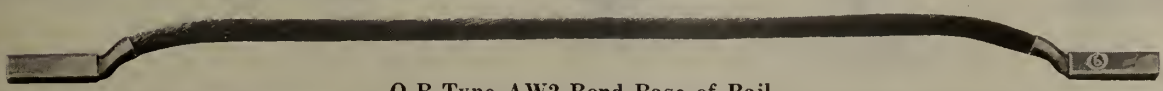
**Mansfield, Ohio**

*Manufacturers—Trolley Materials; Rail Bonds; Car Equipment Materials; High Tension Porcelain Insulators; Third Rail Insulators*



O-B Type AW3 Bond Ball of Rail





O-B Type AW2 Bond Base of Rail

# CAR WHEEL BORING EFFICIENCY

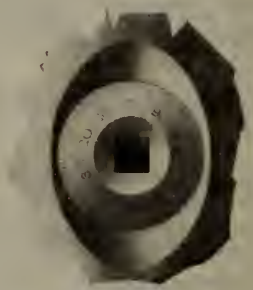
THE gradual installation of Davis Expansion Car Wheel Boring Tools into almost every wheel boring shop, of any note, in the United States, and the universal adoption of the Davis System of Car Wheel boring, tells a story of success based on merit alone. To-day, fully 98% of all car wheels are bored with Davis Expansion Car Wheel Boring Tools—a positive guarantee of their efficiency and economy.

Wheel boring mills equipped with Davis Tools will bore more wheels per day, absolutely accurate and at a 25% saving in costs. Greatest efficiency and economy is possible by the Davis method of boring all wheels to fit the axles, instead of turning down the axles to fit the wheels. On new work, wheels are bored to fit standard gauges and axles are turned to standard sizes to correspond. On repair work all wheels are bored to fit the axles, saving the time and expense of uselessly turning down good axles to fit the wheels. Consider carefully what a saving this practice would effect in your wheel shop.

You can accomplish these results with Davis Expansion Car Wheel Boring Tools, as the cutters are expanded to compensate for wear by a practical micrometer adjusting feature, which insures accurate adjustment to size, in less than a minute.

Let us explain the many advantages of operating your wheel boring mills with these efficient tools. You will not be obligated.

A letter to-day will bring full information.



GRADUATED MICROMETER ADJUSTMENT.

*(Actual Size)*

This graduated micrometer screw controls the travel of a patented double expanding wedge which forces the cutters out, uniformly, as the screw is turned.

## DAVIS BORING TOOL COMPANY

INCORPORATED

**3718-42 Forest Park Blvd., St. Louis, Mo., U.S.A.**

Canadian Agents:

WILLIAMS & WILSON, MONTREAL, QUEBEC.

J. BERTRAM & SONS, DUNDAS, ONT.

SPECIAL "TWO-IN-ONE"

REGULAR "TWO-IN-ONE"

"STANDARD"

# Davis Expansion Car Wheel Boring Tools

**CAN BE APPLIED TO ANY MAKE WHEEL BORING MACHINE**

KILL
LAST AD.

THE selling policy of the Dominion Oxygen Company, Ltd., is of a breadth and flexibility unusual even in this day of progressive industries.

Five modern plants are already provided for in the Company's initial building program and of these, two are already under way at Toronto and Montreal.

When completed, these will distribute, through conveniently located warehouses and service stations, a prompt and never-failing supply of pure oxygen to Canadian users.

A price scale attractive alike to large or small consumers; an improved type of cylinder insuring the greatest gas-content with the lowest freight and handling charges and a liberal loan system, are a few features of interest to Canadian consumers.

These will be backed by a Service System which insures prompt deliveries in any desired quantity.

The Dominion Oxygen Company, Ltd., invites inquiries from interested persons.

DOMINION OXYGEN COMPANY, LTD.
Hillcrest Park
Toronto - Ontario

D-6

# Experience

KILL
LAST ADI

HUNTOON BOLSTER contributes to the safety factor, for the reason that it is stronger than a bolster of cast steel construction.

It is applicable to practically every requirement, for it may be used with either plain or anti-friction type side bearings, and is made for 30-, 40-, or 50-ton freight cars.

It is built up of open hearth rolled steel sections of definite strength.

The compression member is of channel section, and the rectangular tension member is upset or enlarged at the ends, conforming to the shape of the interior face of the channel, terminating in a continuous shoulder, fitting squarely against the compression member. The enlarged portions more than compensate for the metal removed for the rivet holes at the end.

In its design, shearing of rivets is absolutely impossible.

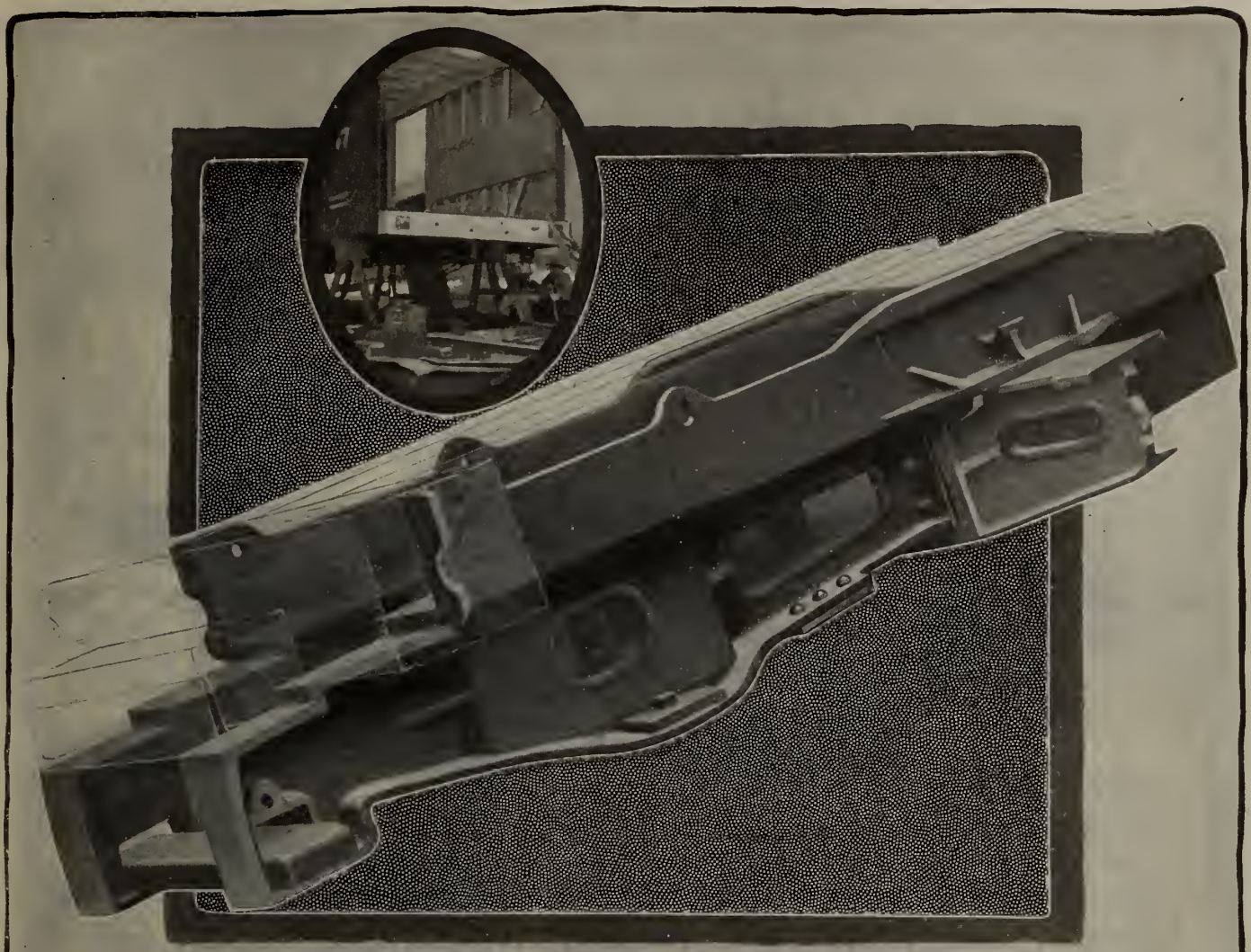
So here is a bolster possessing distinct points of advantage, with a lightness in weight that recommends it for application to either new or old equipment.

**Canadian Representatives: MOORE, CAMERON & HILL, Ltd.**
**284 Beaver Hall Hill, Montreal 431 McIntyre Block, Winnipeg**

## Joliet Railway Supply Co

NORTHWESTERN MALLEABLE IRON CO. PROP.

## Railway Exchange Bldg. CHICAGO



# ECONOMY CAST STEEL DRAFT ARMS

CARS of light design will not stand up when placed in a long train between heavy cars unless they are strengthened along the line of draft.

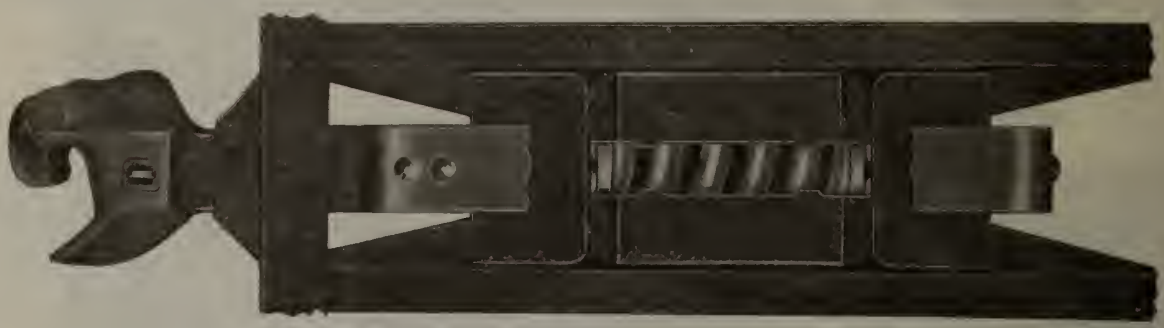
Economy cast steel draft arms provide the necessary strength. They have no bolts or rivets to shear. They butt against the bolster and extend beyond it, thus distributing buffing shocks evenly throughout the underframe.

Economy Arms are in use on one hundred of the leading railways.

**American Steel Foundries**
NEW YORK CHICAGO ST. LOUIS
**International Equipment Co., Ltd.**
MONTREAL QUEBEC CANADA

# Murray Cast Steel Friction Draft Gear

**MADE IN CANADA**



If the superiority of this device has never been apparent to you, it will be upon thorough investigation. For it will reveal that our claims for excellence are based on actual facts.

May be used with any draft attachment.

In use on thousands of cars, including U.S. R.A. standard cars.

**KEYOKE RAILWAY EQUIPMENT CO.**

**Chicago, Ill.**

*Canadian Agents:*

**INTERNATIONAL EQUIPMENT COMPANY, LIMITED**

**Transportation Building, Montreal, Quebec**

# FAIRBANKS-MORSE

## A National Institution of Mechanical Service

IN Canada, as in every country in the world, there are names which, through years of service, have warranted national confidence and good-will. In the Canadian world of mechanical and engineering efficiency there is one name which enjoys the distinction of leadership. Its prestige carries through the entire coast-to-coast chain of sales offices and warehouses into every city, town, and hamlet.

Fairbanks-Morse products mark the farmer, the manufacturer, the artisan, and all users as careful and practical buyers of mechanical goods. The Fairbanks-Morse 100% quality seal is the buying guide for the consumer—the guarantee of satisfaction.

The Canadian Fairbanks-Morse general catalogue is a reference of what is standard in design and practice in mechanical goods. This book lists the largest variety of scales, valves, steam goods, oil engines, pumps, electrical machinery, machine tools, woodworking machinery, transmission appliances, railway contractor's and machine shop supplies ever published in Canada in one book. Your copy will be sent on request.

**The Canadian Fairbanks-Morse Co., Limited**

Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, St. Catharines, Windsor, Winnipeg, Regina, Saskatoon, Calgary, Vancouver, Victoria. 1

## Canada's Departmental House for Mechanical Goods

OCT 22 1920

# C.G.E Pipe Fittings

## Twenty-Four Hour Service

C.G.E. Pipe Fittings are "Made in Canada." We maintain fully equipped Sales Branches from Coast to Coast. Immediate shipments can be, and are, made from Stock.

The above reasons alone are enough to warrant the confidence that electrical dealers and contractors place in C.G.E. Service. When it is taken into consideration that there are ten separate and distinct inspections that C.G.E. Pipe Fittings must pass before they are allowed to be put into stock, it is no wonder these Fittings have such an enviable reputation.

The above features are worth serious consideration when next you order Pipe Fittings.

**Our nearest Sales Branch is at your disposal.**

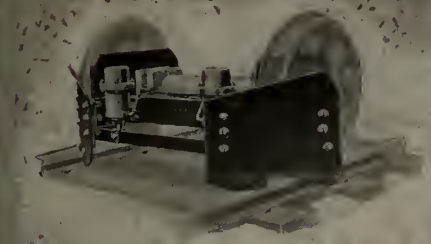
## Canadian General Electric Company, Limited

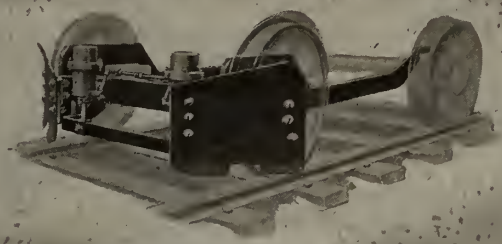
Head Office - TORONTO

**Branch Offices:**

MONTREAL, QUEBEC, SHERBROOKE, HALIFAX, SYDNEY, ST. JOHN, OTTAWA, HAMILTON, LONDON, WINDSOR, COBALT, SOUTH PORCUPINE, WINNIPEG, CALGARY, EDMONTON, NELSON, VANCOUVER, and VICTORIA.

# THIS or





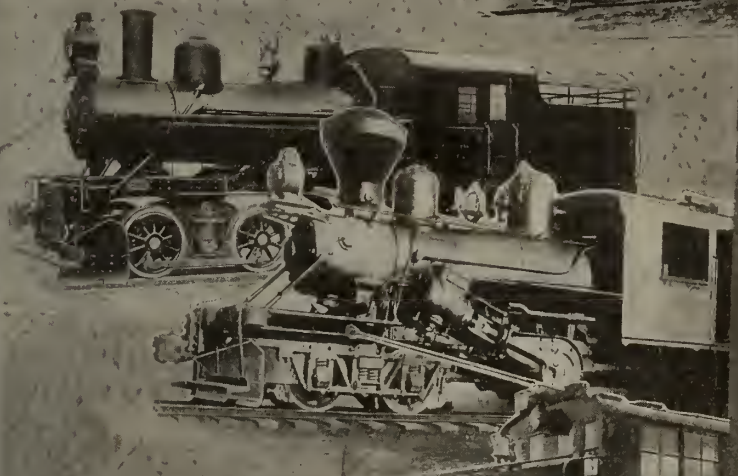
## Ray Snow Flangers

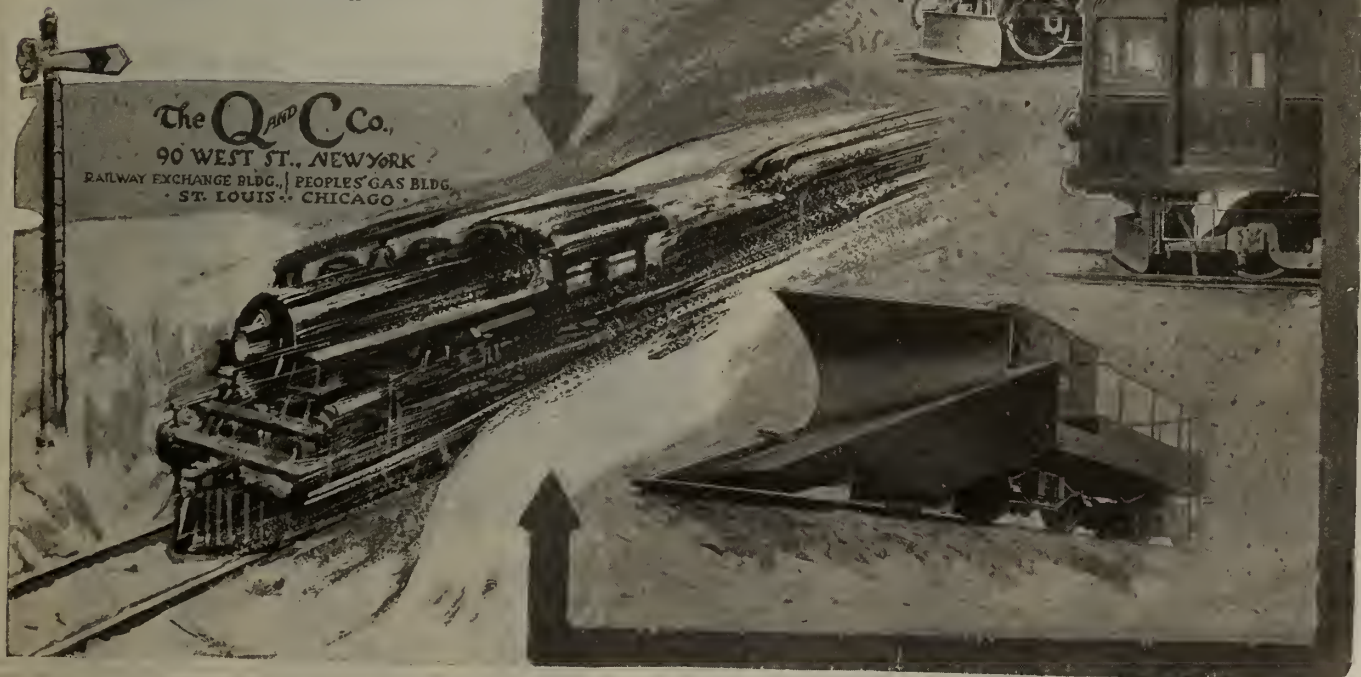
and

## Ray Snow Plows

are applicable to all forms of rolling stock. By placing your orders now prompt deliveries are assured. Full information and prices quoted upon request.

*Made in Canada*





The Q AND C Co.,
90 WEST ST., NEW YORK
RAILWAY EXCHANGE BLDG., ST. LOUIS · PEOPLES GAS BLDG., CHICAGO

# Better Belting with Efficiency "Built In"

Efficiency is a result—in our belting it is the culmination of thousands of experiments and tests over a period of fifty years.

The outstanding factor in creating transmission efficiency in our Dominion Friction Surface Belting is our special friction rubber compound, which gives our belts a pulley-gripping quality that prevents practically all wastage of power through slippage.

## Dominion Friction Surface Belting

will transmit all the power that any belt can be made to transmit, because every ounce of material is carefully tested by our experts to make sure that it is up to our high standard.

This "Built-in-Efficiency" is backed by the service of our belting engineers, who are ready to demonstrate its value without charge or obligation.

Phone or wire our nearest service branch.

CANADIAN CONSOLIDATED RUBBER CO. LIMITED
DOMINION RUBBER SYSTEM AND ASSOCIATED COMPANIES

*Our Dominion Hose, Packing and Industrial Rubber Goods are all the Same High Standard as Dominion Friction Surface Belting.*

## Dominion Rubber System Service Branches

| | | | |
|---|---|---|---|
| Halifax | Toronto | Fort William | Edmonton |
| St. John | Hamilton | Winnipeg | Calgary |
| Quebec | London | Brandon | Lethbridge |
| Montreal | Kitchener | Regina | Vancouver |
| Ottawa | North Bay | Saskatoon | Victoria |

### *BELTING*

Transmission: "Dominion," "Keewatin," "Para."

Conveyor: "Rockproof," "Canadian," "Hiheat."

Elevator: "Dominion," "Rockproof."

Agricultural: "Lumber King," "Star."

Grain Elevator: "Metcalf Standard," "Grain King."

### *HOSE*

Air: "Kushion Kover," "4810 Airtite."

Steam: "Indestructible," "Rockproof," "Para."

Water: "Indestructible," "Kushion Kover."

Suction: "Para," "Star," "Trade."

Garden: "Canadian," "Dominion," "Star."

### *PACKINGS*

Sheet: "Join-Tite," "Star," "Importers."

Rod: "Cabestos," "Valve-Bestos," "Canadian."

Valves: "Montreal," "Commercial," "Canadian."

### *MISCELLANEOUS*

Mats, Matting and Flooring, Plumbers' Specialties, Rubber Covered Rolls, Friction Tape, Splicing Compound, Dredging Sleeves, Hard Rubber Goods, Tubing, Rinex Soles, Catspaw Heels, Jar Rubbers, Moulded Goods.

SUPERIOR GRAPHITE PAINT
It Prevents Rust

KILL
LAST AD

# The Yearly Cost of Protection

In the specification of paint for the protection of steel bridges it is of utmost importance to consider the yearly cost for material and application.

Low initial cost per gallon carries no assurance of low ultimate expenditure. Low price is invariably an admission of low quality, and early failure generally follows. The cost of early repainting must be considered in connection with the initial expenditure.

Superior Graphite Paint has maintained a reputation for dependability over a period of thirty-five years. Its recognized leadership among metal protective paints is your best assurance of maximum durability and lowest ultimate cost.

Superior Graphite Paint can be used without the hazard of experiment. It is one of the Degraco line of dependable paints.

*Colour Cards and Painting Specifications on Request*

**DOMINION PAINT WORKS, LIMITED**
*Makers of*
*Degraco Paints, Varnishes, Enamels.*
WALKERVILLE - - - CANADA

Montreal
Quebec
Toronto

Winnipeg
Sydney
Vancouver

# DEGRACO
## Paints - Varnishes - Enamels

# Fuel Conservation —A Suggestion

## ASKS SHIPPING COMPANIES TO CONSERVE FUEL

### Board Issues No Order But Makes Suggestion

### BUNKERS ONE WAY ONLY

### Coal for Return Voyages Should Be Secured on Other Side

By Canadian Press.

Ottawa, July 29.—While no order will be issued at present prohibiting the bunkering of ships at Atlantic ports with United States coal in o der to conserve the supplies of ported coal, a step that was ered possible a short ti Railway Commission number of sugges ping compani s, whi

The necessity of conserving Canada's coal supply is urgent, and is having the attention of all Ship Owners.

An investigation of the use of highly superheated steam will disclose that superheating is a practical method whereby fuel can be conserved.

To-day over 2,000 ships are equipped with fire tube superheaters, and obtain average fuel savings of 15%.

A ship which cannot profitably remain in service on account of its cost of operation may be placed in the economical class by the application of fire tube superheaters.

Fire tube superheaters can be installed while the ship is in port without loss of revenue service. Fire tube superheaters are your opportunity to conserve your fuel.

Our engineers are at your service.

Further information and bulletins on request.

## The Superheater Co., Limited

Transportation Building, Montreal

WORKS AT SHERBROOKE, QUEBEC

*Designing Engineers and Manufacturers of Superheaters and Pipe Coils for All Classes of Service.*

MADE IN CANADA

# Another Important Railroad
## adopts
# DUPLEX STOKER-fired
## Locomotives

H. C. Manchester, Supt. M. P. & E. S. S. Riegel, Mech. Eng'r.

Ten of the above illustrated Mikado type freight locomotives, just received from the Builders, are now being put into fast freight service on the Lackawanna Railroad between the important points of Scranton and Jersey City.

The addition of the Lackawanna to the Stoker-fired locomotive list brings the total of railroads now using Duplex Stokers up to sixty-seven.

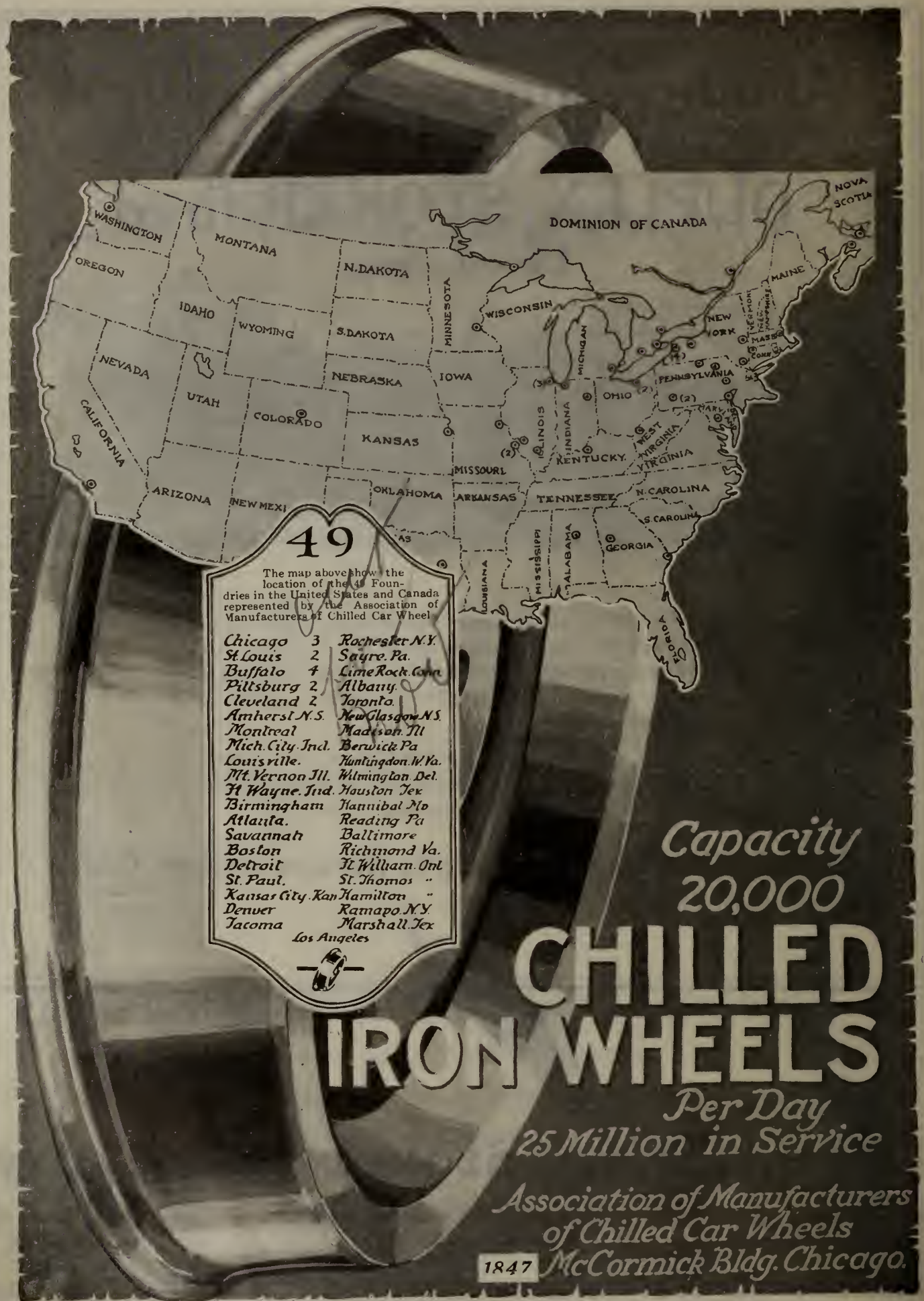
***Over 4,400 of our Stokers in Service and on Order***

# Locomotive Stoker Company

**Railway Exchange**
**Chicago, Ill.**

**Main Office and Works**
**Pittsburgh, Pa.**

**50 Church St.**
**New York**


WASHINGTON
OREGON
MONTANA
IDAHO
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UTAH
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ARIZONA
NEW MEXI
N.DAKOTA
S.DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
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MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
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KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
S.CAROLINA
N.CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
MASS
CONN
DOMINION OF CANADA
NOVA SCOTIA
49
The map above shows the location of the 49 Foundries in the United States and Canada represented by the Association of Manufacturers of Chilled Car Wheels
Chicago 3
St Louis 2
Buffalo 4
Pittsburg 2
Cleveland 2
Amherst N.S.
Montreal
Mich. City. Ind.
Louisville.
Mt. Vernon Ill.
Ft Wayne. Ind.
Birmingham
Atlanta.
Savannah
Boston
Detroit
St. Paul.
Kansas City. Kan
Denver
Tacoma
Los Angeles
Rochester N.Y.
Sayre. Pa.
Lime Rock. Conn
Albany.
Toronto.
New Glasgow N.S.
Madison. Ill
Berwick Pa
Huntingdon. W.Va.
Wilmington. Del.
Houston Tex
Hannibal Mo
Reading Pa
Baltimore
Richmond Va.
Ft William. Ont
St. Thomas "
Hamilton "
Ramapo N.Y.
Marshall. Tex
Capacity
20,000
CHILLED
IRON WHEELS
Per Day
25 Million in Service
Association of Manufacturers
of Chilled Car Wheels
McCormick Bldg. Chicago.
1847

# CANADIAN VICKERS LIMITED

## Shipbuilders, Engineers, Boilermakers and Repairers

## MONTREAL, CANADA

25,000-TON FLOATING DOCK, 600 FEET LONG
Operated in One or Two Sections.

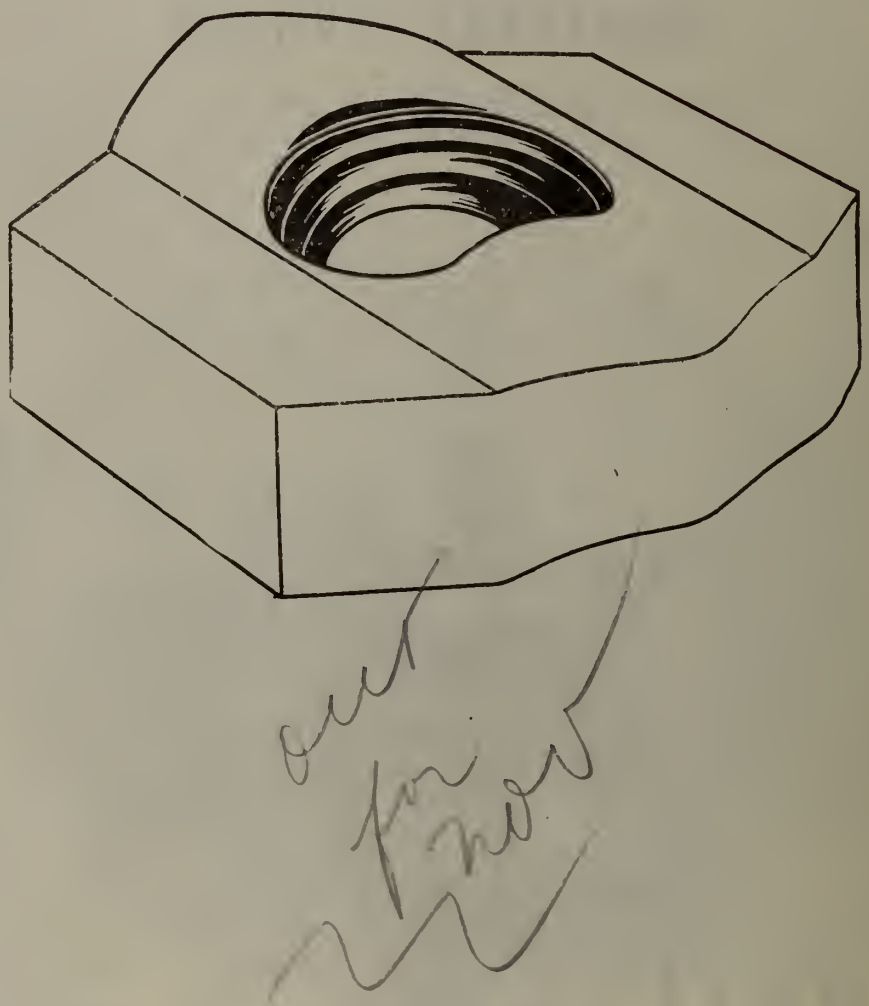
S.S. "ALSACE"
Built for Cie Francaise d'Armement et d'Importation
de Nitrate de Soude, Paris, France

Makers Under License Best British Designs:—
WINCHES, WINDLASSES, ASH HOISTS,
STEERING GEARS, TELEMOTORS

*Immediate Deliveries from Stock*

*Cables:*
VICKERS, MONTREAL

"He Also Serves Who Only Stands and Waits"



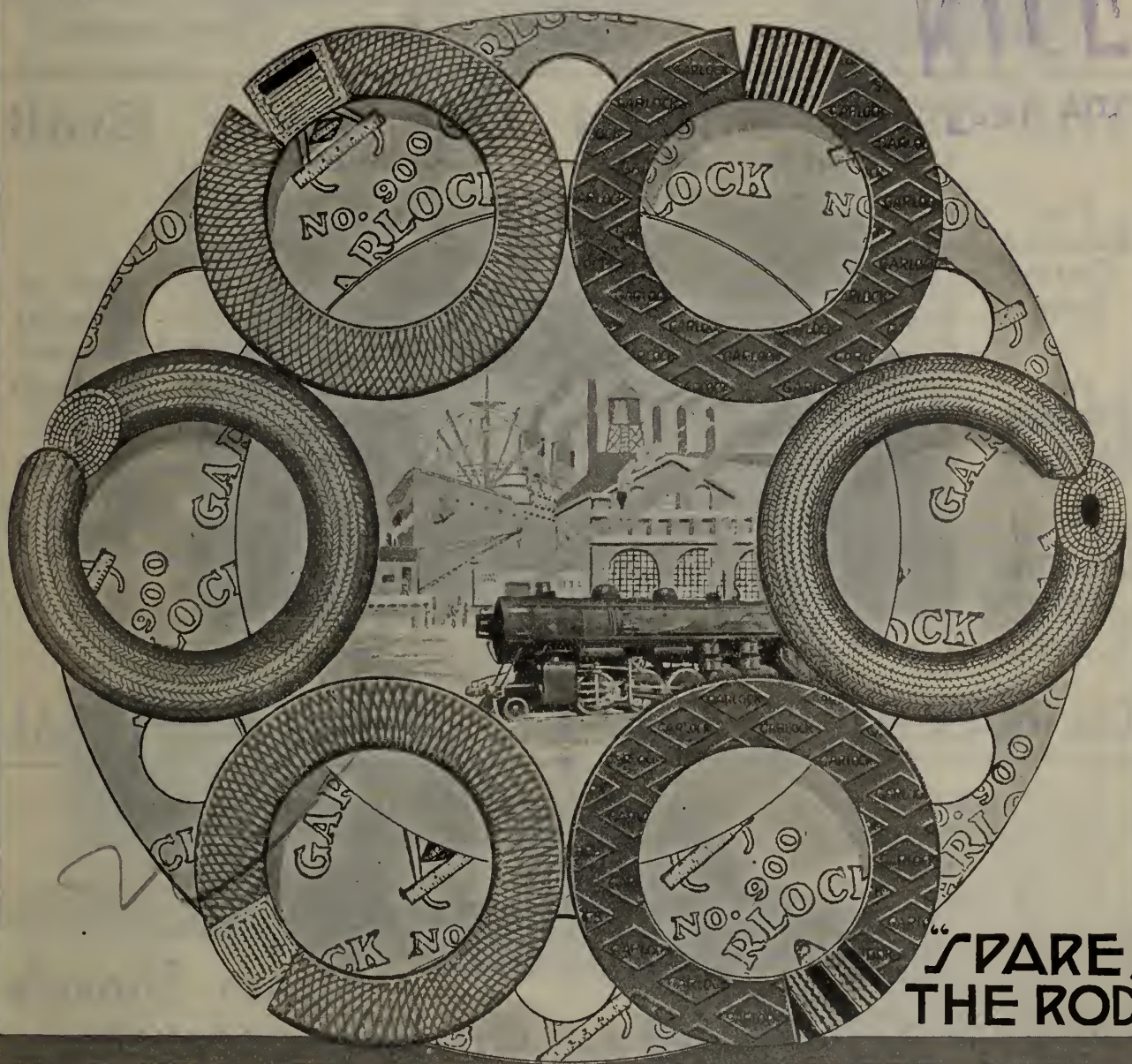
There is nothing spectacular about the Grip Nut, except to the man who thinks. To such a man the silent, evercontinuing efficiency of the Grip Nut is something most spectacular.

# IN ENGINEERING CIRCLES

It is the operating engineer who most appreciates reliability.

Hours spent renewing rod packing and replacing gaskets, often in inaccessible places, have proved to him the fact that quality is the main consideration when purchasing packing. Added to this is the saving due to minimum rod friction and leakless joints.

On your next order specify GARLOCK, the packing of world-wide reputation and known reliability.




# GARLOCK PACKINGS

**The Garlock Packing Company**
HAMILTON, ONT.

Branches:

Montreal, Que. Toronto, Ont. Winnipeg, Man. Calgary, Alta. St. John, N.B. Vancouver, B.C.

The Strength and Toughness of

# "DOMINION" WIRE ROPE

Make it DURABLE,
SAFE and ECONOMICAL

**THE DOMINION WIRE ROPE CO., LIMITED**

Head Office: MONTREAL Branches: TORONTO, WINNIPEG

# The Best Ballast Car Ever Built

**Canadian National Railways Standard Ballast Car**

**For Ballasting Center Dump**

**For Ballasting Side Dump**

**For Coal or General Service**

**Built of Materials Obtained in Canada**

**Built to any size or Capacity**

*Write for Booklet No. 19 for further information.*

—DESIGNED, PATENTED AND BUILT IN CANADA—

## The HART-OTIS CAR CO., Limited, MONTREAL

We carry only goods of the Highest grade, quote Lowest prices, and GIVE BEST OF SERVICE

## "MARION" Steam Shovels

DITCHERS—UNLOADERS

## "Industrial Works" Pile Drivers and Cranes

Branch:
108 Mail Building
TORONTO

**F·H·Hopkins & Co. Limited**

Head Office:
MONTREAL

# FARLOW

The Perfect Harness

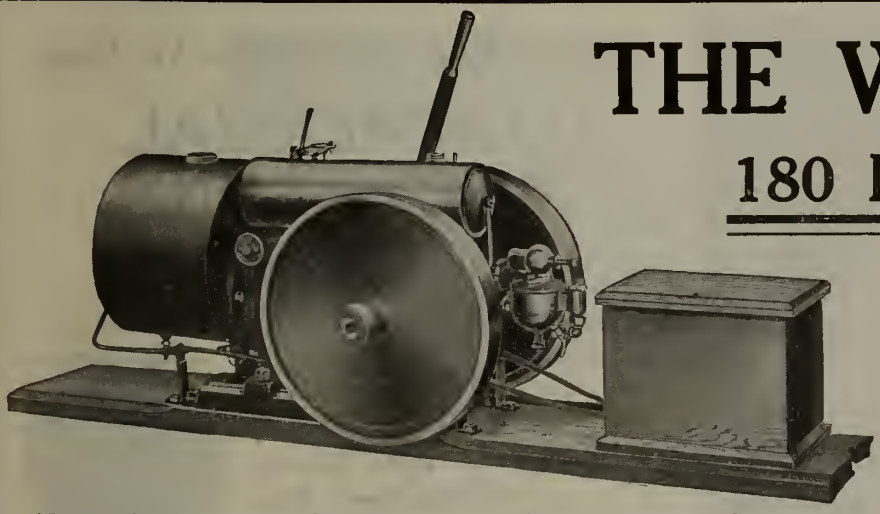
## DRAFT ATTACHMENT

Furnishes the strongest connection between the draft gear and car underframe.

Service buffing and pulling shocks are transmitted to the car frame at a number of points, preventing distortion of sills, breakage of friction barrels or springs, and consequent necessity for repairs.

## The T. H. Symington Company

**New York** **Works at Rochester** **Chicago**



# THE WOOLERY

## 180 Lbs. 5 H. P.

### SIX EXCLUSIVE POINTS OF SUPERIORITY

No one feature ever made a successful engine regardless of the excellence of that one. Scientific design in combination with our various patented features places the Woolery in the lead as, a mechanically superior engine. New enough to be highly improved—old enough to be thoroughly tested.

*HERE ARE THE BIG SIX*

- PATENTED, SELF-ADJUSTING SLIDING BASE
- WELDED STEEL WATER JACKET—FROST PROOF
- UNIT SPEED CONTROL—ONE LEVER FOR ALL SPEEDS
- HOLLOW CRANK SHAFT, STRONG YET LIGHT
- IMPROVED SHIFTING LEVER—PRESS BUTTON TYPE
- LONG STROKE GIVING HIGH TORQUE AND LONG LIFE

YOU WANT light weight, high power, low gas consumption, durability, easy operation, dependability, A-1 service 365 days in the year and you get them all when you get a Woolery. Write for details.

*5 and 10 H. P. Reversible Railway Engines.* *Guaranteed Four Years.*

**Canadian Agency—Dominion Equipment & Supply Co., Winnipeg, Man.**

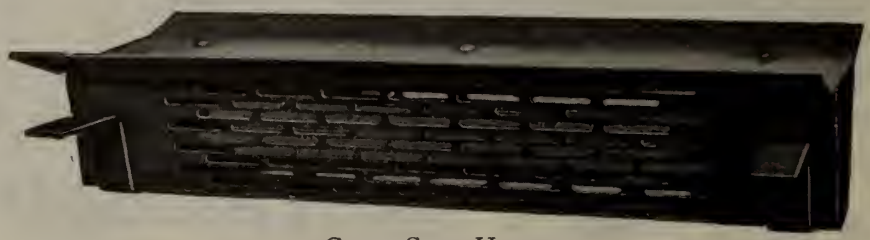
## WOOLERY MACHINE CO., Minneapolis, Minn., U.S.A.

*MANUFACTURERS*

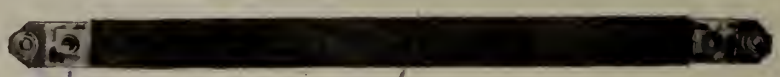
# H. & W. Electric Car Heaters

The Simplest, Lightest, Most Durable Electric Heaters
Ever Made for Railway Cars

TYPES
Vestibule
Cross Seat
Panel
Truss
Plank



Cross Seat Heater



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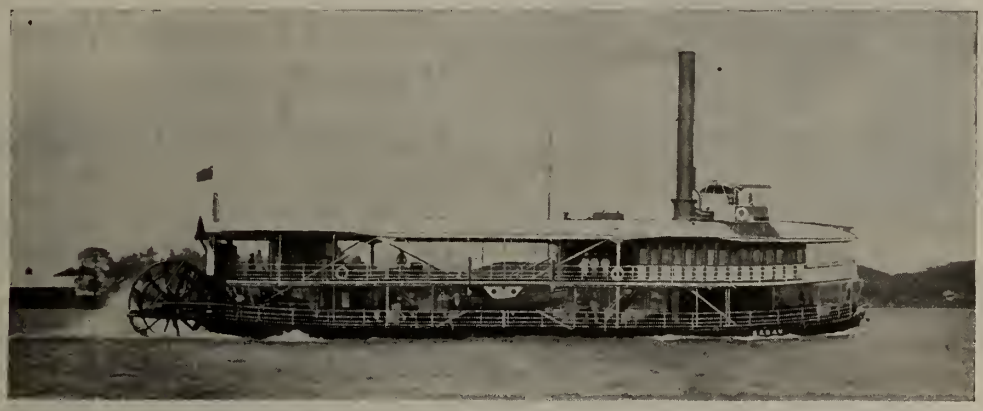

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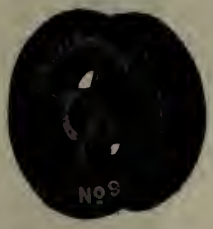


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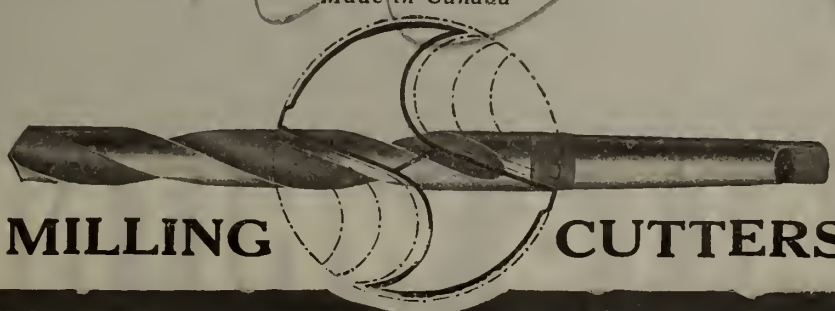

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# Canadian Railway and Marine World

October, 1920

## Snow Fighting Equipment.

By W. H. Winterrowd, Chief Mechanical Engineer, Canadian Pacific Railway.

The first part of this paper was published in Canadian Railway and Marine World for September.

Spreader Ploughs.—Figs. 17, 18 and 19 show what is commonly known as a snow spreader or dozer. The front of the car is V-shaped. A low V-shaped plough, with drop wings, is attached to the front. When these wings are dropped into working position they form a continuation of the plough mold plates. The simplest form of spreader consists of a flat car with wings attached to each side, the wings being operated from the floor of the car by means of levers. The illustrations show a house car spreader. The drop wings are raised and lowered by air cylinders. The side wings are supported by jib cranes, hinged to the side of the car, and are held in working position by means of heavy bar braces. On some ploughs these braces are moved into working position by means of air cylinders. Some types of spreaders are equipped with drag wings hinged to the back corners, as shown in fig. 17. This type of spreader is used by some roads to widen cuts after a plain push plough has passed. When widening cuts these wings are in such position that they serve as snowbank cutters, and snow is carried in toward the center of the track, from which it can be thrown by either a wedge plough or a rotary. When equipped with drag wings these spreaders are often called cut wideners. The large side wings when extended to their full width have a total spread of approximately 30 ft. The snow is first cut by the V-shaped plough and, after it is thrown or pushed to one side, the long wings push it out still further. This type of plough is frequently used for cleaning up yards. Some roads utilize their ballast spreaders for this purpose.

Machine Ploughs. — On roads which have to fight deep drifts, snow slides, or other conditions beyond the capacity of push ploughs, the rotary machine plough is used, and to date is the most effective instrument that has been developed for the purpose. These ploughs can work their way through deep cuts and slides where it would be impossible for any type of push plough to lift the snow and, in addition, can throw the snow clear of the track. If the snow is much higher than the top of the casing it is only necessary to loosen it and throw it down in front of the plough in order to have it picked up and thrown clear of the track.

A rotary plough, invented in 1869 by J. W. Elliott, consisted of a wheel having four flat arms and which was supported on a horizontal shaft, rotating in line with the track. The wheel was enclosed in a casing, the front of which was shaped to collect the snow and the rear of which was shaped cylindrically.

The first machine plough built was known as the Hawley plough, and was exhibited at the Philadelphia Centennial Exhibition in 1876. The plough was equipped with a large vertical conveyor screw supported in a rectangular casing, the front of which was shaped to collect the snow. This plough was tested on what was then the Teeswater Division, Toronto, Grey & Bruce Ry., now a part of the C.P.R. This plough was an absolute failure, as the elevator screw revolved without throwing any snow.

The next development was known as the Marshall plough, a full size working model of which was tried either on the Chicago, Milwaukee & St. Paul Rd. or the Chicago & North Western Rd., in the northwestern part of Iowa, in the latter part of the 70's. The wheel, which revolved on a shaft at right angles to the center line of the track, was a large wooden disc on which were fastened a number of radiating blades. This plough was also a failure.

Another attempt to construct a successful machine plough was known as the Blake machine snow plough, and it embodied a rotary principle. It was tried on the Winona & St. Peter Division, Chicago & North Western Rd., in the early 80's, and was also an absolute failure.

A later attempt to develop a machine plough resulted in what was known as the Kryger steam snow shovel. In some ways this plough looked very much like a modern ditching machine. Buckets were placed on an endless conveyor and these buckets were supposed to pick up the snow and convey it up and back to a point where it could be automatically thrown clear of the track by a revolving wheel. This machine was built at the Minneapolis, St. Paul and Sault Ste. Marie Ry. Minneapolis shop, in 1889 or 1890, but was never tried in the snow.

The Cox machine snow plough, which was never built, was illustrated in several of the U.S. railway journals in the early 90's, and unsuccessful efforts were made to organize a company to build it.

Mr. Elliott was the original inventor of the rotary principle. His invention

**Fig. 31. Canadian Pacific Railway Rotary Snow Plough, built in 1911.**

was improved by Orange Jull, who applied a knife or cutting wheel, fig. 20, in front of the Elliott wheel, fig. 21. In 1883 the Leslie Brothers built the first rotary embodying the Jull modification. The fan wheel was mounted on a hollow shaft, in which revolved a solid shaft supporting the knife wheel. The fan and cutting wheels were revolved in opposite directions by means of a gear system. During the winter of 1883-84, the C.P.R. gave this model, fig. 22, a trial at Parkdale, Ont. This preliminary trial, in which snow and ice were thrown over 300 ft., demonstrated the practicability of removing snow with a revolving wheel. It, however, also indicated that the plough should be constructed so that snow could be thrown to either side of the track and that a flanger was necessary to prevent derailment in hard snow and ice and to leave a satisfactory rail after passing.

To overcome these objections the Leslie Brothers developed a wheel with manually reversible knives which could be changed in position to enable them to cut in either direction. They also applied a movable hood to the cylindrical portion of the casing through which snow could be thrown to either side of the track. In addition they designed an ice cutter, and a flanger, which were applied to the front truck of the plough. The ice cutters, one for each rail, were fastened to the front of the truck. The part of the cutter which dropped down inside of and about 2 in. below the rail head was shaped like a planer too. The part of the cutter above the rail was shaped like the blade in a wood plane, and in service position came within ½ in. of the top of the rail head. Two flangers, shaped very much like the mould boards of an ordinary farm plough, were fastened to the rear of the truck. These picked up the ice removed by the cutters and put it in the corner of the cut made by the rotary casing. The cutters and flangers could be either raised or lowered simultaneously by air.

A plough containing these improvements was built for them by the Cooke Locomotive Works, of Paterson, N.J. This plough was put in service on the Chicago & North Western Ry. during the winter of 1885-86, fig. 23. It is very interesting to note that the engines of this plough were equipped with Walschaert valve gear. One difficulty, however, was experienced. The friction caused by the snow passing between the knife wheel and the fan wheel absorbed more power than that required to cut and throw away the snow. The principle of opposite revolving wheels was then abandoned and the Leslie Brothers designed a single fan wheel with adjustable cutting edges. These cutting knives were attached directly to the wheel and automatically reversed their position as

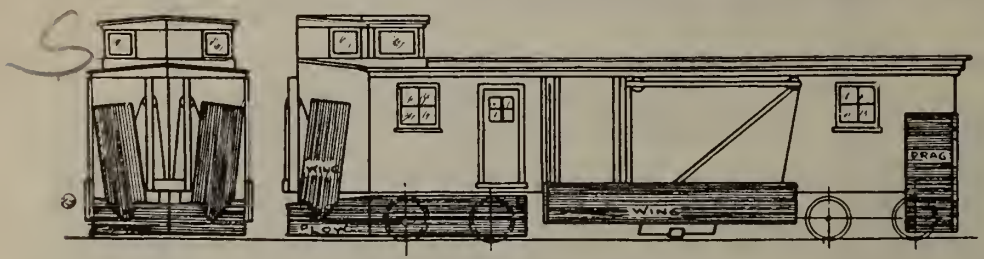


Fig. 17. Snow Spreader or Dozer.

Fig. 18. Snow Spreader.

Fig. 19. Snow Spreader.

Fig. 20. Jull Cutting Wheel, for Rotary Snow Plough.

Fig. 21. Elliott Rotary Fan Wheel, for Rotary Snow Plough.

the direction of rotation was changed. The Cooke Locomotive Works rebuilt the plough, embodying these improvements, had been able to proceed. J. S. Leslie personally operated the plough during the trial. The operation of the "rotary"

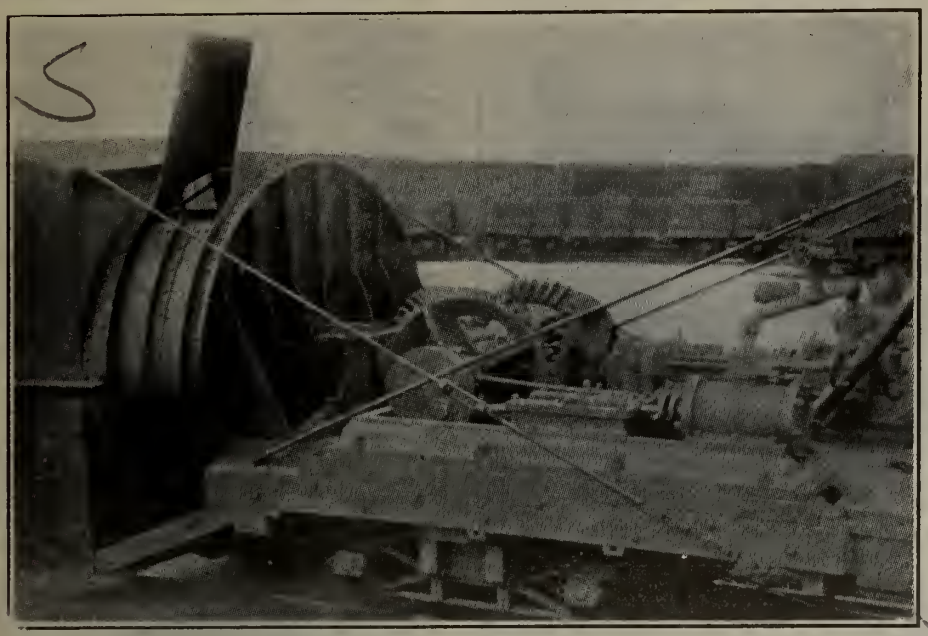

Fig. 22. Leslie Bros.' Model Rotary Snow Plough, tried in C.P.R. Parkdale yards, Toronto, in 1883-84.

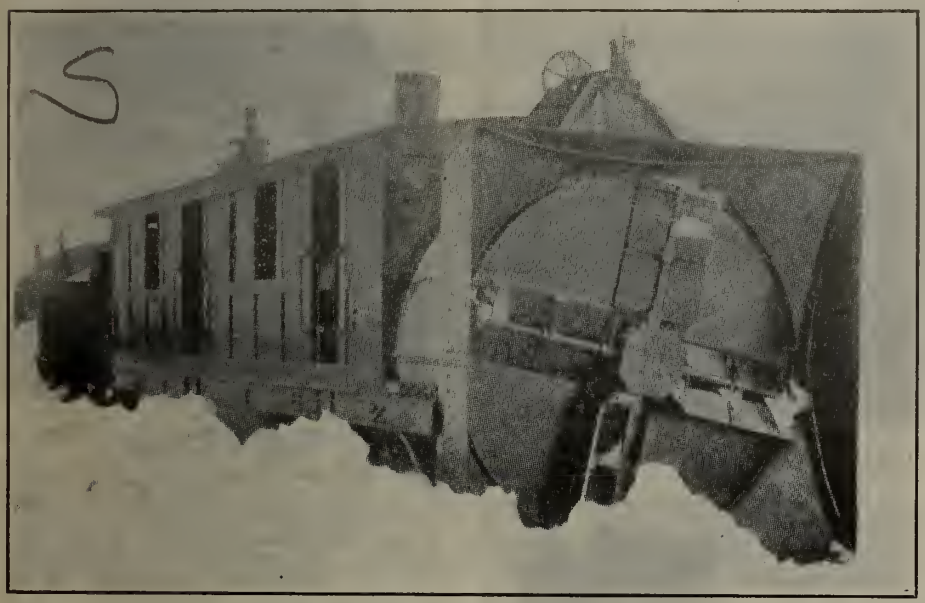

Fig. 23. Leslie Bros.' Rotary Snow Plough, 1886.

Fig. 24. Improved Leslie Bros.' Rotary Snow Plough, as rebuilt by Cooke Locomotive Works.

fig. 24, and during the winter of 1886-87, it was put into service on the Union Pacific Rd., doing particularly good work in opening up one 70-mile branch which had been blocked for some time and through which no ploughs of other types was so successful that the railway company not only purchased it, but three others in addition.

In Canada, in 1888, the C.P.R., through the Polson Iron Works Co., of Toronto, built eight of these ploughs in its Montreal shops, applying a fan wheel which had been still further improved by the Leslie Brothers. This wheel is shown in fig. 25. Fig. 26 shows a plough with the perfected Leslie wheel. The ice cutter and flanger can be seen very well in this illustration.

In 1889, Orange Jull devised a centrifugal excavator which was first put in service on the Union Pacific Rd. during the winter of the same year. Fig. 27 shows a plough of this type. This excavator was intended to remove snow by means of a cone shaped screw conveyor. The screw was built up of plate and supported on a shaft. It was not only set diagonally across the track, but inclined so that the nose pointed down toward the right hand rail. The shaft was supported by two bearings, the front one being located in the bottom right hand corner of the hood; the back one in the left hand corner. The screw was made up of four spiral blades of ½ in. steel plate. The action of the excavator was similar to that of an auger, the snow being carried back and up through an opening in the top of the hood. The screw was revolved at from 250 to 300

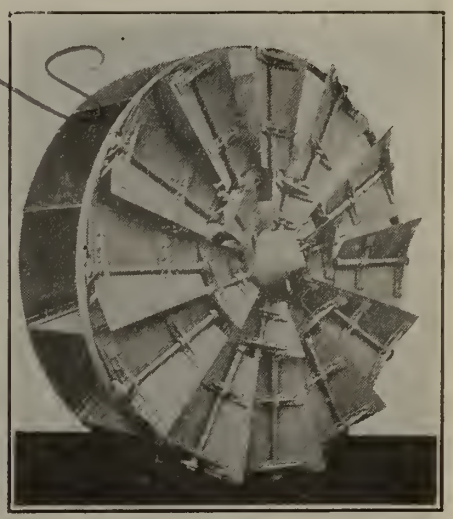

Fig. 25. Improved Fan Type Wheel, for Rotary Snow Plough.

revolutions per minute. The Jull plough was unsuccessful. The screw conveyor filled up solid with snow and ice; the spiral cutter was easily damaged by rocks and ice; the screw also had a tendency to raise the front of the plough, resulting in derailment.

During 1889, another snow plough, called the Cyclone, was brought out and put into service on the Central Pacific Rd., now a part of the Southern Pacific System. This plough, like the Jull excavator, had a revolving auger, with a fan wheel placed behind it to remove the snow. The fan wheel and auger were mounted on the same shaft, and driven by two powerful engines. This plough was also unsuccessful.

Although there has been considerable development, the general arrangement of the modern rotary is very similar to that of the improved Leslie ploughs. As development progressed, the ploughs became heavier and were made more powerful. The size of the cutting wheels has increased to such an extent that on the heaviest and most modern ploughs the knives will cut through small trees and successfully open up snow slides containing a very large proportion of dirt, rock and gravel.

The first rotary ploughs with the improved Leslie wheel were equipped with

a 1 7in. diameter by 24 in. stroke 2 cylinder engine. Steam was supplied by a locomotive type boiler, having 1,259 sq. ft. of heating surface and carrying 180 lb. pressure. The cutting wheel was supported by an 8½ in. diameter shaft geared to the engines. The shaft was supported in a main bearing 34 in. long. These snow ploughs, as well as many other early rotaries, were equipped with a wheel of the fan type, illustrated in fig. 25. The back of this wheel consisted of steel plate, to which the fan blades, or partitions, were secured. The fronts of the partitions were supported to heavy inner and outer rings. The reversible cutters were supported by trunnions riveted to these rings. When the plough was in operation the revolving knives cut the snow and delivered it into the space between the partitions. The snow was then carried around the casing until the top opening was reached, through which it was thrown in a straight line by centrifugal force. Fig. 28 shows how these cutting knives were supported and how they assumed a cutting position, no matter in which direction the wheel revolved. In light and dry snow these wheels were satisfactory, but in heavy work their construction proved inadequate. In wet and heavy snow the partition and cutting plates buckled and the supporting rings became distorted. This caused the knives to fail and the wheel to jam in the casing. These troubles were overcome by heavier construction.

This fan type wheel is still in service on very many railways. It is the opinion of most users, an opinion endorsed by J. S. Leslie, that a well constructed, heavily built, fan type wheel is the most efficient snow remover that has yet been devised. On these ploughs the boiler, the engines, the main shaft and gears were supported on an underframe the sides of which were steel channels. At the front these side members were tied together by a very large casting which formed the bed for the main wheel shaft and the engine shaft bearings. Back of this casting two sills extended to the rear end sill. A wooden cab protected the engines and boiler. The plough, without the tender, weighed 125,000 lb.

Fig. 26. Leslie Bros. Rotary Snow Plough, with Ice Cutters and Flangers.

Fig. 27. Jull Centrifugal Snow Excavator.

Fig. 30. Boiler and Machine Arrangement of Rotary Snow Plough, built by American Locomotive Company.

Fig. 29. Leslie Bros.' Scoop Type Wheel, for Rotary Snow Plough.

The Leslie Brothers also developed the scoop type of wheel shown in fig. 29. Mr. J. S. Leslie states that this wheel was developed to handle the soft, fluffy, wet snow found on the Pacific slope near the citrus belt. Such snow had a tendency to adhere to and clog the partitions of the fan type wheel. Reference to the figure shows that the wheel is composed of 10 cone shaped radially placed scoops, the backs of which are fastened to a steel plate. The surface of these scoops is smooth to prevent snow from adhering. Each scoop is open its entire length on the front side. A cutting knife is hinged on each side of the opening. These knives adjust themselves automatically into cutting position. The knives on the adjacent edges of each scoop are connected by links so that when one knife is cutting snow the other knife is depressed to afford the necessary clearance.

With the exception of special ploughs, the general construction of the modern

rotary has not changed greatly. The cutting wheels have been increased to 11 ft. in diameter; the capacity of the boiler and power of the engines have been increased; the original cast iron beveled gear drive has been changed, and two bevel pinions of steel with cut teeth and supported on independent engine shafts are used. The cutting knives have been made heavier and of cast steel. The strength of the surrounding casing has been increased at the cutting edges and cut wideners have been added. Fig. 30 shows a plough of this type built by the American Locomotive Co. Fig. 31 shows a plough built for the C.P.R. in 1911. This figure shows hinged cut wideners in working position. When not in use these cut wideners are folded back fla against the sides of the casing, the supporting rods being removed.

This article will be continued in Canadian Railway and Marine World's next issue.

# Increases Authorized in Railway Freight and Passenger Rates.

Full particulars of the two applications made to the Board of Railway Commissioners by the steam railway companies for authority to advance freight and passenger rates, etc., were given in Canadian Railway and Marine World for August, pg. 434, and September, pg. 491.

**The Chief Commissioner's Judgment.**

The Chief Commissioner, Board of Railway Commissioners, Hon. F. B. Carvell, K.C., gave the following judgment on Sept. 6. Re application of the Railway Association of Canada, on behalf of the railway companies members thereof, and of all other railway companies within the Board's jurisdiction, for authority to make a general advance of 30% in the tolls charged for the carrying of freight by the said companies. This is an application made by the Railway Association of Canada on behalf of all the railways under the Board's jurisdiction, and consisted, first of a general application for a 30% increase in all railway freight rates. Before the hearing, and as a result of the decision of what is known as the Chicago Wage Award, by which substantial increases were given to all railway employes in the United States, dating back to May 1 last, a supplementary application was made asking for a further increase of 10% in all freight rates; 20% in passenger fares; 50% in sleeping and parlor car rates; 40% in milk rates, and 20% in excess baggage rates.

At the hearing representatives of the different railways filed statements, showing, at great length, their respective financial conditions for some years past; all showing an increase of business, with a very substantial increase in operating ratio, which in other words, means the number of cents which a railway must expend in operating its road in order to earn one dollar, which was alleged by counsel for the Railway Association, as the surest test of the financial condition of any railway, and, unfortunately, with the exception of the Canadian Pacific Ry., which was unsatisfactory, practically all the other roads showed that it was costing as much, or more, to operate them than they were receiving; and the term "operating ratio" does not take into account anything in the way of fixed charges or dividends. The C.P.R. statement shows the following for the past four calendar years:—

| Year. | Operating Net earnings. | Operating ratio. |
|---|---|---|
| 1916 | $50,476,499 | 63.87 |
| 1917 | 46,546,018 | 70.01 |
| 1918 | 34,502,387 | 78.16 |
| 1919 | 32,933,036 | 81.39 |

while for the six months ended June 30, 1920, its operating ratio had jumped to 87.58%; and in the report for July just filed with the Board, excluding taxes and including increased wages, it had increased to 91.43%.

The operating ratio of the Grand Trunk Ry. for the year ended Dec. 31, 1919, was 87.43%, and for the 6 months ended June 30, 1920, was 99.97%. For the Canadian Northern Rys. System, not including the Intercolonial or National Transcontinental Rys., the operating ratio for the year ended Dec. 31, 1919, was 112.08%, and for the 12 months ended May 31, 1920, was 117.61%. According to estimates filed with the Board, the result for 1920, if increased wages were granted, as hereinbefore referred to, and no increase in the traffic rates, the operating ratio would be 134.23%. If the wage increase were granted as from May 1, 1920, and the full rate increases from Sept. 1, 1920, the operating ratio would be 119.59%, and the estimated result of operations for 12 months on the 1920 basis, with both wage and rate increases granted, would still leave an operating ratio of 105.01%.

All the counsel representing the opposing interests based their case upon the financial statement of the C.P.R., and practically all the evidence, outside of the financial statements above referred to, dealt only with that railway, and therefore, in arriving at a judgment, I am forced to refer almost exclusively to the condition of the C.P.R. in order to arrive at proper conclusions. Mr. Moule, Assistant Comptroller, C.P.R., stated that the company's reserves could be placed at $317,000,000, but of this amount $160,000,000 would only be available after the lands were sold. He also stated that at present the "liquid assets" consisted of $53,000,000 in cash and accounts collectable, amounting to about $16,000,000, making a total of $69,000,000, of which about $37,000,000 was represented by Imperial and Dominion Government securities. As against this, he stated that there were accounts which had to be paid, amounting to $27,000,000, and also alleged that within four years $52,000,000 of actual cash must be provided for the retirement of notes maturing in Mar., 1924, although by that date the cash fund should be augmented to a considerable extent by the receipts from land sales, which are specially allocated to meet these obligations.

Notwithstanding these facts, it was contended by G. R. Geary, counsel for the City of Toronto, and D'Arcy Scott, for the Saskatchewan Government and the National Dairy Council, that no matter what the loss might be in operation, any deficit required for the payment of dividends should be taken from the reserves, so long as the same lasted, instead of increasing the rates as applied for.

Mr. McMaster, counsel for the Canadian Manufacturers' Association, as I understand him, contended that the rates should be so adjusted that the C.P.R. would be able to pay its dividends without drawing upon its reserves, but nothing further. Mr. Symington, counsel for the Province of Manitoba, was not quite so general, and Mr. Coyne, representing the amalgamated boards of trade of the three prairie provinces, would draw upon the reserves to some extent if necessary for the payment of dividends. I am unable to agree with any of these contentions, and much less with that of Mr. Geary, because, should his doctrine be followed to its logical conclusion, in a very short time the cash reserves would be dissipated, and it would only be a question of time when this company would find itself in the position of the Grand Trunk and Canadian Northern systems. If the C.P.R. Co. has, for many years past, kept an outstanding position among transportation companies of the world, it is because, through wise business management, it has been able to place itself in such a financial position that the financial world has faith in the institution, and perhaps none of us realize the value which this financial status has been to Canada in the outside world during recent years, the most outstanding case being the loan of $40,000,000 worth of debenture stock to the Imperial Government, which was actually hypothecated in the United States for the purchase of munitions during the war.

But, apart altogether from this phase of the question, we have in the actual conditions in Canada, that about which there can be no speculation whatever. It is known, from its financial statement, that the C.P.R. has actually put into the road out of reserves, proceeds of land sales, etc., $130,000,000, which has probably been expended more or less in every province in Canada through which the road runs, in bettering conditions and fitting it to that extent to better serve the public as a common carrier; and, according to the evidence, during the present fiscal year, it has already expended more than $8,000,000 out of reserve for the construction of branch lines in Western Canada. Under the present financial conditions, all the counsel above referred to, I think, would admit that none of these branch lines would be possible during the present year if the C.P.R. Co. did not have the reserve from which to draw for this purpose, but, even supposing it was able to sell securities to the public, it would mean an increase of its fixed charges or dividends which would have to be met out of earnings, and every addition to capital expenditure would be a further demand for increased rates; and therefore, considering the question from every standpoint, I consider it a national necessity that the C.P.R. at least be kept in a healthy financial condition, with the hope that, as a result, the other great railway system may be benefited in a corresponding degree. The financial statement of the C.P.R. for the year ended Dec. 31, 1919, showed a surplus of $844,249. It was contended, and was not denied, that should it pay the increases to its employes, based upon the Chicago award, without receiving any increase in rates, the 1920 balance sheet would show a deficit of many millions of dollars. The above mentioned award, if adopted by the C.P.R., would require an additional wage expenditure before Dec. 31 next, of $14,822,300, and for the next full year nearly $22,000,000, and, if adopted by the other roads, would mean the same proportion of increases.

It was strongly contended by many interests, that the Board, in making its decision, should take into consideration only the financial requirements of the C.P.R. Co., and whatever deficit there should be in the operation of the Canadian National Rys. System should be

borne by the country out of ordinary taxation. In replying to these contentions the representatives of the Canadian National Rys. pleaded most earnestly for the full increases asked for, claiming that were they granted, and they paid the wage increases above referred to, their operating ratio for the next year would be 105%, and they only asked to be placed in such a position that they could run the railway without going to the country for assistance, admitting, for the present at least, that the country should take care of the fixed charges, as well as the deficit which was sure to result from the operation of the Intercolonial and National Transcontinental Rys. systems.

Before attempting to arrive at the amount of increases, if any, to be granted, I take it the Board must first decide what policy it will adopt with respect to these opposing contentions. While I realize that, to a very large extent, the financial requirements of the C.P.R. must govern our decision, yet I would be very sorry to take the attitude that we should not in any manner consider the requirements of the Canadian National Rys. System. It would be entirely useless, for the purposes of this decision, to at all enter into the history of this great system; suffice it to say it is now a reality, which the people of Canada own and must work out to the best interests, not only of the railway, but the country as a whole.

Reference was made, during the course of the hearing, to a statement made by the Minister of Railways in Parliament in March last, that it was a question for the House to decide as to whether the deficit of $47,000,000 on the Canadian National Rys. should be met by rates or taxes upon the people. Parliament sat for nearly three months after this statement was made, and prorogued on the last day of June, without having taken any action; and therefore this Board must approach it from the standpoint of the law as it now stands, which imposes upon this Board the duty of "fixing, determining and enforcing just and reasonable rates," not only for the C.P.R., but for all other railways under its jurisdiction. Therefore, as only one rate ought to be made for all companies, the real question to be decided is, what are just and reasonable rates, considering all the circumstances of all the railways of Canada as they exist today. What might be considered a just and reasonable rate for one company might be an unjust and unreasonable rate for another, and therefore, I take it we must arrive at that medium which will, on the whole, be just and reasonable, in so far as it is possible to do so, and, at the same time, be just and reasonable to the community who have to pay the tolls. If we give a rate which will barely allow the C.P.R. to pay its fixed charges and dividends, or a lesser rate, then it is absolutely certain that the Canadian National Rys. System, including the Grand Trunk, Grand Trunk Pacific, Intercolonial and National Transcontinental Rys., and, for the purposes of this judgment I am considering them as a part of this system, will face an operating deficit of at least $50,000,000 a year, assuming that the wage award is adopted and including the Intercolonial and National Transcontinental and Grand Trunk Pacific Rys. The National system would therefore be condemned at its birth to a condition, which practically for all time to come, or at least for many years, would force it to Parliament annually for money with which to pay the operating expenses of the road. Such a condition must necessarily prove very discouraging to its managers and officials. In my judgment that is not in the best interests of the country, as a whole, and therefore, while not attempting to grant a rate which will immediately place the Canadian National Rys. System upon a self supporting basis, yet it should be one which will at least give its managers the hope that, by wise and prudent operation, this happy end may be attained, and that it may, within a reasonable time reach a position of independence without which, I fear, nothing but disaster can be the result.

According to the statement furnished by Mr. Beatty, President of the C.P.R., assuming that the wage award is adopted, and assuming that the full increases asked for are granted, its deficit would be $62,179 at the end of this year, and, in order that there may be no misunderstanding, I quote that portion of the statement as follows:—"The anticipated results for the year 1920 have been estimated on the following basis:—

| | | |
|---|---|---|
| The actual gross earnings for the first six months were | | $92,057,586 |
| Assuming for the balance of the year a 20% increase in freight traffic and 10% in passenger traffic, the gross for the last half of the year are estimated at | | 112,600,000 |
| Estimated on sleeping car and commutation car rates now in effect | | 650,000 |
| Estimated gross revenue | | $205,307,586 |
| Operating expenses, January to June, inclusive | $80,629,400 | |
| Assuming the same operating ratio for the last half of 1920 as for the last half of 1919, without added wage or material costs | 89,291,800 | |
| | | $169,921,200 |
| Add advance in cost of fuel | $4,293,000 | |
| Advance in cost of material and supplies | 6,112,000 | |
| Sales tax | 400,000 | |
| Overtime train service at one and one-half | 765,000 | |
| | | 11,570,000 |
| Total estimated operating expenses | | $181,491,200 |
| Estimated net for 1920 without advance in rates | | 23,816,386 |
| 30% increase in freight rates for four months, assuming 20% increase in freight traffic | | 16,563,600 |
| Estimated net | | $40,379,986 |
| Estimated income tax | | 3,068,838 |
| Net after income tax | | $37,311,048 |
| Fixed charges, dividends and pension fund | | 32,579,077 |
| Surplus | | $4,731,771 |
| Wage award if applied in Canada— | | |
| Four months— | | |
| May to August, inclusive | $7,113,750 | |
| Sept. to Dec., inclusive | 7,708,450 | |
| | | $14,822,300 |
| Estimate of revenue from supplemental application— | | |
| Freight 10% | $5,521,200 | |
| Passenger 20% | 3,619,300 | |
| Sleeping and parlor car 50% | 828,565 | |
| Milk 40% | 32,410 | |
| Excess baggage 20% | 26,875 | |
| | | $10,028,350 |
| | | $4,793,950 |
| Deficit | | $62,179 |

In arriving at this conclusion we must take into consideration the fact that his increases are based upon a period of four months from Sept. 1, while now they will be somewhat less than that, and which to that extent would increase the deficit, and also that eight months increased wages will be paid during this year. This naturally leads to what would be the result assuming that the full increases were granted, when applied to the fiscal year of 1921, and it must be admitted that this is to some extent a matter of speculation. Mr. McMaster furnished a very interesting statement for the year ended June 30, 1920, in which he estimated a surplus of $26,000,000. For the purpose of this decision, however, I think the fairer way would be to take the estimate of the C.P.R. for the year 1920, and attempt to figure out what the result would be during the next fiscal year, assuming the same volume of business and the same general conditions as we know to exist during the present fiscal year. I have therefore prepared a statement, based upon the evidence adduced, showing the estimated gross revenue for the year 1920, first without increased rates, and secondly with the full increases asked for, and also the estimated expenditures. Included in the latter is the item of $6,250,000 for increased labor necessary to bring the maintenance of way up to the average pre-war years. I have also in the statement shown the estimated receipts to some extent divided. Instead of the miscellaneous item, I have shown the amounts receivable in the different items making up the account. These latter items have been furnished, at my request, by Mr. Moule and are not found in the exhibit filed, in the same detail as contained herein. The result of this calculation, both of estimated receipts and expenditures, is as follows:—

| | |
|---|---|
| **Estimated Gross Revenue for 1921, Based on 1920 Without Increased Rates.** | |
| Freight, Eastern Lines (including 20% increase 2nd half year) | $63,000,000 |
| Freight, Western Lines (including 20% increase 2nd half year) | 74,000,000 |
| Switching, Eastern Lines | 270,000 |
| Switching, Western Lines | 330,000 |
| Passenger (deducting coolie business, but including 10% increase in latter half year) | 45,000,000 |
| Sleeping and parlor car (including full year 20% increased rates in effect and 10% increase in business 2nd half year) | 5,000,000 |
| Milk | 250,000 |
| Excess baggage | 400,000 |
| Express | 7,000,000 |
| Mail | 1,500,000 |
| Demurrage | 470,000 |
| Hire of equipment | 2,950,000 |
| Storage of freight and baggage | 450,000 |
| Grain elevators | 1,000,000 |
| Parcel rooms | 130,000 |
| Rents and miscellaneous | 2,000,000 |
| | $203,750,000 |
| **Estimated Revenue for 1921, Based on 1920, with Increases Applied For.** | |
| Estimated gross as per above | $203,750,000 |
| Add 40% to freight (see note) | 54,800,000 |
| Add 40% to switching | 240,000 |
| Add 20% to passenger | 9,000,000 |
| Add 50% to sleeping and parlor car | 2,500,000 |
| Add 40% to milk | 100,000 |
| Add 20% to excess baggage | 80,000 |
| | $270,470,000 |
| Estimated expenses as per attached | 217,230,000 |
| Net revenue | 53,240,000 |
| Fixed charges and pension fund | 11,350,000 |
| Net income | 41,890,000 |
| Income tax, 10½% | 4,398,500 |
| | $37,491,500 |
| Dividends | 22,427,000 |
| Surplus | $15,064,500 |
| **Estimated Expenses for 1921 on Present Basis of Costs.** | |
| Actual expenses to June 30, 1920 | $80,629,000 |
| Estimate of expenses July to Dec., assuming same operating ratio as last year | 89,292,000 |
| Estimate of new wage award | 21,000,000 |
| Increase in cost of coal for locomotives, 4,200,000 tons at $2.10 | 8,800,000 |
| Increase in coal for other purposes, 600,000 tons (inland steamship lines, station buildings, power plants, etc.) | 1,200,000 |
| Miscellaneous material 30% | 8,335,000 |
| Ties, 5,000,000 at 15c. | 750,000 |
| Rails, 100,000 tons at $10.00 | 1,000,000 |
| Maintenance of way labor below average for 4 years prior to war: 134 days per mile of mile per annum | 6,225,000 |
| | $217,231,000 |

This shows an estimated surplus for the next fiscal year of $15,064,500, which is probably more than the company should be entitled to, and which is probably a little less than the actual surplus would be for the year's operation, as possibly the increase of the maintenance of way labor might not be realized. As against this, however, for reasons hereinafter stated, the gross revenue would not be as great as I have estimated.

This brings me to the question, what rate of increase, if any, should be granted? Practically the whole argument of Messrs. Symington and Coyne, outside of the general statement as to the payment of the dividends herein referred to, was based on the allegation that the rates in western Canada were greater than those in eastern Canada. This has been a burning question with the people of the west at every rate hearing since the organization of this Board, and as the matter was so thoroughly discussed in the Western Rates Case, 17 Can. Railway Cases, 123, and decisions arrived at, I feel it unnecessary to enter into any lengthy analysis of figures to show to what extent, if any, this claim is justified. The eastern rates apply to the portion of Canada east of Port Arthur, including Port Arthur eastbound, and the western rates to the territory west of Lake Superior, including Port Arthur westbound. It was admitted by all parties at the hearing that the operating ratio in western Canada was somewhat less than in the east; that the tonnage per train was greater in the west than in the east, and that about 55% of the total traffic of the C.P.R. system was in eastern Canada and 45% in western Canada.

In order to satisfy myself of the facts, I have investigated the tariffs, both east and west, applicable to the more important traffic movements. I find that on building brick, sand, gravel and crushed stone, also on green vegetables to and from distributing points, the carload rates are lower in the west than in the east; that on rough or partly dressed building stone the western rates are the lower for the shorter hauls, and slightly the higher for the longer, with parity in some of the mileage blocks; and that on cheese, eggs and fresh meat the carload tariff to and from distributing points is lower for distances to between 150 and 200 miles and higher for the longer movements than in the east.

On lumber, while the shorter haul rates are lower than, or the same as, those in the east, and higher for the longer distances under the mileage tariff, the specific point to point tariff, which really governs the bulk of this traffic, is considerably higher in the west than for similar distances in eastern Canada. In dealing with a station to station tariff, however, a mere comparison of similar distances is not always conclusive, since a density of movement on the one side may not be counterbalanced on the other.

As to livestock; while there is little difference between the west and east rates in the mileage tariffs, the point to point western tariff is in general the higher, taking movements to Winnipeg and Montreal as illustrative.

As regards agricultural implements shipped in carload lots from distributing points; up to 100 miles the western rates are lower than the eastern for some distances, and are the same for others, but above 100 miles they rule higher—considerably so—for the long hauls. The carload mixing privilege is, however, more liberal in the west than in the east.

When we come to general merchandise, or what is referred to as class freight, I find that the western rates are considerably greater than the eastern, whether they be those of the standard maximum mileage tariffs or those of the special tariffs from distributing points.

It is somewhat difficult to form a comparison of the grain rates between the two divisions, because practically all the grain rates in the west are based upon Fort William or Port Arthur, and we have no such distances in the east as we have in the west, but, generally speaking, the following table affords an indication, taking Windsor, Ont., as the starting point producing the longest eastern hauls of Ontario grown grain:—

| | Miles. | |
|---|---|---|
| Windsor to Montreal | 555 | 35½c. |
| Brandon to Fort William | 553 | 17½c. |
| Windsor to Lennoxville | 657 | 32c. |
| Wapella, Sask., to Fort William | 655 | 21c. |
| Windsor, Ont., to St. John, N.B. | 1,033 | 36¼c. |
| Hatton, Sask., to Fort William | 1,032 | 28c. |

Allowing for the undoubted fact that a very large proportion of the traffic both east and west is on the commodity basis, I am still forced to the conclusion that the rates in western Canada average considerably greater than in the east, possibly around 15 or 18%. In coming to this conclusion I am stating nothing new, as this fact has always been recognized, and particularly by Sir Henry Drayton, the then Chief Commissioner, in the Eastern Rates Case, in re Eastern Tolls 22 Can. Ry. Cases, at page 41, where the following statement appears:—

"While, as has been set out at greater length in the Western Rates Case, differences of condition do exist between eastern and western Canada, and while western freight rates have already materially been reduced, the general schedule there obtaining is still higher, notwithstanding the fact that certain western rates that may be instanced are lower. There is no doubt but what the act requires and the general public interest of the country, as a whole, demands, that, if practicable, eastern rates should be advanced so that the different schedules may more nearly approach a parity."

This principle should be followed. Giving weight to the conditions set out in Re Western Tolls, as affecting the relative levels of tolls east and west of Fort William, and also bearing in mind changes in conditions which have taken place, I am of the opinion that it is justifiable to allow a reasonably less percentage of increase on freight tolls west of Fort William than east thereof. Consequently, I have concluded that an increase in rates should be granted along the following lines, with the exception of the items hereinafter specially referred to.

Until Dec. 31, 1920, I would give a general increase of 40% in eastern freight rates, and 35% in western freight rates, with 20% both east and west in passenger fares, which, however, should not exceed 4c. a mile, 50% in sleeping and parlor car rates and 20% on excess baggage.

Commencing Jan. 1, 1921, and until there is another revision of rates, I would reduce these percentages on freight to 35% in eastern territory and to 30% in western territory, with 10% reduction in passenger fares up to July 1, 1921, when passenger rates should come back to the basis in effect prior to the coming into force of this judgment; but continuing the full increases in parlor and sleeping car rates and excess baggage. It will of course be understood that the percentages of increases in the rates east and west of Port Arthur herein granted will, in the case of through rates between the east and the west, excepting transcontinental commodity rates, apply to the east and west factors thereof respectively.

This will, in my opinion, very nearly give the C.P.R. an even balance sheet at the end of the present fiscal year, and for the year 1921, according to my estimate, should give it a reasonable surplus; but it may still leave Canadian National Rys. System with an operating deficit.

At the hearing I was very much impressed with the argument presented by those opposing any increase on crushed stone, sand and gravel, as, from the evidence adduced, and which was not contradicted by the railway companies, they must be making a fairly substantial profit in the transportation of these commodities; but I am arriving at this conclusion, to a very great extent, by the public necessities of Canada at the present time. Perhaps, next to the railways, nothing is more urgently required than the improvement of our highways, and any increase in the rates on the materials entering into their construction must of necessity defer this much needed improvement; in fact, it was stated by Mr. McLean, of the Ontario Public Works Department, that they were now establishing in many parts of that province crushing plants at local centers; as the rates were already greater than the traffic would bear, and therefore any increased rate would not only deprive the public of a real necessity, but would probably reduce the business and consequently the profits of the railways, therefore I would give no increases in the rates on these three commodities.

Owing to the unprecedented cost of coal today and the likelihood of the same continuing for some time to come, I am not inclined to grant the above general increases in this commodity. The order in council, no. 1863, gave the following increases:—

| | |
|---|---|
| In rates 0 to 49c. a ton: | Increase, 15c. |
| In rates 50 to 99c. a ton: | Increase, 20c. |
| In rates 100 to 199c. a ton: | Increase, 30c. |
| In rates 200 to 299c. a ton: | Increase, 40c. |
| In rates 300 up a ton: | Increase, 50c. |

This scale was that prescribed in the McAdoo order for the United States. There is no lower rate now from Black Rock to Ontario points than 80c., and the higher rates are $1.80 to Kingston, $2.40 to North Bay, Parry Sound and Depot Harbor, and $3.10 to Sudbury. Based on the current rates, I would allow the following increases, viz.:—

| | |
|---|---|
| In rates 0 to 80c. a ton: | Increase, 10c. |
| Over 80 to 150c. a ton: | Increase, 15c. |
| Over 150c. a ton: | Increase, 20c. |

In the west the minimum line haul rate is also 80c., but the hauls being much longer than in eastern Canada, the great bulk of the territory will take the maximum increase of 20c. From Lethbridge, for example, the maximum increase will operate to destinations Medicine Hat and east.

The increase in the rates on cordwood, slabs, edgings, and mill refuse, all for use exclusively as fuel, should be limited to 10%.

I would also refuse any increase in milk rates, as only a few months ago this Board, on a special application, refused any increase on this commodity.

I also think there should be no increase in the minimum class rate scale as established by order in council no. 1863, and now in force by a recent order of this Board, as well as the minimum charge per shipment.

As substantial increases were given in commutation fares by special order of this Board only a few months ago, no additional increase should be given them herein.

So far, the freight rates dealt with are those charged for line hauls. Local

switching rates were materially increased by the carriers about 10 months ago, and these, together with the tolls for interswitching, it is not the purpose of this judgment to increase. The same must be said of the charges for such other incidental service as milling in transit diversion, reconsignment, stopovers, demurrage, weighing and the like. Should the carriers feel that the existing tariffs do not fully compensate them for the services rendered, any formal applications they may make will be investigated and dealt with on their merits.

In some industries the amount of increase in the rates themselves is a consideration secondary to the preservation of the rate relationships from the points of production. For example, the maintenance of the existing spreads between the rates from the various mills in British Columbia was urged at the hearing by the lumber interests of the province. While the principle of percentage increases must necessarily disrupt these relationships to some extent, it is considered important that in the working out of the tariffs such recognized differentials as have been referred to should be preserved so far as may be practicable, even though certain rates may result which are lower, or higher than they would otherwise be.

Transcontinental commodity rates may be advanced correspondingly to the increases now permitted in the United States, preserving the relationship between the territorial groups of the two countries that have obtained since 1918.

As under a percentage division of joint through rates each participating carrier will receive its appropriate share of the increases herein authorized, it is necessary that those railways that in joint traffic are paid an arbitrary division in a fixed amount, should receive a percentage of increase corresponding to the increase in the through rates.

As our jurisdiction for granting increases on certain lines of railway in western Canada depends entirely upon the amendment to sec. 325 of the Railway Act, 1919, which expires on July 6, 1922, the rates hereby established cannot continue beyond that date, unless Parliament, in its wisdom, sees fit to extend the provisions of that section. Therefore the rates herein provided for shall not extend beyond July 1, 1922.

E. M. Macdonald, K.C., on behalf of the Maritime section of the Canadian Manufacturers Association, and Mr. Finn on behalf of the Nova Scotia Government, urged that in any advance which might be made the proportional arbitraries east of Montreal in existence prior to 1915, should be maintained. I fear, however, we have not sufficient information at present to justify us in attempting to deal with this question; therefore, in arriving at my decision, I have not taken this into consideration, but always reserving the right of the Maritime people to apply to the Board, and also reserving the right to render a decision on the sugar application, now before us, regardless of what the general decision may be hereunder.

At the hearing, H. G. Kelley, speaking for the Railway Association of Canada, stated that they had decided to pay the railway employes the rates granted to the United States employes by the Chicago award, granting back pay to May 1, 1920, and on cross examination he frankly admitted that if they were not granted he firmly believed "there would be a general strike throughout Canada." Realizing as I do the sincerity of his statement, and the terrible results which would necessarily befall the people of this country as a whole under such a contingency, I have taken his statement into consideration in adjusting the rates herein. It must not be forgotten that a very large part of the increase hereby granted will be necessary to take care of this increased wage, in the case of the C.P.R. alone, amounting to nearly $22,000,000 per year.

I realize these rates will be a substantial burden upon the people of Canada, but it was admitted by all parties at the hearing that the cost of everything entering into the operation and maintenance of railways has increased more than 100% during the past four years, while the railway companies have been granted increases in what are known as the 15% and 25% cases, amounting on an average to not more than 35%. It is entirely unreasonable that the railway companies should be expected to provide the necessary transportation services for this country unless they receive rates somewhat in proportion to the increased cost of their operation, and while the rates herein established fall below the increased cost of everything else, yet I feel they will be sufficient to enable the railways to carry on during the term to which they apply, and that the people, in the light of the actual facts, will cheerfully contribute their quota in order to keep these utilities in a position to efficiently transport the business of the country.

The Canadian Pacific, Grand Trunk and Canadian Northern Ry. Companies will be required to furnish to this Board monthly statements of their operating revenues, and, should this Board, at any time before July 1, 1922, be of the opinion that a greater or less amount of money is being paid to the railway companies than is actually necessary to enable them to maintain a reasonable degree of operating efficiency, this Board reserves to itself the right, at any time, on notice, to readjust the rates to meet the conditions then existing.

The steam railway companies subject to this Board's jurisdiction shall therefore be entitled to publish and file tariffs in accordance with the above provisions effective on or after Monday, Sept. 13, instant.

In working out the rates under this judgment, fractions will be disposed of as set out in order in council no. 1863.

The foregoing judgment was concurred in by Assistant Chief Commissioner S. J. McLean; Deputy Chief Commissioner Hon. W. B. Nantel, and Commissioners A. S. Goodeve and J. G. Rutherford, C.M.G.

### The Board of Railway Commissioners' Orders.

The Board passed general order 308, Sept. 9, as follows:—Re application of the Railway Association of Canada, on behalf of the railway companies members thereof and of all other railway companies within the Board's jurisdiction, for authority to make a general advance of 30% in the tolls at present charged for the carriage of freight by the said companies; and the further application for an additional increase of 10% in all freight rates, and an increase of 20% in passenger fares, 50% in sleeping and parlor car rates, 40% in the rates on milk, and 20% in the rates for excess baggage. Upon hearing the applications at Ottawa, Aug. 10, 11, 12, 18, 19, 20 and 21, in the presence of counsel for and representatives of Canadian Pacific, Grand Trunk, Canadian Northern, Toronto, Hamilton & Buffalo, New York Central, Essex Terminal, Wabash, and Great Northern Railways, Michigan Central Railroad, Canadian Railway Association, Canadian Freight Association, Canadian Manufacturers' Association, the Livestock Dealers' Association, Canadian Wholesale Grocers' Associations, Canadian Lumbermen's Association, Retail Merchants' Association of Canada, Clay Workers' Association, Canadian Export Paper Company, Dominion Canners Ltd., Carnation Milk Products, Ltd., Riordan Paper Co., National Dairy Council, United Farmers of Ontario, Canadian Council of Agriculture, certain commercial organizations of the Maritime Provinces, Retail Coal Dealers of Ontario, Eastern Canada Livestock Union, Crushed Stone Industries of Ontario, Western Canada Livestock Union, Canadian Construction Co., boards of trade of Winnipeg, Toronto, Montreal, and St. John, City of Toronto, Hamilton Chamber of Commerce, London Chamber of Commerce, Border Cities Chamber of Commerce, provinces of Manitoba, Saskatchewan, and New Brunswick, and Ontario Department of Public Highways, the evidence offered and what was alleged; and upon reading the written submissions filed, judgment, dated Sept. 6, 1920, was delivered by the Chief Commissioner, and concurred in by the other members of the Board who heard the application, a certified copy of the said judgment being attached hereto marked A, it is ordered that the changes in the tariffs of the companies operating steam railways subject to the board's jurisdiction, as set forth in the judgment, which is hereby made part of this order, be and they are hereby authorized.

The Board of Railway Commissioners passed general order 309, Sept. 9, as follows:—Re application of Railway Association of Canada, on behalf of railway companies, members thereof and of all other railway companies within the Board's jurisdiction, for authority to make a general advance of 30% in the tolls at present charged for carriage of freight by the said companies; and the further application for an additional increase of 10% in all freight rates and an increase of 20% in passenger fares, 50% in sleeping and parlor car rates, 40% in the rates on milk, and 20% in the rates for excess baggage. Supplements to the standard freight and passenger tariffs of the undermentioned railway companies having been filed on the basis prescribed by the Board's judgment, dated Sept. 6, and general order 308, dated Sept. 9, it is ordered that the following supplements to standard freight tariffs of maximum mileage tolls be approved; the rate scales of the said tariffs to be published in at least two consecutive weekly issues of The Canada Gazette, preceded by the following notice: "The undermentioned supplements to standard freight tariffs having been filed for the approval of the Board of Railway Commissioners for Canada, and being found by the Board to be in accordance with its judgment, dated Sept. 6, and its general order 308, dated Sept. 9, and having been approved by its general order 309, dated Sept. 9, the rate scales thereof are hereby published:"

Atlantic, Quebec & Western Ry., Supplement 1 to C.R.C. 26.

Canadian National Rys., Supplement 1 to C.R.C. no. E.115.

Canadian Northern Ry., Supplement 1 to C.R.C. no. E.1102. Supplement 1 to C.R.C. W.1182.

Canadian Pacific Ry., Supplement 1 to C.R.C. no. E.3543. Supplement 1 to C.R.C. no. W.2392.

Dominion Atlantic Ry., Supplement 1 to C.R.C. 576.

Esquimalt & Nanaimo Ry., Supplement 1 to C.R.C. 402.

Glengarry & Stormont Ry., Supplement 1 to

C.R.C. 93.
Grand Trunk Ry., Supplement 1 to C.R.C. no. E.3957.
Grand Trunk Pacific Ry., Supplement 1 to C. R.C. 298.
Great Northern Ry., Supplement 1 to C.R.C. 1423, 1424, 1425, 1430.
Edmonton, Dunvegan & British Columbia Ry., Supplement 1 to C.R.C. 86.
Kettle Valley Ry., Supplement 1 to C.R.C. 174.
Quebec, Montreal & Southern Ry., Supplement 1 to C.R.C. 661.
Quebec Central Ry., Supplement 1 to C.R.C. 681.
Michigan Central Ry., Supplement 1 to C.R.C. 2812.
New York Central (Ottawa Div.), Supplement 1 to C.R.C. 1650.
New York Central (Adirondack Div.), Supplement 1 to C.R.C. 1681.
Quebec Oriental Ry., Supplement 1 to C.R.C. 37.
Napierville Junction Ry., Supplement 1 to C. R.C. 198.
Temiscouata Ry., Supplement 1 to C.R.C. 328.
Toronto, Hamilton & Buffalo Ry., Supplement 1 to C.R.C. 1227.
Central Canada Ry., Supplement 1 to C.R.C. 33.

It is further ordered that the following supplements to standard passenger tariffs of maximum mileage tolls be approved; the said supplements to be published in at least two consecutive weekly issues of The Canada Gazette, each preceded by the following notice: "The undermentioned supplement to standard tariffs having been filed for the approval of the Board of Railway Commissioners for Canada, and being found by the Board to be in accordance with its judgment, dated Sept. 6, and its general order 308, dated Sept. 9, and having been approved by its general order 309, dated Sept. 9, is hereby published."

Canadian Northern Ry., Supplement 1 to C.R. C. no. E.1064. Supplement 1 to C.R.C. io. W. 1492.
Canadian Pacific Ry., Supplement 1 to C.R.C. no. E.3187.
Grand Trunk Ry., Supplement 1 to C.R.C. no. E.2669.
Grand Trunk Pacific Ry., Supplement 2 to C. R.C. 660.
Halifax & South Western Ry., Supplement 1 to C.R.C. no. P.77.
Michigan Central Rd., Supplement 1 to C.R.C. 2441.
Napierville Junction Ry., Supplement 1 to C. R.C. 92.
New York Central Rd., Supplement 2 to C.R.C.-N.Y.C. 191.
Toronto, Hamilton & Buffalo Ry., Supplement 1 to C.R.C. 1209.

On Sept. 15 the Board of Railway Commissioners passed general order 310. Its recital was worded the same as that of order 309 above, the rest of the order being as follows:—Supplements to the standard freight and passenger tariffs of the undermentioned railway companies having been filed on the basis prescribed by the Board's judgment, dated Sept. 6, and general order 308, dated Sept. 9, it is ordered that the following supplements to standard freight and passenger mileage tariffs be and they are hereby approved; the said supplements, together with reference to this order to be published in at least two consecutive weekly issues of the Canada Gazette:—

Freight.

Algoma Central & Hudson Bay Ry., Supplement 2 to C.R.C. 478.
Algoma Eastern Ry., Supplement 1 to C.R.C. 223.
Central Vermont Ry., Supplement 1 to C.R.C. 1295.
Fredericton & Grand Lake Coal & Ry., Supplement 1 to C.R.C. 84.
New Brunswick Coal & Ry., Supplement 1 to C.R.C. 51.
Pere Marquette Ry., Supplement 1 to C.R.C. 2215.

Passenger.

Central Vermont Ry., Supplement 1 to C.R.C. C. 502.
Dominion Atlantic Ry., Supplement 1 to C.R.C. 404.
Fredericton & Grand Lake Coal & Ry., Supplement 1 to C.R.C. 4.
Great Northern Ry., Supplement 2 to C.R.C. 1161.
Glengarry & Stormont Ry., Supplement 2 to C.R.C. 2.
Midland Ry. of Manitoba (Northern Pacific Ry.), Supplement 1 to C.R.C. 317.
New Brunswick Coal & Ry., Supplement 1 to C.R.C. 4.
Pere Marquette Ry., Supplement 1 to C.R.C. 580.
Quebec Central Ry., Supplement 1 to C.R.C. 174.
Wabash Ry., Supplement 1 to C.R.C. 996.

On Sept. 23 the Board of Railway Commissioners passed general order 311. Its recital was worded the same as that of order 309 above, the rest of the order being as follows:—Whereas standard freight tariffs or supplements thereto of the undermentioned railway companies have been filed on the basis prescribed by the Board's judgment of Sept. 6, 1920, and general order 308, dated Sept. 9, it is ordered that the following tariffs and supplements be approved; the said tariff and supplements, with a reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette:—

Essex Terminal Ry., C.R.C. 544.
Boston & Maine Rd., Supplement 1 to C.R.C. 1908.
Maine Central Rd., Supplement 1 to C.R.C. no. C1566.

The Canadian Freight Association's Manager gave notice in the Canada Gazette of Sept. 11 of the supplements to standard freight tariffs which had been approved by the Board of Railways Commissioners, and published the rate scales thereof.

In accordance with the Board of Railway Commissioners' general orders 309 and 310, the various railway companies have given notice, in the Canada Gazette, of the supplements to their standard freight and passenger tariffs, putting the new rates in force.

## Edmonton, Dunvegan & British Columbia Ry. and Central Canada Ry. Rates.

S. J. McLean, Assistant Chief Commissioner, Board of Railway Commissioners, gave the following judgment, Sept. 8, on the application of Edmonton, Dunvegan & British Columbia Ry. and Central Canada Ry. for approval of standard freight and passenger tariffs increasing their rates:—Application was launched for a 50% increase in freight rates and a corresponding increase in passenger rates. The rates of this railway are, for the reasons set out in "Re Edmonton, Dunvegan & British Columbia Ry. Co., 22 Can. Ry. Cas., 1," permitted to be on the Mountain scale. The application as launched asked, as has been pointed out, for a 50% increase in standard passenger rates. The standard rate of the Mountain scale being 4c., this would give a rate of 6c. a mile. In the course of the hearing, counsel for the railway companies substituted 5c. as the maximum rate per mile for which they were asking.

At the hearing, representation was made by counsel for the railways that a general application based on increased costs of operation was in course of preparation by the railways subject to the Board's jurisdiction. Representation was made at the hearing by Mr. Ford, counsel for the Grand Prairie Board of Trade, that the matter of rate increase should stand over until the general application for rate increase was dealt with. Subsequent to the hearing, the Board received a telegram from the Secretary of the United Farmers of Alberta, strongly urging that the application should not be decided before the general application of railway rate increases. When the application for general rate increases was launched, notification of the hearing was given to him.

During the hearing, representations were made as to the condition of the service afforded on the applicant railways. It was strongly urged that the need for retention of the Mountain scale basis no longer existed. In addition to what was set out at the hearing, representations are on file from various organizations taking this position. It was strongly urged that with the limited population at present located in the country served by the railways concerned, any increase of rates would be highly detrimental. The burden of increased rates is one which should be imposed only when there is a thoroughly established justification therefor. At the same time, in the present application, as well as in the application launched by the railways for a general increase in rates, much material was submitted, reinforcing what is a matter of common knowledge, viz., that in the period which has elapsed since 1914 railway costs of operation have practically doubled, while rate increases have been very much less. The weighty responsibilities imposed upon the Board by Parliament compel the conclusion that rate inadequately remunerative are not only detrimental to the railway concerned, but, in a wider and more important phase, are detrimental to the public served by the railway, because if the rates do not adequately remunerate for the service, the efficiency will tend to deteriorate, and there will be progressive difficulty in obtaining those adequate facilities which are essential if traffic is to move.

While the Board was considering the evidence submitted in the present application, the application of the railways subject to the Board's jurisdiction for a general increase in rates was launched; and the Board was impressed with the idea that the position was well taken that the decision in the present application was one which should be considered in connection with the decision in the general rate application.

The placing of the Edmonton, Dunvegan & British Columbia Ry. on the Mountain scale was, as indicated in the judgment already referred to, a temporary measure. Conditions have not, however, so changed as to warrant at present the applying of the Prairie scale intead of the Mountain scale. As already pointed out, the present application, in the first instance, asked for an increase of 50% in passenger rates over the Mountain scale rate. Subsequently, this was reduced to an increase of 25%. The increase in passenger rates as allowed in the decision of the Board which has just issued in the general rate investigation is 20%, subject to a maximum rate of 4c., it being further provided that one-half the increase shall disappear at the end of Dec., 1920, and the other half on July 1, 1921.

On considering the various factors involved, I am of the opinion that the applicant railways should be allowed to put in force the same rate increases as are authorized in the Board's judgment in the matter of the application of the Railway Association of Canada, on behalf of the railway companies members thereof, and of all other railway companies within the jurisdiction of the Board, for authority to make a general advance of 30% in the tolls at present charged for the carriage of freight by the said companies; and that the rate increases authorized herein may become effective on the same date as authorized in the judgment in the application above referred to.

Commissioners Goodeve and Rutherford concurred in this judgment.

**Provisions for Appeals from the Board's Decisions.**

The Railway Act, 1919, contains the following provisions:—

"51. The Board may review, rescind, change, alter or vary any order or decision made by it, or may rehear any application before deciding it.

"52. (1) The Governor in council may at any time in his discretion, either upon petition of any party, person or company interested, or of his own motion, and without any petition or application, vary or rescind any order, decision, rule or regulation of the Board, whether such order or decision is made inter partes or otherwise, and whether such regulation is general or limited in its scope and application; and any order which the Governor in council may make with respect thereto shall be binding upon the Board and upon all parties.

"(2) An appeal shall lie from the Board to the Supreme Court of Canada upon a question of jurisdiction, upon leave therefor being obtained from a judge of the said court upon application made within one month after the making of the order, decision, rule or regulation sought to be appealed from, or within such further time as the judge under special circumstances shall allow, and upon notice to the parties and the Board, and upon hearing such of them as appear and desire to be heard, and the costs of such application shall be in the discretion of the judge.

"(3) An appeal shall also lie from the Board to such court upon any question which in the opinion of the Board is a question of jurisdiction, or both, upon leave therefor having been first obtained from the Board within one month after the making of the order or decision sought to be appealed from, or within such further time as the Board under special circumstances shall allow, and after notice to the opposite party stating the grounds of appeal; and the granting of such leave shall be in the discretion of the Board.

"(4) No appeal, after leave therefor has been obtained under subsection 2 or 3 of this section, shall lie unless it is entered in the said court within 60 days from the making of the order granting leave to appeal.

"(5) Upon such leave being obtained the party so appealing shall deposit with the Registrar of the Supreme Court of Canada $250, by way of security for costs, and thereupon the Registrar shall set the appeal down for hearing at the nearest convenient time; and the party appealing shall, within 10 days after the appeal has been so set down give to the parties affected by the appeal or the respective solicitors by whom such parties were represented before the Board, and to the Secretary, notice in writing that the case has been so set down to be heard in appeal as aforesaid; and the said appeal shall be heard by such court as speedily as practicable.

"(6) On the hearing of any appeal, the court may draw all such inferences as are not inconsistent with the facts expressly found by the Board, and are necessary for determining the question of jurisdiction, or law, as the case may be, and shall certify its opinion to the Board, and the Board shall make an order in accordance with such opinion.

"(7) The Board shall be entitled to be heard by counsel or otherwise upon the argument of any such appeal.

"(8) The court shall have power to fix the costs and fees to be taxed, allowed and paid upon such appeal, and to make rules of practice respecting appeals under this section; and, until such rules are made, the rules and practice applicable to appeals from the Exchequer Court shall be applicable to appeals under this Act.

"(9) Neither the Board nor any member of the Board shall in any case be liable to any costs by reason or in respect of any appeal or application under this section.

"(10) Save as provided in this section:

"(a) every decision or order of the Board shall be final; and,

"(b) no order, decision or proceeding of the Board shall be questioned, or reviewed, restrained or removed by prohibition, injunction, certiorari, or any other process or proceeding in any court."

**The Dominion Government States its Position.**

The following official statement was given out at Ottawa, Sept. 11:—"Telegrams have been received from different parts of the country protesting against the judgment of the Board of Railway Commissioners granting a general increase in railway rates, and requesting that the action of the Board should first be suspended and afterwards set aside by the Government. Many of the wires received have been sent under misapprehension as to the position of the Board of Railway Commissioners and its action, to the Government. The wires, indeed, would indicate that a belief exists which, if not prevalent, has at least obtained in certain parts of the country, that the Board of Railway Commissioners is merely a department of the Government service. This is not the case, and it is important that the right position be stated.

"In 1903 Parliament decided that the control of railways was to be removed from direct departmental and political interference and provision was made for a Board of Railway Commissioners. The Board was subsequently constituted and has since discharged the statutory and judicial functions assigned to it in a manner undoubtedly, on the whole, in the public interest, and to the general acceptance of the people. It has not been interfered with by this or any other government. Instead of being a mere governmental department, the Board is, by statute, constituted a court, and has the rights, privileges and independence of a court. The act, however, provides for an appeal to the Governor in council, and reserves the right of the Governor in council on such appeals to vary or rescind any order, rule or decision of the Board. The practice that has grown up under this rule is well settled. The decisions of the Board cannot lightly be interfered with. As a matter of fact, since the Board commenced its operations no judgment of the Board has been set aside by the Governor in council. In a case of the importance of the present it undoubtedly becomes the duty of the Governor in council to go carefully into the whole of this issue, to hear the arguments that may be made, and, after becoming seized of the whole matter, to dispose of the appeal, having regard to the underlying principles of the Railway Act, the rights of shippers, the rights of the carriers, and the underlying national interests.

"The question of a stay of the Board's judgment has been as carefully considered as the very short time at the Government's disposal renders possible. The Board's judgment goes into effect on Sept. 13. The Government has had before it the complete judgment of the Board, embodying references to the evidence of the reasons for judgment. This has been carefully studied. As against this there have been, and, of course, could be presented, only brief contentions by way of protest. The judgment finds that the relief granted is necessary and should be applied, and this after the hearing of evidence and arguments on both sides. A suspension means more or less indefinite postponement, and if the judgment is right, would render impossible the remedying of any injustice done. The judgment of the commissioners, which, it should be pointed out, is unanimous, being concurred in by all the commissioners who sat upon the case, further indicates that the objections now urged were taken into account, and emphasized that such objections went to the measure of relief that ought to be granted rather than to the claim that no increase should be made. The official judgment of the Interstate Commerce Commission of the United States has, as well, been available for reference. This judgment, it may be noted, is now in force. A perusal of this judgment discloses that more general, and, in many cases, heavier increases have been granted to railways in that country. For example, on coal the Interstate Commerce Commission has increased the rate 35% in western territory, and 40% in eastern territory. In Canada the rates on coal are increased 10c. a ton on all existing rates not exceeding 80c., and increased 15c. a ton on all existing rates over 80c. a ton and not exceeding $1.50 a ton; and 20c. a ton on all existing rates over $1.50 a ton.

"It will be noted that the increase in Canada is very considerably the lower. Coal constitutes a large proportion of the total traffic of Canadian carriers. The rates on sand, gravel and crushed stone in the U.S. have been increased 40% for the eastern territory and 35% in the western. In Canada no increase whatever is allowed. On cordwood, slabs and mill refuse used for domestic fuel, the same increase has been granted in the U.S., while in Canada the increase is held down to 10%. The general increases allowed in U.S. territory are reduced in the cost of milk movement, the increase allowed there by the Interstate Commerce Commission being 20%. In Canada no increase whatever is allowed.

"Over and above this, the increases in the U.S. are not limited as to time in the manner as to which increases in Canada are. The general increases of 35% in western territory and 40% in eastern territory allowed by the Canadian Board are reduced, under the judgment, to 30% and 35% effective Jan. 1 next, and, in addition, the railway companies are bound to submit monthly statements so that their earnings may be checked and reductions made in rates, in case the rates allowed proved unnecessarily high.

"It should also be noted that the increase in passenger rates is also limited. In the U.S. territory the increase is 20%; in Canada the increase is 20%, but in Canada the increase is to be reduced to 10% effective January 1 next, and on July 1 next the increase is cancelled altogether. No limitations are made in the U.S. order.

"The above references are necessary to be taken into account when the Government is asked to take responsibility for the confusion, and possibly the injustice, that may be done at this date by interfering with the Board's order to suspend its application. The whole subject can, however, be fully gone into on appeal. Every facility will be given to argue the merits of all contentions ad-

vanced and to review the entire order. If it should appear to be a case where the appeal should be granted and the decision reversed, there could, if deemed proper, be provision for rebates of rates charged beyond those ultimately fixed. The Government, while decided that it could not justify now a suspension of the order, will facilitate in every way the early hearing of the appeal."

**Appeals against the Board of Railway Commissioners' Decision.**

We were advised by the Clerk of the Privy Council on Sept. 23 that appeals to the Privy Council, against the Board of Railway Commissioners' judgment of Sept. 6, authorizing increases in railway freight and passenger rates had been received from the Manitoba and Saskatchewan governments, the Prime Minister of Manitoba, the cities of Toronto and Winnipeg, the Halifax, Winnipeg and Edmonton boards of trade and the Canadian Wholesale Grocers Association, and that the appeals would be heard in the Privy Council Chamber, Ottawa, on Sept. 29.

# Car Records and Their Relation to Transportation and Car Accounting.

By J. D. Altimas, Assistant General Superintendent Car Service, C.P.R., Montreal.

In the early days of railroading, car records were not much in vogue, for the reason that cars usually were confined to service on the owner's rails. Shipments moving from one road to another were transferred at the junction point to cars of the receiving road. This condition obtained for many years, but with the expansion of industrial activities came through rates and through routes, and these aided, by that all important factor, competition, gradually compelled all roads to permit their equipment to be loaded to points on other roads, with the understanding that the car and the contents would move through to destination without breaking bulk. As cars commenced to move from one road to another, always subject to possible delays and diversions, it became necessary for car owners to keep a close tab on the movements of both home and foreign equipment. These same conditions made it necessary for the roads to get together and formulate rules and regulations to cover the interchange of equipment and to protect the accounting of car hire.

Up to June 30, 1902, the remuneration for the use of freight cars was on a mileage basis, i.e., so much for each mile a car moved. The rates varied according to special conditions and territories, but usually the rate for common cars, i.e., box, flat, coal and stock, was six mills a mile, while the rate for special class cars, i.e., refrigerator, tank, palace horse, etc., was ¾c. a mile. These rates were paid for both the loaded and empty movement, but when cars did not move, they did not earn anything. In those days we did not have any demurrage regulations, and as a result cars were delayed most unreasonably at unloading stations and in many cases at the loading stations. Many of the railways deliberately allowed empty cars to lie around, waiting prospective loading, to avoid empty mileage. Such delays were often to the great detriment of the car owners, which had business available on their own roads, which they were unable to accept and move on account of shortage of equipment. In the early nineties, when the writer was chasing cars through New England and the New York and Pennsylvania territories, it was not unusual to find cars delayed under load for periods of two, three or even four months at a time, and the shippers or consignees did not consider this practice unreasonable, although they very seldom made much effort to justify it, simply stating that it was one of the risks incident to the transportation business. It certainly was cheap storage for the shippers and consignees, although a most expensive proposition for the railways, both in the matter of car supply and terminal facilities. These condition, which permitted excessive delays to car equipment, were mainly responsible for the stories, both told and published, of "lost cars." There is no doubt that many roads had considerable difficulty in locating their equipment in those days, principally due to the inadequate records kept by many of the roads, but since the advent of the per diem as the basis of remuneration for the use of freight cars, we do not hear much about lost cars. Under per diem rules the road receiving a car must account for it to the car owner, at the current per diem rate, from the date of its receipt up to the date it is delivered to the owner, or to another road, or in the case of a destroyed car, up to the date it is reported as a "destroyed" car to the owner, in accordance with per diem rules.

We may take it for granted that in recent years the majority of the railways, especially the larger roads, have been maintaining fairly good records. Generally speaking, car records are maintained at all stations and contain everything there is to know in connection with the handling of the car and contents, including the charges assessed, or collected, while in the terminal. Apart from the accounting features these records show the following information: Initials and number of car, kind of car, date and time of arrival, train reference, point of shipment and kind of commodity if a loaded car, date and time of notification to consignee of arrival of his shipment, date and time of placement, date and time of release, date and time car is forwarded, train reference, and, if car is loaded, kind of commodity and destination.

At stations where a great number of cars are handled, there is also maintained a daily on hand report, usually referred to as the yard check. This report shows the initials and number of the car, kind of car, on what track located and whether loaded or empty, and if held, for what purpose. At stations where cars are interchanged with other roads, an interchange report is maintained, which shows the initials and number of the car, kind of car, name of road to which car is delivered, date and time of interchange, name of billing station, name of destination station and kind of contents. An index record for ready reference is also maintained at the larger stations.

The movements of all cars on any part of the road and on foreign roads are recorded in the books of the car accountant, whose office is usually at headquarters. The basis of these records is the agents' interchange report, the conductor's freight or mixed train report, and the foreign road's junction report.

The interchange report now in use on all roads is authorized by the American Railroad Association, and is known as the reciprocal form of report. The agent of the delivering road prepares the report in quadruplicate, showing information for all cars delivered, and passes the completed report to the agent of the receiving road, who checks the information shown thereon, and, if he finds it correct, signs all four sheets, certifying to the receipt of the cars. He retains one copy of the report for his station record, sends one copy to his car accountant, and returns two copies to the agent of the delivering road. The latter keeps one copy for his station record and forwards one copy to his car accountant.

The conductor's freight or mixed train report is not uniform on all roads, but the information usually shown includes: initials and number of car, loaded or empty, kind of car, date of movement, name or number of station taken at, name or number of station left at; if loaded, kind of contents, name or number of billing station, name or number of destination station. Some of the roads also include information covering tonnage rating, tare tons, content tons, locomotive record, etc., for statistical purposes.

Under American Railroad Association Rules, where a railway delivers a foreign car to a connection, not the owner of the car, he is obligated to advise the car owner the name of the road the car was delivered to, and the date of the movement, and to show whether the car was loaded or empty. This is called the junction report. Roads which use the cut up system preserve the interchange slips for foreign cars delivered, and send them to the car owners as the junction report. This saves the delivering road considerable work, and gives the car owner a first hand record, avoiding all errors due to transcribing.

Practically all of the larger roads now use the cut up or self transcribing system for conductor's train report and the agent's interchange report. Under this system the conductor's train report consists of one wide form giving all the information required, including an extra column for the date of the movement, also one narrow form, which is a duplicate of the wide form, in so far as it refers to the initials and number of the car, number of station car is taken at, and left at, and date of movement. This narrow form has punch holes about 2-16 of an inch, between the lines, to the left of the initials column for the use of the sorting clerks. These two forms are made at one operation by the use of carbon paper. The information covering initials and number of cars, numbers of stations cars are taken at and left at, and the date of the movement must be written in for every car handled. Ditto marks must not be used. This is necessary on account of the forms being cut up into slips. Each slip must show complete information covering the car referred to. For all other information called for by the form ditto marks may be used wherever considered advisable.

The agent's interchange report consists of four wide forms giving all the information required, including an extra column for the date; also two narrow forms which are duplicates of the wide forms, in so far as they refer to the initials and number of the cars, name of road delivered by, and name of road delivered to, name of station delivery is effected, and

date of delivery. The narrow forms have punch holes, about 2-16 of an inch, between the line to the left of the initials column for use by the sorting clerks. The narrow forms are of different colors, one pink, for the use of the delivering road, and one canary, for the use of the receiving road. The pink indicates a delivered record, the canary a received record. The original and five copies of this report are made in one operation by use of carbon paper. The information covering initials and numbers of cars, name of road delivered to, name of station at which delivery is effected, and the date of delivery, must be written in for every car delivered. Ditto marks must not be used. This is necessary on account of the forms being cut up, and each slip must show complete information covering the car referred to. For the information called for by the form ditto marks may be used wherever considered advisable. These forms, when completed by the agents and conductors, are forwarded promptly to the car accountant's office, where they are entered into the car record books.

The handling of these reports in the car record office is a systematic and interesting operation which I will endeavor to describe to you. As soon as the mail is opened the reports are passed from the mail desk to the examining clerks, who see that all the information called for by the form is properly entered, after which the narrow forms are separated from the wide forms. The wide forms of the conductor's train report are immediately turned over to the statistical department for its use, while the wide forms of the interchange reports are filed for ready reference. The narrow forms are then sorted, the ones havingly only one car being placed in one lot, those with two cars in another lot, those with three cars in another, and so on. These forms are then made up into packages of from 200 to 300 per package, the forms showing the smallest number of cars being on top. This is done to enable the cutter to dispose of the blank slips as they come from the machine, and thus eliminate the unnecessary handling of blank slips by the sorting clerks. Interchange reports are given preferred handling. When the narrow forms reach the cutter, they are put through the machine, and as the slips leave the machine the cutter immediately separates the blank slips from the record slips, and throws the blanks into a receptacle used for this purpose, thus eliminating the unnecessary handling of blanks by sorting clerks. These slips are placed in small boxes, enclosed on three sides only, and these boxes have their tare weight (equivalent number of record slips) stencilled on them, so as to facilitate the weighing. These tare weights are checked occasionally to see that there is no variation. The boxes with the record slips are weighed, the correct weights taken, and they are then passed on to the sorting clerks. The machine used for this purpose is of the advance lever type, and when the reports are of uniform size, with spacing and punch holes also uniform, there is practically no chance for mutilation of slips.

The paper used in the reports is of uniform weight, and when cut up the slips average about 17 to 1-16 of an ounce, or 272 an ounce. With a list of scale weights from 1-16 of an ounce to one pound, it is a very simple matter to ascertain the actual number of record slips handled each day by the sorting clerks and the record clerks. A clerk weighs the slips as they come from the cutter, and credits the various sorters with the actual number of slips handled by them. This clerk also weighs the slips turned in each night by the various record clerks, and credits them with the correct number of record slips worked. An ordinary druggist scale, with a single beam graduated 1-16 of an ounce to five ounces, capacity 8 lb., gives every satisfaction.

The sorting table is usually a high desk, the top being slightly raised toward the back, with two rows of spindles 1 in. apart, the second row being about 7 in. behind the first. The spindles are usually made of brass, and are about 4¾ in. high. There is a shoulder or collar on the spindle, about ¾ in. from the bottom, and this part below the shoulder fits into holes bored in the top of the desk, which leaves about 4 in. of spindle above the desk. One or more spindles are allotted for each record, and sufficient spindles to accommodate all records are looked after by one sorting clerk.

The spindles are a little less than 2-16 of an inch and as the record slips have a hole 2-16 of an inch punched to the left of the initials column, the sorters slip them on to the spindles very rapidly, the only thing necessary being a knowledge of the various cars allotted to each spindle. Lists are prepared which show this information, and these are posted in suitable places on the sorting desk. Sorting clerks are educated to hold the slips in the right hand and sort with the left. When the slips are held in the left hand, the fingers cover the initials of the cars and the handling is consequently slower. Sorting clerks generally handle about 26 to 30 slips per minute. Some roads do not use spindles. Instead they sort into boxes, each box having a sufficient number of small compartments about 5½ by ¾ in. to take care of the number of records operated.

The original sorting is done to suit individual requirements. Usually the first sorting is done in book order and the second in page order. In many instances, owing to the make-up of the book, a second sorting is not economical. The junction records, when received on the standard junction report form, are transcribed by typewriter to the cut up form, and are passed through the machine in the same manner as other forms and are then passed on to the sorters. Junction records received on the cut up forms are at once turned over to the sorters for handling. At regular periods during the day the record clerks take or receive the record slips from the sorting desk, and proceed to enter them in their books. By this method a record clerk does not have to handle any records except those which are to be entered in his book.

The record books are usually about 18 in. long by 17 in. wide. The home car record sheets are ruled about as follows: One column about 1 in. wide for last account, one column about 1 in. wide for car number, then 31 columns 6-16 of an inch wide, for the days of the month, and one column about 1 in. wide to the extreme right for mileage or per diem purposes. Each page holds 50 cars, and a book usually includes 5,000 cars in numerical order. The home car record usually is made up to take care of two months records, in order to avoid the necessary transferring of the records from one book to another.

The foreign car record sheets are ruled as follows: One column about ¾ in. wide, for the last account, one column about ¾ in. wide, for initials, on column ¾ in. wide, for number, one column ¼ in. wide, for kind of car, one column ¼ in. wide, for per diem days earned, one column ¼ in. wide, for checking purposes, 31 columns ¼ in. wide for the days of the month, and three or four columns 6-16 of an inch wide for mileage purposes. Each page holds 50 cars, and each book contains space for 5,000 or 6,000 cars, of which 1,500 to 1,800 are actually in service at any one time. These books are made up to show cars in alphabetical road order and in numerical order and are indexed for ready reference.

The loose leaf principle for car records is generally used by the larger roads. They cost considerably less, and can be manipulated to suit all conditions; especially is this true of the foreign car records, where the number of cars handled fluctuates from month to month.

When the clerk is ready to enter records, he first finds the space allotted to the car, and then enters in the block which represents the date of the movement, the number of the station at which the car was taken, and the number of the station at which car was left. Usually the number of the station at which car is taken already appears in the block, and it is only necessary to enter the number of the station at which the car is left, and a check mark drawn after the number of the station at which the car is left indicates the record is complete. Where the car moves empty, the pencil line drawn above the number of the station at which car is left indicates the record is complete.

In the case of interchange records, a receipt from a connecting road is entered by showing the symbol representing the road in the upper left hand corner of the block, immediately followed by the number of the station. To indicate a delivery to a connecting road, the symbol of the road is entered in the lower right hand corner of the block, preceded by the station number. In practically all cases the number of the station already appears in the record and it is only necessary to enter the symbol.

A good medium hard pencil is used for entering records. Some roads use a black pencil to indicate a loaded movement, and a red or purple pencil to indicate an empty movement. Several of the larger roads use a black pencil exclusively, and draw a line above the number of the station at which the car is left, to indicate the car moved empty. Home record clerks average about 300 entries an hour, whereas foreign record clerks average about 225 entries an hour.

Roads which do not use the cut up form of reports, simply take the interchange reports, the conductors' train reports and the junction reports, from the mail desk, place them in packages of suitable size for handling and pass them around the several record clerks, who enter the movements direct from the reports to the books. Under this method each clerk must examine every car shown in the reports, in order to pick out the records which are to be entered in his record. This takes considerable time and labor. Any road which handles more than six or seven records will find it advisable and economical to use the cut up form of reports.

With a record of every movement made by cars on his own rails, with the interchange record of cars delivered to and received from connections, and with the junction record of his cars furnished by foreign roads, a car owner has a complete record of every one of his cars dur-

ing each month of each year. This enables him to keep a close check on the handling of his cars by foreign roads, and to check the earnings of his cars under any and all circumstances. He is also in a position to know what other owners' cars are doing on his rails.

Car records, properly maintained and kept up to date, are of great benefit, and serve many purposes of the transportation department in addition to being the basis of the accounting for car hire. The current records are used constantly: To furnish records to the public in connection with shipments in which they are interested. To furnish records to the transportation department, to assist in tracing freight urgently required at destination, or which may have been unduly delayed in transit, or which may be required to be diverted in transit. To furnish location of special class equipment, such as refrigerator, tank, potato, Eastman heaters, palace horse, special grain cars, etc., to enable the car service department to keep them in the special service to which they are allotted or to move them to points where they are required, also to see that such cars are used to full advantage. To furnish car movements, loaded and empty, to the transportation department, to assist in tracing delays and placing responsibility, and to the claims department to assist in locating overs and shorts and disposing of claims. To check the handling of cars on foreign roads and thus overcome unnecessary delays and diversions. To furnish weekly or monthly statements of the distribution of all classes of equipment by districts or divisions. To furnish records of carloads transhipped in transit. To furnish mileage, loaded and empty, made by special class cars of any class. To check the record of foreign equipment to see they are not unduly delayed or used contrary to car service rules. To check repair bills as to location. These are the principal items, but numerous enquiries of all kinds develop each day which can only be answered by reference to the car records.

A record clerk works on the average about six hours a day in entering records, and about two hours a day in furnishing locations, movements and other information.

The car record is the basis of the car hire accounting system, and the car records of foreign equipment handled are usually turned over to the accounting department about the tenth day following the close of the month. The first duty of the clerks on accounts is to ascertain what records are incomplete, i.e., what cars are short an interchange receipt or delivery and to check back against the interchange reports to see if such records were skipped by the record clerks. The second operation is to extend the number of days each car was on the rails, and where there is an incomplete record, to list the initials and number of the car so as to aid the correction staff in completing the records.

Where a missing delivery is involved, per diem is usually allowed up to the date car is last reported moving. In the case of a missing receipt per diem is allowed from the date car first moved. When the record has been completed, the balance of the per diem, if any due, is allowed in a subsequent month's report. After the per diem days have been extended, a per diem report is prepared for each road, showing the car number and the number of days earned, and same is forwarded to the car owner, within 40 days from the last day of the month in which the per diem was earned. On receipt of the per diem report by the car owner, he enters in the record opposite each car the number of days per diem allowed by each road, and after all the per diem reports have been entered, if his records indicate a shortage, he has the privilege of making claim against the road which, according to his records, has short paid the per diem. Such claims to be valid must be issued and handled in accordance with the rules.

In addition to preparing reports for per diem earned currently, reports are also prepared to cover errors and omissions in per diem reports of previous months, to cover switching reclaims, to cover rule 14 reclaims, namely, cars held by one road on account of inability of another road to receive and to cover reclaims due to special conditions.

Under per diem rules, per diem must be paid by a road using a car to the car owner, for each and every day car is in service on that road, but where a road handles a car in terminal switching service for another road, it is entitled to an arbitrary reclaim from the carrier road of an agreed number of days not to exceed five for each car handled in such service. Per diem rule 15 also provides that where a road holds cars on account of the inability of another road to receive them, the holding road is entitled to reclaim from the road on whose account the cars were held, the full amount of per diem involved, always provided that due notice is given in accordance with the rules.

The per diem rules agreement, to which practically all Canadian and United States roads subscribe, is promulgated by the American Railroad Association and lays down rules to govern every phase of per diem accounting. These rules in their original form were adopted and made effective on July 1, 1902. Since that date there have been changes from time to time in the rate, to take care of the increased cost of owning and operating a car. At present the rate is 90c. a day and many roads claim this rate under present conditions is not sufficient compensation to take care of the capital and maintenance charges. The main objection to the rules in their original form was that no penalty was provided for the nonpayment of per diem earned, and as a result the car owner was put to considerable expense to collect what rightly belonged to him. On July 1, 1913, a penalty of 5c. a car a day was made effective when per diem was not paid to the car owner within six months from the last day of the month in which the per diem was earned. At first this rule brought about considerable improvement, but it did not accomplish what was expected of it. To meet this situation, which was the weak spot in the per diem rules agreement, revised rules, with severe penalties for non-payment within a reasonable period, were made effective on Mar. 1, 1920. The next few months will show just how these regulations will work out.

The per diem rules have done more than anything else to force the railways to keep proper car records. While it may be true that the cost of accounting for car hire under per diem rules is much greater than under the mileage plan, yet I doubt very much if you could find a dozen railway car owners who would agree to return to the old method of settlement for car hire on a mileage basis. Under the per diem system a car owner knows exactly what his cars earn, and methods are provided to permit of a proper accounting, whereas, under the mileage plan, the car owner had no means whatever of checking the earnings of his cars on foreign roads, and had virtually to accept whatever was allowed. In the old mileage days, many cases of deliberate dishonesty in accounting were developed, and the conditions helped a great deal in the agitation which was carried on in favor of the adoption of the per diem system.

Car records to be of value must be properly maintained and kept up to date. This can only be accomplished by the hearty co-operation of all concerned in the preparation and handling of the reports and the records. In the car accountant's office surprise checks are used to a great extent, and with good results, to ascertain if the correct and complete information is being recorded in the books. With this system the clerks soon realize that they must do their work properly or make way for others who will. The secret of the whole transaction is system and supervision.

The foregoing paper was read before the Canadian Railway Club, in Montreal, recently.

## Canadian National Railways Earnings.

| | 1920 | 1919 |
|---|---|---|
| January | $ 7,727,562 | $ 6,787,517 |
| February | 6,516,059 | 6,265,562 |
| March | 7,761,326 | 7,160,036 |
| April | 8,207,478 | 6,936,635 |
| May | 8,305,860 | 7,884,287 |
| June | 7,776,538 | 6,433,035 |
| July | 9,003,674 | 7,896,685 |
| August | 9,582,989 | 8,415,864 |
| | $64,421,486 | $57,779,621 |

## Canadian Northern Railway System.

| | 1920 | 1919 |
|---|---|---|
| January | $4,200,700 | $4,026,000 |
| February | 3,862,300 | 3,363,800 |
| March | 4,587,700 | 3,554,350 |
| April | 4,732,623 | 3,878,149 |
| May | 4,863,500 | 4,337,750 |
| June | 4,364,600 | 3,131,000 |
| July | 5,168,500 | 4,347,300 |
| | $31,779,923 | $26,638,349 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $13,914,569 | $13,328,628 | $ 585,941 | *967,571 |
| Feb. | 13,557,104 | 12,843,231 | 713,873 | *267,242 |
| Mar. | 15,715,937 | 13,758,171 | 1,957,766 | 418,721 |
| Apr. | 15,929,416 | 13,587,570 | 2,341,846 | 253,222 |
| May | 16,459,986 | 13,262,044 | 3,197,942 | 164,182 |
| June | 16,480,574 | 13,849,757 | 2,630,817 | *359,604 |
| July | 17,375,761 | 15,756,275 | 1,619,486 | *1,377,218 |
| Aug. | 17,994,769 | 15,793,956 | 2,200,813 | *1,577,355 |
| | $127,428,116 | $112,179,631 | $15,248,485 | *$3,712,865 |
| Incr. | 20,701,832 | 24,414,697 | ..... | ..... |
| Decr. | ..... | ..... | $3,712,865 | ..... |

*Decreases.

The expenses for August include provision for estimated increase under new wage award.

Approximate earnings for 2 weeks ended Sept. 14, $8,249,000, against $7,362,000 for same period 1919.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Decrease |
|---|---|---|---|---|
| Jan. | 5,054,034 | $ 5,867,445 | $ *813,441 | $ 97,406 |
| Feb. | 4,660,831 | 5,159,742 | *498,911 | 188,987 |
| Mar. | 5,756,372 | 5,491,293 | 265,079 | 575,215 |
| Apr. | 5,477,816 | 5,187,340 | 290,476 | 465,592 |
| May | 5,878,934 | 5,547,513 | 331,421 | 337,200 |
| June | 6,645,433 | 6,146,600 | 490,833 | 195,649 |
| July | 7,592,000 | 6,568,053 | 1,023,947 | 111,446 |
| | $41,065,420 | $39,967,986 | $1,097,434 | ..... |
| Incr. | $5,462,833 | $7,043,040 | ..... | ..... |
| Decr. | ..... | ..... | $1,580,207 | ..... |

*Deficit.

# The Canadian Express Company's History.

By John Pullen, President, Canadian Express Co.

Early in 1842, Messrs. Pullin & Copp started a stage express business between New York, Albany, Troy and Saratoga Springs. A little later they connected at Albany and Troy with Virgil & Howard's Express, which operated to Whitehall by stage, thence by boat to Burlington and Plattsburg on Lake Champlain; St. Johns, Que., on the Richelieu River, stage to Laprairie, Que., and across the St. Lawrence to Montreal. The crossing of the St. Lawrence, between Laprairie and Montreal, was effected by scows, propelled with oars. In the winter these scows were pulled over the ice. Late in the season, when open stretches of water were encountered, oars were used, and when the navigation of the open stream was completed the scow was drawn up and again pulled over the ice. These lines were consolidated about 1844 under the name of Pullin, Virgil & Co.'s Express, operating from New York to Albany, through northeastern New York, Vermont, and to the principal cities of eastern Canada.

In 1844, Cheney, Rice & Co. operated a stage express business from Boston to Montreal. Later, they extended their operations from Montreal to Toronto by stage, on runners during the winter, and steamboat during the navigation season.

The United States and Canada Express Co., which was a consolidation of Cheney, Fiske & Co., having facilities on the Boston & Fitchburg and the Worcester & Nashua Roads, as early as 1848; Penniman & Co., operating between Boston and Lowell; and other small lines, was a very important company, under the management of Benjamin P. Cheney, of Boston, and Frank Richardson, Superintendent, at St. Johnsbury, Vt. This line covered a portion of eastern Massachusetts and extended up through New Hampshire and Vermont into Canada.

In 1854, Johnson & Co. started an express from Albany to Rutland and Saratoga, N.Y., with the idea of extending it to Canada, which was later consolidated with Pullin, Virgil & Co. under the name of the National Express Co. This company had express contracts on the following railways: Hudson River; Troy & Boston; Saratoga & Whitehall; Rutland & Washington; Western Vermont; Rutland & Burlington, and Champlain & St. Lawrence.

The Champlain & St. Lawrence Ry. was the first railway built in Canada. It was opened for traffic between Laprairie and St. Johns, Que., 17.38 miles, on July 23, 1836. The first train consisted of four cars, drawn by horses, locomotive power being adopted in 1837. This railway constituted an important link in the through rail and water route between Montreal and New York, via the Richelieu River, Lake Champlain and the Hudson River.

In 1854, a group of Canadian business men formed the British and North American Express Co., with a capital stock of $200,000, to terminate in 10 years from May 1, 1855. The officers were: John P. Forsyth, President; Thos. Kirkpatrick, Vice President; Thos. Robinson, Secretary; E. W. Palmer, Treasurer, and J. C. Clark, General Superintendent. A contract was made with the St. Lawrence & Atlantic (now part of the Grand Trunk) covering express operations between St. Lambert and Richmond, Que., and Portland, Me., also between Richmond and Point Levi, opposite the City of Quebec. Although the railway from Montreal to Toronto and Point Edward (Sarnia, Ont.), was completed in 1855, our information is that the express company operated between Montreal and Toronto and Hamilton by the Royal Mail Line of Steamships during the navigation season, and by stage, on runners, during the winter. The first year was spent in this manner, and a meeting was held in Montreal, at which the representatives of the several express companies operating in Canada were present. The British & North American Express Co. was represented by its Treasurer, E. W. Palmer, and General Superintendent, J. C. Clark; Cheney, Rice & Co., by Benjamin P. Cheney, of Boston, Mass., and Pullin, Virgil & Co. by E. H. Virgil, of Troy, N.Y. The object of the conference was to endeavor, if possible, to consolidate under one name and management the various express companies operating in Canada. After much controversy, these interests referred to above were merged under the name of the British & American Express Co., with a capital stock of $300,000, which company continued to operate until the spring of 1865.

Realizing the importance of British and European trade, the British & American Express Co. established an office at Liverpool in the latter part of May, 1858, with Wm. Blackwood as agent. Upon Mr. Blackwood's death, Wm. Cuthbertson was appointed General Agent, and on the latter's death, E. J. Wearing was appointed and is at present the General Agent of the Canadian Express Co. at Liverpool. The establishment of the agency at Liverpool in 1858 was the nucleus for the extensive European organization of the Canadian Express Co., of which F. C. Salter is European Traffic Manager, with headquarters in London.

On Dec. 8, 1864, a meeting was held at Montreal, of the subscribers to take stock in a new express company to succeed the British & American Co. Wm. G. Fargo occupied the chair. It was resolved that the new company be called the Canadian Express Co.; that a provisional board of directors, consisting of B. P. Cheney, E. H. Virgil, Wm. G. Fargo, Rybert Kent and Thos. Kirkpatrick should obtain a charter for the new company, purchase the British & American Express Co.'s property and good will, and make arrangements for continuing the business from Jan. 1, 1865, until the new company received its charter by letters patent. This was issued Feb. 16, 1865, and read, in part, as follows:—

"That by and with the advice of our executive council of our Province of Canada . . . we do by these our letters patent constitute the said B. P. Cheney, E. H. Virgil, W. G. Fargo, Rybert Kent and Thos. Kirkpatrick, and all and every such other person or persons as now is or are or shall at any time hereafter become shareholders in the said company . . . a body corporate and politic with perpetual succession and a common seal by the name of The Canadian Express Company . . . with power to the said company to carry on the business of forwarding, as also of the constructing, owning, chartering and leasing of ships, steamboaats, wharves, roads and other property required for the purposes of such forwarding business; the operations of the said company to be carried on within our said province, in and over the Grand Trunk Railway of Canada and all its branches, and all other railways . . . and also on all roads, rivers, lakes and other modes of communication within our said province."

The official seal of the Canadian Express Co. shows a pony express rider, which is emblematic of the express service in the early days and the present time rapid transportation of merchandise, money and valuables. But how much more rapid it is today than prior to the advent of the steel highway, when a beaten path or a wagon track constituted the route between the business centers of the country.

The first meeting of the Canadian Express Co. after receiving its charter was held at Montreal, Mar. 15, 1865, when Thos. Kirkpatrick was elected President; Rybert Kent, Secretary-Treasurer, and Gilman Cheney, Superintendent. Semi-annual meetings of the directors were held at New York, Boston or Montreal, as the case might be. On Aug. 12, 1882, the President, B. P. Cheney, Sir R. J. Cartwright, E. H. Virgil, Gilman Cheney and Rybert Kent attended the semi annual meeting at the Profile House, in the White Mountains.

Early in 1866 an arrangement was entered into between the Canadian Express Co. and the American Express Co., whereby, in consideration of the Canadian Express Co. relinquishing the line between Toronto and Hamilton, which was formerly occupied by the British & American Express Co., the American Express Co. turned over to the Canadian company the line between Toronto and Detroit.

On June 14, 1869, a new contract was made between the Canadian Express Co. and the Grand Trunk Ry. Co. Although particulars are lacking, it is presumed that the operations of the express company were extended over new portions of the railway system which had been built or acquired since the previous contract was entered into.

At a meeting of directors at Montreal Jan. 25, 1871, B. P. Cheney was elected President of the company, succeeding Thos. Kirkpatrick, deceased.

In 1872 contracts were made with the Toronto & Nipissing Ry. and the Midland Ry. (both now being part of the G.T.R. System) for the purpose of extending the company's operations over those lines.

At a meeting of directors at Boston, Feb. 1, 1875, a resolution was passed, increasing the company's capital stock from $500,000 to $1,500,000.

In 1877 a contract was made with the Intercolonial Ry. on behalf of the Canadian Express Co. and the Eastern Express Co., which were jointly interested and between which a partnership contract existed in relation to this business. The Eastern Express Co. was changed later to the Intercolonial Express Co., which was operated by the Canadian Express Co. as part of its system east of Riviere-du-Loup, Que., on the Intercolonial Ry.

In 1879 the Canadian Express Co. was operating on the Quebec, Montreal, Ottawa & Occidental Ry. between Montreal and Ottawa; also on the North Shore Ry. between Montreal and Quebec. Both these railways later became part of the C.P.R. System.

On Aug. 15, 1887, Gilman Cheney, Superintendent, was appointed General Manager, and was succeeded as Superintendent by Samuel Chadwick, who retired in 1889. James Bryce, who had been Superintendent at St. John, N.B., since 1882, was appointed Superintendent at Montreal, to succeed Mr. Chadwick. H. C. Creighton, who had been route agent at

Halifax, N.S., succeeded Mr. Bryce as Superintendent at St. John, which position he still occupies.

On Aug. 28, 1888, the American Express Co. agreed with the Canadian Express Co. to withdraw from all G.T.R. lines in Ontario west of Toronto, and transferred its entire business thereon to the Canadian company.

On Oct. 13, 1889, B. P. Cheney tendered his resignation as President, to take effect from Jan. 1, 1890. On Oct. 23, 1889, Gilman Cheney was elected President, the appointment to take effect from Jan. 1, 1890.

On Dec. 29, 1891, an agreement was made between the G.T.R. and the Canadian Express Co. whereby the railway company purchased the express company's capital stock at 43c. on the dollar, thereby becoming the sole shareholder, the express company, however, maintaining its identity.

On Jan. 1, 1892, L. J. Seargeant, General Manager, G.T.R., became President of the Canadian Express Co., and Gilman Cheney, Vice President, an honorary position which he held until his death in 1897. James Bryce continued to occupy the position of Superintendent at Montreal.

In 1896, when the late Chas. M. Hays became Second Vice President and General Manager of the Grand Trunk, he was elected President of the Canadian Express Co., and James Bryce, theretofore Superintendent, was appointed Manager. In 1901, when Mr. Hays retired from the G.T.R. to become General Manager of the Southern Pacific Co., Geo. B. Reeve became Second Vice President and General Manager of the G.T.R. and President of the Canadian Express Co., with James Bryce as Vice President and Manager. When Mr. Hays returned to the G.T.R. in 1902 as Second Vice President and General Manager, he again became President of the Canadian Express Co.

On Oct. 27, 1908, the Canadian Express Co. extended it service over Grand Trunk Pacific Ry. between Winnipeg and Edmonton, 800 miles, and followed the railway as it was built toward the Pacific coast, operating its service as soon as train service was established, and similarly with respect to the various branch lines.

On Oct. 1, 1911, Mr. Hays was elected Chairman of the board of directors of the Canadian Express Co. and was succeeded as President by John Pullen, theretofore Assistant Freight Traffic Manager, G.T.R. System.

On Dec. 1, 1911, the Canadian Express Co. entered into an agreement with the Timiskaming & Northern Ontario Ry. Commission for the operation of its service on that railway between North Bay and Cochrane, 253 miles, which forms one of the important links today in the through express service operated between Toronto and the Canadian northwest.

March 31, 1912, saw the retirement of James Bryce, Vice President and Manager, who had devoted 40 years of his life in the express service, 30 of which were exclusively with the Canadian Express Co.

Upon the death of Mr. Hays in April, 1912, E. J. Chamberlin was elected President of the G.T.R. and Chairman of the board of directors of the Canadian Express Co.

On Sept. 1, 1914, the Canadian Express Co. extended its service through to Prince Rupert, B.C., the Pacific coast terminus of the Grand Trunk Pacific Ry., 1,755 miles from Winnipeg.

Upon the completion of the National Transcontinental Ry. between Cochrane, Ont., and Winnipeg, 777 miles, and the inauguration of a through passenger train service between Toronto and Winnipeg, via G.T.R. to North Bay, T. & N.O.R. to Cochrane, and N.T.R. to Winnipeg, the Canadian Express Co. placed its service in operation between those two cities on July 13, 1915, thus giving an all Canadian transcontinental express route from the Atlantic to the Pacific.

On May 1, 1915, the Canadian Express Co. established its service on the St. John & Quebec Ry., now part of the Canadian National Rys., between Fredericton and Centerville, N.B., 88 miles.

On July 29, 1915, train service having been established on the National Transcontinental Ry. between Monk and Levis, Que., 110 miles; and between Quebec City and Fitzpatrick, Que., 123 miles, the Canadian Express Co. inaugurated an express service between those points.

On Feb. 1, 1916, the Canadian Express Co. extended its service from Fitzpatrick to Parent, Que., 119 miles, the National Transcontinental Ry. having inaugurated a passenger train service between those points.

June 11, 1916, saw the Canadian Express Co. operating through from Quebec City to Winnipeg via the National Transcontinental Ry., train service having been established between Parent, Que., and Cochrane, Ont., 302 miles.

On July 10, 1916, the Canadian Express Co. extended its service on the St. John and Quebec Ry. from Fredericton to Gagetown, N.B., 32 miles.

On July 26, 1916, the Canadian Express Co. placed its service in operation between Monk, Que., and Edmundston, N. B., on the National Transcontinental Ry., 125 miles.

A year later, through trains were operated over the National Transcontinental Ry. between Moncton, N.B., and Levis, Que., train service having been established between Edmundston, N.B., and Moncton, 230 miles. The Canadian Express Co. commenced to operate its service between the two latter points on June 22, 1917.

On Sept. 1, 1917, Howard G. Kelley was elected President of the G.T.R. Co. and Chairman of the board of directors of the Canadian Express Co., succeeding E. J. Chamberlin, who had retired from active railway life a few months previous.

On Jan. 1, 1918, the United States Railroad Administration took over, for operating purposes, certain of the lines of the Grand Trunk Ry. of Canada, located within the United States, viz.: Portland, Me., to Norton Mills, Vt., 165.1 miles; Lewiston Jct., Me., to Lewiston, Me., 5.4 miles; South Paris, Me., to Norway, Me., 1.5 miles; Detroit, Mich., to Port Huron, Mich., 57 miles, over which the Canadian Express Co., up to that time, operated an express service. It being the U.S. Railroad Administration's desire that the express operations on the railways under federal control should be conducted by a unified company, a contract was entered into with the American Railway Express Co. giving that company the exclusive privilege of conducting the express service thereon, effective July 1, 1918, on which date the Canadian Express Co. relinquished its control of the express service on the lines mentioned above; disposed of and transferred to the American Railway Express Co. all its movable property and equipment, and withdrew its representation at and participation in the expenses of the joint offices maintained at the International Boundary, viz., Buffalo, N.Y., Suspension Bridge, N.Y., Port Huron, Mich., and Detroit, Mich. Although the railways returned to private ownership on Mar. 1, 1920, the operation of the express service on the above mentioned lines has been continued by the American Railway Express Co.

On Oct. 20, 1919, the Canadian Express Co. further extended its service on the St. John & Quebec Ry. from Gagetown to St. John, N.B., 48 miles, via Westfield Beach, and the C.P.R., the St. John and Quebec Ry. having secured running rights over the C.P.R. from Westfield Beach to St. John, 13 miles.

In the early days the train messengers were responsible to the company for the charges on all waybills, both prepaid and collect, covering shipments originating at and destined to offices along their routes. They were in reality the company's travelling bankers. The agents remitted direct to the messengers the total of all collect charges on waybills covering shipments destined to their offices, as well as the total prepaid charges (less advance charges, if any) on waybills covering shipments forwarded by them. A messenger would first debit himself with the total of the collect charges on all waybills covering shipments received en route; second, debit agents with the total of the prepaid charges on shipments received en route; third, debit agents with the total of the collect charges on waybills covering shipments detrained by him. Cash books were used, and messengers had to balance their accounts for each trip. The messengers, instead of the agents, as is now the case, were checked up by the auditor, as they were the custodians of the company's cash. A report had to be made to the company at the end of each round trip, consequently it was quite a simple matter for the auditor to form an opinion as to whether there were any irregularities or not. The absence of a remittance for two or three round trips would likely result in the messenger involved having his accounts checked.

Amongst the notable statesmen of Canada who served as directors of the Canadian Express Co., were Sir Richard Cartwright and Sir Alexander Campbell.

Among those prominent in the American Express Co.'s service who commenced their express careers with the Canadian Express Co. are: H. S. Julier, formerly Vice President and General Manager of the Eastern Department, was a train messenger on the Buffalo and Goderich route; J. R. Christie, General Manager of the New York city department, was at one time a clerk in the London, Ont., office; Robt. Mundle, formerly Comptroller, held a clerical position in the Montreal general office; Robt. Balfour, Assistant to Vice President, R. E .M. Cowie, of the Eastern Department, was a wagon man at Montreal.

A prominent man in the express world in the early days was D. T. Irish. Born at Shelburne, Vt., he entered the United States & Canada Express Co.'s service at Burlington, Vt., as a clerk under Wm. Henderson, agent. He went to Montreal at the age of 19 and became General Agent of the British & North American and United States & Canada Express Companies, to which were added later the Canadian Express and National Express Companies.

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Canada Rolling Stock Co. Ltd. has had its registration, under the Nova Scotia Companies Act, revoked by the Nova Scotia Government.

# Mainly About Railway People Throughout Canada.

**F. G. Adams**, who has been appointed Assistant General Freight Agent, Canadian National-Grand Trunk Pacific Rys., Winnipeg, was born at St. John's, Nfld., Apr. 6, 7878, and entered railway service Sept. 4, 1893, since when he has been, to Dec. 31, 1902, clerk, general offices, G.T. R., Montreal; Jan. 1, 1903, to Mar. 31, 1907, Contracting Freight Agent and Travelling Freight Agent, G.T.R., Montreal; Apr. 1, 1907, to Aug. 31, 1908, Contracting Freight Agent, G.T.R., Winnipeg; Sept. 1, 1908, to July 31, 1911, Travelling Freight Agent, G.T.R., Winnipeg; Aug. 1, 1911, to July 14, 1913, Commercial Agent, G. T. Pacific Ry., Regina, Sask.; July 14, 1913, to Apr. 16, 1914, Division Freight Agent, G. T. Pacific Ry., Edmonton, Alta.; Apr. 26, 1914, to Sept. 1, 1920, Commercial Agent, G.T.R., and Division Freight Agent, Grand Trunk Pacific Ry., Winnipeg.

**Walter U. Appleton**, who has been General Superintendent of Rolling Stock, Eastern Lines, Canadian National Rys., Moncton, N.B., was born there, Jan. 29, 1878, and entered railway service, Oct. 12, 1890, since where he has been, to Sept. 1895, junior clerk, Intercolonial Ry., Moncton; Sept. 1895 to May 1899, machinist apprentice, same road; 1900, clerk; 1901 to 1903, machinist; 1905 to 1909, chief clerk to Superintendent of Motive Power; 1909 to 1913, Assistant to Superintendent of Motive Power; 1913 to Feb. 1918, General Master Mechanic; Feb. to Dec. 1918, Superintendent of Motive Power, Canadian Government Rys., all at Moncton; Dec. 1918 to Sept. 15, 1920, Mechanical Superintendent, Eastern Lines, Canadian National Rys., Moncton.

**John Henry Corcoran**, who has been appointed General Travelling Agent, Canadian National Rys., Moncton, N.B., was born at Charlottetown, P.E.I., Sept. 18, 1874, and entered railway service in Oct. 1890, since when he has been, to Nov. 1892, clerk, locomotive house, Intercolonial Ry., Moncton, N.B.; Nov. 1892 to Aug. 1911, clerk, General Passenger Department, Intercolonial Ry., Moncton; Aug. 1911 to Aug. 1919, Travelling Passenger Agent, G.T.R., Moncton; Aug. 1919 to Aug. 1920, General Agent, Passenger Department, G.T.R., Moncton.

**R. Creelman**, whose appointment as Assistant Passenger Traffic Manager, Canadian National and Grand Trunk Pacific Rys., and Grand Trunk Pacific Coast Steamship Co., Winnipeg, was announced in our last issue, entered railway service Sept. 1891, since when he has been, to 1893, messenger, City Freight Agent's office, G.T.R., Toronto; 1893 to 1897, ticket clerk, G.T.R. city office, Toronto; 1897 to 1900, chief clerk, District Passenger Agent's office, G.T.R., Toronto; Jan. 1, 1900, to Aug. 1901, in General Passenger Agent's office, C.P.R., Winnipeg; Aug. 1901, to Sept. 1, 1903, in Passenger Traffic Department, Canadian Northern Ry., Winnipeg; Sept. 1, 1903, to July 1, 1906, City Ticket Agent, Northern Pacific Ry., Winnipeg; July 1, 1906, to July 1, 1909, Travelling Passenger Agent, Canadian Northern Ry., St. Paul, Minn.; July 1 to Oct. 1909, Commercial Agent, Canadian Northern Ry., St. Paul, Minn.; Oct. 1909 to Mar. 1, 1911, Assistant General Passenger Agent, Canadian Northern Ry., Winnipeg; Mar. 1, 1911, to Dec. 31, 1918, General Passenger Agent, Western Lines, Canadian Northern Ry., Winnipeg; Jan. 1, 1919, to Aug. 24, 1920, Assistant Passenger Traffic Manager, Western Lines, Canadian National Rys., Winnipeg.

**Howard Alexander Dixon**, who has been appointed Chief Engineer, Western Lines, Canadian National Rys., and Grand Trunk Pacific Ry., Winnipeg, was born at Sand Hill, Ont., Oct. 7, 1878. He was educated at Jarvis St. Collegiate School, Toronto, and School of Practical Science, Toronto University, graduating with the degree of B.A.Sc., with honors, in 1901. He qualified as Ontario land surveyor in 1903 and Manitoba land surveyor in 1906, and is a member of the American Railway Engineering Association. He entered Canadian Northern Ry. service in 1903, since when he has been, to 1904, draftsman, Winnipeg; 1904 to 1905, Resident Engineer, Winnipeg; 1905 to 1906, Resident Engineer, Fenton, Sask.; 1906 to 1910, Locating Engineer, Western Lines; 1910 to 1912, Division Engineer, Maryfield, Sask.; 1912 to 1915, District Engineer, Resplendent, B.C.;

J. A. MacGregor,
Manager, Edmonton, Dunvegan & British Columbia Ry. and Central Canada Ry.

1915 to Apr. 1919, District Engineer, Vancouver, B.C.; Apr. 1919 to Sept. 1920, Chief Engineer, Western Lines, Canadian National Rys., Winnipeg.

**W. E. Duperow**, whose appointment as General Passenger Agent, west of Duluth, Minn., Port Arthur and Armstrong, Ont., and east of Lucerne, B.C., Canadian National and Grand Trunk Pacific Rys., Winnipeg, was announced in our last issue, was born at Stratford, Ont., Sept. 4, 1872, and entered transportation service Nov. 3, 1893, since when he has been, to Oct. 15, 1894, in G.T.R. service at Seaforth, Ont.; Oct. 15, 1894, to June 1, 1896, ticket clerk, G.T.R., London, Ont.; June 1, 1896, to July 11, 1898, ticket clerk, G.T.R., Toronto; July 11, 1898, to Aug. 1, 1899, theatrical and excursion clerk, General Passenger Agent's office, G.T.R., Toronto; Aug. 1, 1899, to April 19, 1902, chief clerk, same office; April 19, 1902, to Feb. 15, 1907, General Manager, Secretary and Treasurer, Huntsville, Lake of Bays and Lake Simcoe Navigation Co., Huntsville, Ont.; Feb. 15, 1907, to June 1, 1910, Travelling Passenger Agent, G. T.R., Toronto; June 1, 1910, to April 15, 1912, City Passenger Agent, G.T.R., Toronto; June 1, 1910, to April 15, 1912, City Passenger and Ticket Agent, G.T. R. and Grand Trunk Pacific Ry., Victoria, B.C.; Apr. 15, 1912, to Mar. 1, 1914, General Agent, Passenger Department, G.T. R., G.T.P.R., and Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.; Mar. 1, 1914, to Sept. 1, 1917, Assistant General Passenger Agent, G.T.P.R., Winnipeg. Sept. 1, 1917, to Aug. 28, 1920, General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg.

**Leslie Allen Fonger**, who has been appointed Division Freight Agent, Western Lines, Canadian National Rys., and Grand Trunk Pacific Ry., Port Arthur, Ont., was born at St. George, Ont., Dec. 23, 1892, and entered railway service Oct. 23, 1907, since when he has been, to Aug. 2, 1912, stenographer, freight office, C.P.R., Guelph, Ont.; Aug. 6, 1912, to Nov. 30, 1915, clerk, General Freight Department, Canadian Northern Ry., Winnipeg; Dec. 1, 1915, to Sept. 8, 1920, chief clerk, General Freight Department, Canadian National Rys., Winnipeg.

**C. H. R. Fuller**, who has been appointed City Engineer, Chatham, Ont., was for some time engaged as Resident Engineer, on the Danforth section of the Toronto Civic Ry., and subsequently was an Assistant Engineer for the Toronto Harbor Commissioners. He spent about 3½ years on active service in France and Belgium, first as Captain in the 216th Battalion, C.E.F., and later in the 10th Battalion Canadian Railway Troops. He has written a booklet on the employment of light railways in modern warfare.

**John Macneill Grieve**, who has been appointed General Superintendent, Sleeping, Dining and Parlor Cars and News Service, Canadian National-Grand Trunk Pacific Rys., Toronto, was born in Scotland, Aug. 25, 1870, and entered railway service in July, 1900, since when he has been to Sept. 1900, waiter, Intercolonial Ry., Halifax, N.S.; Sept. 1900 to Apr. 1907, waiter and steward, C.P.R., Montreal; May 1907 to Apr. 1908, waiter; Apr. 1908 to Mar. 1910, dining car steward, Mar. 1910 to Mar. 1912, Inspector, Mar. 1912 to Apr. 1915, Chief Inspector, Apr. 1915 to Oct. 1917, Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Canadian Northern Ry., Winnipeg; Oct. 1917 to May 1, 1920, Superintendent, same department, Canadian Northern Ry., afterwards Canadian National Rys., Winnipeg; May 1 to Sept. 1, 1920, General Superintendent, Sleeping, Dining and Parlor Cars and News Service, Canadian National Rys., Toronto.

**Walter Hately**, who has been appointed Assistant General Freight Agent, Canadian National Rys., Western Lines, and Grand Trunk Pacific Ry., Winnipeg, was born at Brantford, Ont., Mar. 5, 1887, and entered railway service in Mar. 1904, since when he has been, to Aug. 1908, clerk, local freight office, G.T.R., Hamilton, Ont.; Aug. 1908 to Sept. 1909, accountant, Superintendent's office, G.T. R., Toronto; Sept. 1909 to Oct. 1913, clerk, Freight Tariff Bureau, G.T.R., Montreal; Oct. 1913 to Oct. 1915, clerk, Freight Tariff Bureau, Canadian Northern Ry., Winnipeg; Oct. 1915 to Jan.

1919, Chief of Tariff Bureau, Canadian Northern Ry., Winnipeg; Jan. 1919 to Aug. 28, 1920, Assistant General Freight Agent, Western Lines, Canadian National Rys., Winnipeg.

**John Andrew Heaman**, B.Sc., who has been appointed Assistant Chief Engineer, Western Lines, Canadian National Rys., and Grand Trunk Pacific Ry., Winnipeg, was born at Memphis, Tenn., June 3, 1874, and was educated in public school and at Collegiate Institute, London, Ont., and McGill University, graduating in 1902. He served as an articled pupil to Moore and Henry, engineers and surveyors, London, Ont., from 1893 to 1898, and holds diplomas as Dominion and Ontario Land Surveyor. He entered railway service in Apr. 1901, since when he has been to Sept. 1901, instrument man, G.T.R., St. Catharines and Port Union, Ont.; Apr. to Nov. 1902, Resident Engineer, G.T.R., Oshawa, Ont.; Nov. 1902 to Nov. 1903, Assistant Resident Engineer, G.T.R., Toronto; Nov. 1903 to May 1905, Assistant Engineer in charge of location party east of Winnipeg, Grand Trunk Pacific Ry.; May 1905 to Nov. 1906, Division Engineer in charge of location and construction east of Winnipeg, National Transcontinental Ry.; Nov. 1906 to Oct. 1908, Assistant District Engineer, N.T.R., Ont.; Oct. 1908 to June 1910, Assistant District Engineer, G.T.P.R., Kenora, Ont., and Winnipeg; June 1910 to Apr. 1911, District Engineer, G.T.P.R., Winnipeg; Apr. 1911 to Mar. 1912, Office Engineer, G.T.P.R., Winnipeg; Mar. to Aug. 1912, Division Engineer, G.T.P.R., Jasper, Alta.; Aug. 1912 to Nov. 1, 1917, Assistant to Chief Engineer, G.T.P.R., Winnipeg; Nov. 1, 1917, to Sept. 1, 1920, Assistant Chief Engineer, G.T.P.R., Winnipeg.

**J. M. Horn**, whose appointment as General Freight Agent, Canadian National and Grand Trunk Rys., Winnipeg, was announced in our last issue, was born at Allanton Mills, Lanarkshire, Scotland, Apr. 12, 1880, and entered railway service in July, 1890, since when he has been, to 1900, abstract clerk and biller; 1900 to 1901, checker, local freight office, Northern Pacific Ry., Winnipeg; May 1901 to 1902 rate clerk, local freight office, Canadian Northern Ry., Winnipeg; 1902 to Apr. 1904, chief clerk to Local Freight Agent, same road, Winnipeg; Apr. 1904 to May 1909, City Freight Agent, same road, Winnipeg; May 1909 to Mar. 1916, District Freight Agent, same road, Edmonton, Alta.; Mar. 1916 to Dec. 31, 1918, Assistant General Freight Agent, Western Lines, same road, Winnipeg; Jan. 1, 1919, to Aug. 28, 1920, General Freight Agent, Western Lines, Canadian National Rys., Winnipeg.

**Samuel J. Hungerford**, who has been appointed Vice President, Operation and Maintenance, Canadian National Rys., Toronto, was born near Bedford, Que., July 16, 1872, and entered railway service in May, 1886, since when he has been, to Feb. 1891, machinist apprentice, South Eastern Ry., and C.P.R., Farnham, Que.; May 1891 to Aug. 1894, machinist at various points in Quebec, Ontario and Vermont; Sept. 1894 to Aug. 1897, charge man, C.P.R., Windsor St., Montreal; Aug. 1897 to Apr. 1900, Assistant Foreman, C.P.R., Farnham, Que.; Apr., 1900 to Feb. 1901, Locomotive Foreman, C.P.R., Megantic Que.; Feb. to Sept. 1901, General Foreman, C.P.R., Cranbrook, B.C.; Feb. 1903 to Jan. 1904, Masted Mechanic, C.P.R., Western Division, C.P.R., Calgary, Alta.; Jan. 1904 to Dec. 1907, Superintendent, Locomotive Shops, C.P.R., Winnipeg; Jan. 1908 to Feb. 1910, Superintendent of Shops, C.P.R., Winnipeg, Man.; Mar. 1910 to Apr. 1915, Superintendent of Rolling Stock, Canadian Northern Ry., Winnipeg; May 1915 to Nov. 1, 1917, Superintendent of Rolling Stock, C.N.R., Toronto; Nov. 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, C.N.R., Toronto; Dec. 1918 to Sept. 1920, Assistant Vice President, Operation, Construction and Maintenance, Canadian National Rys., Toronto.

**Thomas King**, Superintendent, Detroit Division, Western Lines, G.T.R., Durand, Mich., whose territory has been reorganized, was born at Dunbarton, Ont., July 18, 1869, and entered G.T.R. service Mar. 28, 1885, since when he has been, to Oct. 7, 1885 switch man, Pickering, Ont.; Oct. 8, 1885, to Oct. 1886, operator, Sidney, Ont.; Nov. 1, 1886, to Dec. 1889, operator, York, Ont.; Jan. 1, 1890, to June 1907, operator, Don Station, Toronto; July 1, 1897, to Oct. 1898, ticket clerk, Oshawa, Ont.; Nov. 1898 to Jan. 1899, operator, Belleville, Ont.; Jan. 1890 to Aug. 1902, agent, Whitby, Ont.; Aug. 1902 to May 1905, agent, Brockville, Ont.;

J. A. Heaman,
Assistant Chief Engineer, Western Lines, Canadian National Rys. and Grand Trunk Pacific Ry.

May 1905 to Nov. 1907, agent, Sherbrooke, Que.; Nov. 1907 to May 1909, agent, Lewiston, Me.; May 1900 to Aug. 1910, Travelling Passenger Agent, Montreal; Aug. 1910 to Dec. 1912, agent, Pontiac, Mich.; Dec. 1912 to Sept. 1, 1917, agent, Detroit, Mich., and from Sept. 1, 1917, Superintendent, Detroit Division, Detroit, Mich.

**Joseph Gaston Legrand**, who has been appointed Bridge Engineer, Western Lines, Canadian National Rys., and Grand Trunk Pacific Ry., Winnipeg, was born at Sompuis, Marne, France, Dec. 24, 1861. He underwent officers' training in the French Army in 1881 and 1882, and from 1882 to 1887 was chainman and instrument man on the French Government Railways in Ardennes; from 1887 to 1889, engineer in charge for the contractor on fortification works at Verdun; and from 1889 to 1891, engineer in charge of construction of mining plant for the Hafna Mining & Smelting Co., Llanrwst, North Wales. He came to Canada June 9, 1891, and has been, from 1891 to 1893, Assistant to J. A. U. Beaudry, civil engineer, Montreal 1893 to 1903, structural draftsman, checker and designer, Dominion Bridge Co., Montreal; 1903 to 1906, Assistant Chief Engineer, Structural Department, Locomotive & Machine Co., Montreal; 1906 to 1908, Bridge Engineer, Grand Trunk Pacific Ry., Montreal; 1908 to 1920, Bridge Engineer, Grand Trunk Pacific Ry., Winnipeg. In 1907 he was asked by the Minister of Railways and Canals to act on a board appointed to decide on a design for the Quebec Bridge. From 1912 to 1914, he was Consulting Bridge Engineer for Edmonton, Dunvegan & British Columbia Ry., and Pacific Great Eastern Ry., and was also designing engineer for the Provencher bridge over the Red River between St. Boniface and Winnipeg. During his service with the Grand Trunk Pacific Ry., through its construction period, he was responsible for the design of its permanent bridges, stations, locomotive houses, coaling and fuel oil stations, power and heating plans, warehouses and wharves. He is a member of the Engineering Institute of Canada and of the American Railway Engineering Association.

**James Alexander MacGregor**, who has been appointed Manager, Edmonton, Dunvegan & British Columbia Ry., and Central Canada Ry., Edmonton, Alta., was born at Dufftown, Scotland, Apr. 5, 1873, and entered C.P.R. service May, 1892, since when he has been to Feb. 1903, clerk, stenographer, chief statistical clerk and Travelling Car Agent, Montreal; Feb. 1903 to June 1904, Car Service Agent, Winnipeg; June 1904 to Oct. 1908, Assistant Superintendent Car Service, Winnipeg; Oct. 1908 to Oct. 1909, Superintendent, Souris, Man.; Nov. 1909 to Sept. 1913, Superintendent, Brandon, Man.; Sept. 1913 to July 1914, Relieving Superintendent on various divisions; Aug. 1914 to July 1920, Superintendent, Edmonton Division, Alberta District, C.P.R., Edmonton.

**T. C. Machett**, town ticket agent, C.P.R., and agent, Dominion Ex. Co., Lindsay, Ont., died there Sept. 24, aged 64, following a paralytic stroke.

**M. H. MacLeod**, Vice President, Operation, Maintenance and Construction, Canadian National Rys., returned to Toronto recently, after spending several months in the prairie provinces and on the Pacific coast, but has not yet resumed active service, owing to ill health.

**W. G. Manders**, whose appointment as Assistant Freight Traffic Manager, Canadian National and Grand Trunk Pacific Rys., and Grand Trunk Pacific Coast Steamship Co., Winnipeg, was announced in our last issue, was born at Owen Sound, Ont., July 24, 1876, and entered railway service in Apr. 1897, since when he has been to Feb. 1901, clerk and stenographer, Local Freight Office, C.P.R., Owen Sound, Ont.; Feb. to July 1901, chief clerk, Local Freight Office, C.P.R., Fernie, B.C.; July 1901 to Dec. 31, 1903, clerk, General Freight Office, Canadian Northern Ry., Winnipeg; Jan. 1, 1904, to Jan. 1, 1907, chief clerk in charge of loss and damage and overcharge freight claims, General Freight Office, C.N.R., Winnipeg; Jan. 1, 1907, to May 1, 1909, chief clerk, Freight Traffic Department, C.N.R., Winnipeg; May 1, 1909, to Feb. 29, 1916, Assistant General Freight Agent, C.N.R., Winnipeg; Mar. 1, 1916, to Jan. 1, 1919, General Freight Agent, Western Lines, Canadian Northern Ry., Winnipeg; Jan. 1, 1919, to Aug. 24, 1920,

Assistant Freight Traffic Manager, Western Lines, Canadian National Rys., Winnipeg.

Richard Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., who died there, June 8, is reported, in a press dispatch, as having left an estate valued at $604,232 to his family and grandchildren.

Henry Hilaire Melanson, who appointment as Passenger Traffic Manager, Canadian National and Grand Trunk Pacific Rys., and Grand Trunk Pacific Coast Steamship Co., Toronto, was announced in our last issue, was born at Scadouc, N.B., Mar. 9, 1872, and entered Government railway service Nov. 18, 1889, since when he has been, to Aug. 1892, clerk in Mechanical Department, Intercolonial Ry.; Aug. 1892 to Dec. 1899, clerk in Passenger Department; Dec. 1899 to Mar. 1901, chief clerk, Passenger Department; Mar. 1901 to May 1903, General Baggage Agent; May 1903 to Nov. 1909, chief clerk, Passenger Department; Nov. 1909 to May 1913, Assistant General Passenger Agent; June 1913 to June 1917, General Passenger Agent; June 1917 to Jan. 1, 1919, Passenger Traffic Manager, Canadian Government Rys., all at Moncton, N.B.; Jan. 1, 1919, to Aug. 24, 1920, Passenger Traffic Manager, Canadian National Rys., Toronto.

A. J. Mitchell, Vice President, Finance and Accounts, Canadian National Rys., left Toronto Sept. 28 for a business trip to England.

C. H. Nicholson, who has been appointed Manager of Steamships with jurisdiction over floating equipment under operation by Western Lines, Canadian National Rys., and Grand Trunk Pacific Ry., Vancouver, B.C., was born at Belleville, Ont., and was educated there, at Queen's University, Kingston, Ont., and at the University of Maryland, Baltimore. He entered transportation service with the Richelieu & Ontario Navigation Co., and subsequently became purser on one of the steamers operated by C. F. Gildersleeve, on the Bay of Quinte and River St. Lawrence. He remained as purser for three years, and became captain, having charge successively of the Hero, Hastings, Norseman and North King. When C. F. Gildersleeve organized the Lake Ontario and Bay of Quinte Steamboat Co., he became General Freight Agent, and until 1903 represented its interests in the U.S., with headquarters at Rochester, N.Y. During the season of 1903 he was Manager of Transportation, Muskoka Lakes Navigation & Hotel Co., at Gravenhurst, and from Feb., 1904, to Nov. 30, 1909, was Traffic Manager, Northern Navigation Co., Sarnia, Ont.; Nov. 30, 1909, to Sept. 1, 1920, Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.

S. N. Parent, formerly Chairman, National Transcontinental Railway Comsion, died at Quebec, Que., Sept. 7, after a long illness. He was born at Beauport, Que., Sept. 12, 1855, and practised law for several years, becoming a K.C. in 1899. He was Mayor of Quebec from 1894 to 1905, and represented St. Sauveur in the Legislature from 1890 to 1905, and from 1900 to his resignation in March, 1905, was Premier of the province. He was President of the Quebec Bridge Co., 1897 to 1908, when the construction of the first bridge was undertaken, and which collapsed in its earlier stages. He was also a director of the Quebec Ry., Light & Power Co., the Quebec & Lake St. John Ry. Co., and from 1900 to 1911 was Chairman, National Transcontinental Ry. Commission.

W. J. Ptolemy, Deputy Treasurer for Manitoba, died suddenly at Winnipeg, Sept. 10. He was born near Smithville, Ont., in 1850, and from June, 1873, to May, 1875, served in the Engineering Department of the Great Western Ry. (now G.T.R.), and was also engaged on the construction of telegraph lines with Fuller and Milne's telegraph construction party, and for the Dominion Government, on the C.P.R., between Fort Pelly and Fort Edmonton.

Hon. J. R. Reid, Minister of Railways and Canals, sailed from New York, Sept. 18, for England, accompanied by Mrs. and Miss Reid, expecting to be away about two months. Hon. A. L. Sifton is acting Minister, during his absence.

R. S. Richardson, Superintendent, Canadian National Rys., Fort William, Ont., left there early in September on a trip to the Pacific coast, going direct to Vancouver and thence to Prince Rupert, B.C. He will go east as far as Quebec before returning to Fort William.

Alfred E. Rosevear, who has been appointed General Freight Agent, Western Lines, Canadian National Rys., and Grand Trunk Pacific Ry., Winnipeg, was born at Montreal, Feb. 20, 1863, and entered railway service May 21, 1878, since when he has been, to Apr. 15, 1880, clerk, Motive Power Department, G.T.R., Montreal; Apr. 15, 1880, to Apr. 13, 1886, clerk, General Superintendent's office, G.T.R., Montreal; Apr. 13, 1886, to July 31, 1890, clerk, General Manager's office, G.T.R., Montreal; July 31, 1890, to Aug. 1, 1890, accountant, Freight Traffic Department, G.T.R., Chicago, Ill.; Aug. 1, 1891, to Oct. 1, 1898, accountant, Freight Traffic Department, G.T.R., Detroit, Mich.; Oct. 1, 1898, to Apr. 19, 1908, Freight Claim Agent, G.T.R., Montreal; Apr. 19, 1908, to Nov. 1, 1912, Assistant General Freight Agent, G.T.R., Montreal; Nov. 1, 1912, to June 30, 1913, Assistant to Vice President (Traffic), G.T.R. and Grand Trunk Pacific Ry., Montreal; July 1, 1913, to Aug. 28, 1920, General Freight Agent, Grand Trunk Pacific Ry., Winnipeg.

J. G. Legrand,
Bridge Engineer, Western Lines, Canadian National Rys. and Grand Trunk Pacific Ry.

Mrs. A. E. Rosevear, wife of the General Freight Agent, Western Lines, Canadian National Rys. and Grand Trunk Pacific Ry., and the Misses Rosevear, have returned to Winnipeg after spending the summer at St. Lambert, Que.

Mrs. A. L. Sauve, wife of the C.P.R. City Ticket Agent, Ottawa, Ont., died there recently.

Lord Shaughnessy, Chairman, C.P.R. Co., is chairman of a Montreal citizens committee, which is co-operating with McGill University authority, to raise $500,000 for the university purposes.

Mrs. G. W. Shibley, of Woodstock, Ont., who died Sept. 19, aged 72, after a long illness, was a sister of Geo. H. Ham, of the Canadian Pacific Ry. headquarters staff, Montreal.

Angus William Sinclair, son of Angus Sinclair, railway contractor, Toronto, was married there Sept. 25 to Miss A. H. Kay.

Lorne Cameron Thomson, who has been appointed General Storekeeper, Eastern Lines, Canadian National Rys., Toronto, was born at Kingston, Ont., Nov. 25, 1882, and entered railway service, in Mar. 1897, since when he has been, to June 1898, requisition clerk, Stores Department, Delorimier Ave. Shops, C.P.R., Montreal; June 1898 to Apr. 1889, billing clerk, Stores Department, C.P.R., Hochelaga, Montreal; Apr. 1899 to June 1900, timekeeper, car shops, C.P.R., Hochelaga, Montreal; June 1900 to Mar. 1901, Storekeeper, C.P.R., Quebec, Que.; Mar. 1901 to June 1902, Storekeeper, C.P.R., Brownville Jct., Me.; June 1902 to Nov. 1903, Division Storekeeper, C.P.R., McAdam Jct., N.B.; Nov. 1903 to June 1904, relieving storekeeper, Eastern Lines, C.P.R.; June 1904 to Oct. 1905, Storekeeper, section A, Angus shops, C.P.R., Montreal; Oct. 1905 to Mar. 1907, chief clerk, General Storekeeper, Angus shops, C.P.R., Montreal; Mar. 1907 to July 1909, Storekeeper, Ontario Lines, Canadian Northern Ry., Parry Sound, Ont.; July 1909 to Nov. 1912, Division Storekeeper, Ontario and Quebec Lines, Canadian Northern Ry., Toronto; Nov. 1912 to Feb. 20, 1916, General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto; Feb. 20, 1916, to Jan. 14, 1919, Superintendent Transportation, Imperial Munitions Board, Ottawa, Ont.; Jan. 14 to Apr. 1919, General Storekeeper, Eastern Lines, Canadian National Rys., Toronto; Apr. 1919 to Sept. 7, 1920, General Storekeeper, Canadian Car & Foundry Co., Montreal.

William Walkden, who has been appointed Assistant Bridge Engineer, Western Lines, Canadian National Rys. and Grand Trunk Pacific Ry., Winnipeg, was born at Alderley Edge, Cheshire, Eng., June 1, 1885, and served as an indentured pupil and assistant with P. Pierce & Son, Architects and Engineers, Stockport, Eng., from Oct. 1902 to July 1907. He entered tnarsportation service in Nov. 1907, since when he has been, to July 1909, draftsman, Engineering Department, Canadian Northern Ry.; July 1909 to May 1912, draftsman and Assistant Engineer, Bridge Engineer's Department, same road; May to Nov. 1912, chief draftsman, same road; Nov. 1912 to Feb. 1917, Assistant to Bridge Engineer, same road; Feb. 1917 to Apr. 1919, acting Bridge Engineer, same road; Apr. 1919 to Sept. 1, 1920, Bridge Engineer, G.T.P.R., Winnipeg.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Board of Railway Commissioners.**—A. E. ECCLESTONE, chief clerk, Secretary's Department, has resigned, and J. B. Arbick is acting in that capacity.

**Canadian Government Merchant Marine, Ltd.**—W. A. CUNNINGHAM, heretofore Export and Import Freight Agent, Canadian National Rys., Montreal, and who, since July, 1919, attended to the booking of traffic intended for C.G.M.M. ships, has been appointed acting General Freight Agent, C.G.M.M., in complete charge of all traffic matters in respect to this company. Office, 230 St. James St., Montreal.

J. P. DOHERTY, heretofore Port Agent, St. John, N.B., is reported to have been appointed Assistant General Freight Agent, at Montreal.

H. E. KANE, heretofore Assistant Port Agent, is reported to have been appointed Porth Agent, St. John, N.B., vice J. D. Doherty, promoted.

The following representatives have been appointed in the West Indies for Canadian Government Merchant Marine Ltd., and Canadian National Rys.:—Bridgetown, Barbados, Gardiner Austin & Co.; Georgetown, Demerara, Sandbach, Parker & Co.; Kingston, Jamaica, Jamaica Shipping & Trading Co.; Trinidad, Geo. F. Huggins & Co.

**Canadian National Rys.**—Owing to increased work, caused by the additional mileage, including the Grand Trunk Pacific Ry., brought under the C.N.R. management, it has been found necessary to divide the Construction, Operation and Maintenance Department. M. H. MACLEOD, heretofore Vice President, Operation, Construction and Maintenance, has been appointed Vice President in charge of Construction. S. J. HUNGERFORD, heretofore Assistant Vice President, Operation, Construction and Maintenance, has been appointed Vice President in charge of Operation and Maintenance. Offices, Toronto.

W. U. APPLETON, heretofore Mechanical Superintendent, Eastern Lines, has been appointed General Superintendent of Rolling Stock, Eastern Lines, and his former position has been abolished. Office, Moncton, N.B.

D. M. CRAWFORD, heretofore General Agent, Cleveland, Ohio, has been appointed General Agent, Pittsburg, Pa., vice F. G. Wood, appointed Ontario Freight Agent, Canadian Government Merchant Marine.

G. R. EDGLEY, heretofore Superintendent, St. Maurice Division, Quebec District, Quebec, Que., has been appointed Superintendent, Ottawa Division, Quebec District, vice W. R. Kelly, transferred. Office, Ottawa, Ont.

G. N. GOAD, heretofore Superintendent, Superior Division, Ontario District, Hornepayne, Ont., has been appointed Superintendent, Nipissing Division, Ontario District, vice G. A. Hoag, appointed Superintendent of Transportation. Office, Capreol, Ont.

F. GRIFFIN, heretofore Assistant Superintendent, District 1, Quebec Division, Levis, Que., has been appointed Superintendent, St. Maurice Division, Quebec District, vice G. R. Edgley, transferred. Office, Quebec, Que.

G. A. HOAG, heretofore Superintendent, Nipissing Division, Ontario District, Capreol, Ont., has been appointed Superintendent of Transportation, Ontario District. Office, Toronto.

W. R. KELLY, heretofore Superintendent, Ottawa Division, Ottawa, Ont., has been appointed Superintendent, Montreal Division, vice J. J. Sunderland, appointed Superintendent of Transportation. Office, Montreal.

M. LANCASTER, heretofore locomotive man, Hanna, Alta., has been appointed Assistant Air Brake Instructor, Sioux Lookout, Ont.

J. J. NAPIER has been appointed Superintendent, Superior Division, Ontario District, vice G. N. Goad, transferred. Office, Hornepayne, Ont.

J. H. PAKENHAM has been appointed Assistant Superintendent of Terminals, with jurisdiction between Quebec bridge and Palais station and Ste. Foye to Quebec, vice J. A. Trudel. Office, Palais station, Que.

S. J. Hungerford,
Vice President, Operation and Maintenance, Canadian National Railways.

W. E. RIVERS has been appointed Division Engineer, Kamloops Division, Pacific District. Office, Kamloops Jct., B.C.

F. A. SHAW, heretofore General Agent, Freight and Passenger Department, C.N.R., Detroit, Mich., has been appointed General Agent, Cleveland, Ohio, vice D. M. Crawford, transferred.

J. J. SUNDERLAND, heretofore Superintendent, Montreal Division, Quebec District, Montreal, has been appointed Superintendent of Transportation, Quebec District. Office, Quebec, Que.

L. C. THOMSON, formerly General Storekeeper, Eastern Lines, Canadian National Rys., and latterly General Storekeeper, Canadian Car & Foundry Co., Montreal, has been appointed General Storekeeper, Eastern Lines, C.N.R., vice W. D. Stewart. Office, Toronto.

J. A. TRUDEL, heretofore Assistant Superintendent of Terminals, Quebec, Que., has been appointed Assistant Superintendent, Levis Division, Quebec District, vice F. Griffin, promoted. Office, Levis, Que.

See also Canadian Government Merchant Marine Ltd.

**Canadian National Rys.-Grand Trunk Pacific Ry.**—In connection with the placing of the G.T.P.R. under the Canadian National Rys. board, the jurisdiction of the following C.N.R. officials has been extended over the G.T.P.R.:—

H. G. FOREMAN, Treasurer, Canadian Northern Ry. System, Toronto;

C. E. FRIEND, Comptroller, Canadian Northern Ry. System, Toronto;

J. M. GRIEVE, General Superintendent, Sleeping, Dining and Parlor Cars and News Service, Canadian National Rys., Toronto;

R. M. MITCHELL, Right of Way and Property Commissioner, Canadian National Rys., Toronto;

WM. PHILLIPS, European Manager, Canadian National Rys., London, Eng.;

W. PRATT, Manager, Sleeping, Dining and Parlor Cars and Hotels, Canadian National Rys., Toronto;

G. E. SMART, General Master Car Builder, Canadian National Rys., Toronto;

E. B. WALKER, Electrical Engineer, Canadian National Rys., Toronto;

T. G. WATSON, Tax Commissioner, Canadian National Rys., Toronto. He will now supervise all matters of assessment and taxation, relating to lands of the former Canadian Northern Ry. Co., and its subsidiary lines, together with the Intercolonial, National Transcontinental and Grand Trunk Pacific Rys.

**Canadian National Rys. Western Lines-Grand Trunk Pacific Ry.**—In connection with the placing of the G.T.P.R. under the Canadian National Rys. Board, the jurisdiction of the following officials has been extended over both lines:—

J. M. BANNERMAN, Chief Special Agent, Western Lines, C.N.R., Winnipeg;

H. P. BLAKE, Engineer of Water Supply, Western Lines, C.N.R., Winnipeg;

W. C. BLAKE, Divisional Accountant, C.N.R., Winnipeg;

W. BURNS, Engineer of Construction, Western Lines, C.N.R., Winnipeg;

A. E. COX, General Storekeeper, Western Lines, C.N.R., Winnipeg;

E. CRAWFORD, Superintendent of Car Service, Western Lines, C.N.R., Winnipeg;

H. A. DIXON, Chief Engineer, Western Lines, C.N.R., Winnipeg;

J. P. DRISCOLL, General Superintendent of Car Service, C.N.R., Toronto;

A. H. EAGER, Mechanical Superintendent, Western Lines, C.N.R., Winnipeg;

A. G. GILMOUR, Freight Claim Agent, C.N.R., Winnipeg;

J. A. HEAMAN, Assistant Chief Engineer, G.T.P.R., Winnipeg;

J. G. LEGRAND, Bridge Engineer, G.T.P.R., Winnipeg;

J. M. LENEY, Assistant Chief Medical Officer, G.T.P.R., Winnipeg;

S. J. LUPTON, Chief Boiler Inspector, Western Lines, C.N.R., Winnipeg;

A. McCOWAN, Master Car Builder, Western Lines, C.N.R., Winnipeg;

C. H. NICHOLSON, Manager, G.T.P. Coast Steamship Co., Vancouver, B.C., Manager of Steamships, with jurisdiction over all floating equipment under the direction of the railways;

W. LeB. ROSS, Local Treasurer, G.T.P.R., Winnipeg;

A. A. TISDALE, Assistant to General Manager, G.T.P.R., Winnipeg.

F. G. ADAMS, heretofore Commercial Agent, G.T.R., Winnipeg, has been appointed Assistant General Freight Agent, C.N.R. and G.T.P.R., with supervision of the solicitation of freight traffic. Office, Winnipeg.

R. H. BELL, heretofore Division Freight Agent, C.N.R., Edmonton, Alta., has been appointed Division Freight Agent, Canadian National and Grand Trunk Pacific Rys., there.

E. BOWER, heretofore Travelling Passenger Agent, C.N.R., Regina, Sask., has been appointed Travelling Passenger Agent, C.N.R. and G.T.P.R., Vancouver, B.C.

A. BROSTEDT, heretofore Assistant General Freight Agent, C.N.R., Vancouver, has been appointed General Freight Agent, C.N.R. and G.T.P.R., with supervision of territory Lucerne, B.C., and west, and including G.T. Pacific Coast Steamship Co. Office, Vancouver, B.C.

C. H. BROWN, heretofore Assistant Superintendent, G.T.P.R., Edmonton, has been appointed Superintendent of Transportation, Western District, C.N.R. and G.T.P.R. Office, Edmonton, Alta.

W. A. BROWN, General Superintendent, Western District, C.N.R., Edmonton, Alta., has had his jurisdiction extended over G.T.P.R. lines, Edmonton to Biggar, both inclusive, Tofield to Calgary, Biggar to Loverna, Oban to Battleford, and Battleford to Carruthers.

J. D. CAMERON, heretofore City Freight Agent, C.N.R., Victoria, B.C., has been appointed Travelling Freight Agent, C.N.R. and G.T.P.R., Vancouver, B.C.

A. D. CAREY, heretofore Superintendent, G.T.P.R., Edson, Alta., has been appointed Superintendent, Canadian National and Grand Trunk Pacific Rys., with territory as hitherto. Office, Edson, Alta.

B. T. CHAPPELL, General Superintendent, Prairie District, C.N.R., Moose Jaw, Sask., has had his jurisdiction extended over G.T.P.R. lines,—Biggar to Watrous, Young to Prince Albert, Melville to Regina, Regina to Riverhurst, Regina to Northgate, and Talmage to Weyburn.

R. CHISHOLM, Inspector of Agencies, C.N.R., Winnipeg, has had his territory re-arranged as follows,—all C.N.R. lines west of Armstrong, Ont., west of and including Port Arthur, Ont., to, and including, Edmonton, Alta.; Stony Plains, St. Albert, Athabaska and Onoway Subdivisions, and all G.T.P.R. lines east of, and including, Edmonton, Alta.

F. J. CREIGHTON, heretofore City Ticket Agent, C.N.R., Winnipeg, has been appointed City Ticket Agent, C.N.R. and G.T.P.R., there.

J. W. CONNELL has been appointed Assistant Freight Claim Agent, Loss and Damage Claims. Office, Winnipeg.

W. G. CONNOLLY, heretofore City Passenger and Ticket Agent, G.T.P.R., Vancouver, B.C., has been appointed City Passenger Agent, C.N.R. and G.T.P.R., there.

G. A. CUNCLIFFE has been appointed Superintendent, with jurisdiction over the following lines: Brandon to Regina; Maryfield to Radville; Luxton to Estevan; Radville to Bengough; Verdun to Belmont; and M. & B. Jct. to Hartney Jct. Office, Brandon, Man.

A. DAVIDSON, heretofore Commercial Agent, G.T.P.R., Vancouver, has appointed Division Freight Agent, C.N.R. and G.T.P.R., with supervision over Grand Trunk Pacific Coast Steamship Co.'s traffic. Office, Vancouver, B.C.

J. E. DAVISON has been appointed Assistant to Chief Engineer, C.N.R., Western Lines, and G.T.P.R., Winnipeg.

L. V. DRUCE, heretofore Division Freight Agent, G.T.P.R., Edmonton, Alta., has been appointed Commercial Agent, C.N.R. and G.T.P.R., there.

C. F. EARLE, heretofore City Passenger and Ticket Agent, G.T.P.R., Victoria, B.C., has been appointed District Passenger Agent, C.N.R. and G.T.R., there.

L. A. FONGER, heretofore chief clerk, Freight Department, C.N.R., Winnipeg, has been appointed Division Freight Agent, C.N.R., and G.T.P.R., Port Arthur, Ont., vice J. R. Scott, promoted.

H. K. GAYS, heretofore City Freight Agent, C.N.R., Winnipeg, has been appointed Division Freight Agent, C.N.R. and G.T.P.R., Brandon, Man.

S. M. GREENE, heretofore City Passenger and Ticket Agent, G.T.P.R., Regina, Sask., has been appointed City Ticket Agent, C.N.R. and G.T.P.R., there.

E. HACKING, heretofore Master Car Builder, G.T.P.R., Transcona, Man., has been appointed Assistant Master Car Builder, C.N.R. and G.T.P.R. Office, Winnipeg.

W. U. Appleton,
General Superintendent of Rolling Stock, Eastern Lines, Canadian National Railways.

R. HAY, heretofore City Passenger and Ticket Agent, C.N.R., Vancouver, B.C., has been appointed City Ticket Agent, C.N.R. and G.T.P.R., there.

G. M. HEMSWORTH, heretofore City Ticket Agent, C.N.R., Victoria, B.C., has been appointed Travelling Freight Agent, C.N.R. and G.T.P.R., there.

J. IRWIN, heretofore Superintendent, Edmonton Division, Western District, C. N.R., Edmonton, Alta., has been appointed Superintendent, C.N.R. and G.T.P.R., with jurisdiction over the following lines: Edmonton to Biggar, including Biggar, Tofield to Calgary, Biggar to Loverna, Oban to Battleford, and Battleford to Carruthers. Office (temporary), Edmonton, Alta.

C. E. JENNEY, heretofore General Agent, Passenger Department, G.T.P.R., Vancouver, B.C., has been appointed District Passenger Agent, C.N.R. and G.T.P.R., there, with supervision of Grand Trunk Pacific Coast Steamship Co.'s traffic.

G. F. JOHNSTON, heretofore City Passenger and Ticket Agent, G.T.P.R., Prince Rupert, B.C., has been appointed City Ticket Agent, C.N.R. and G.T.P.R., there.

R. E. JOHNSTON has been appointed City Freight Agent, C.N.R. and G.T.P.R., Vancouver, B.C.

W. H. KILBY has been appointed Fire Inspector, with jurisdiction over all C. N.R. lines west of Armstrong, Ont., west of and including Port Arthur, Ont., to and including Edmonton, Alta.; Stony Lake, St. Albert, Athabaska and Onoway subdivisions and all G.T.P.R. lines west of and including Edmonton. Office, Winnipeg.

A. KILPATRICK, Superintendent, G. T.P.R., Smithers, B.C., having been transferred, that position has been abolished, J. P. KIRKPATRICK, Assistant Superintendent, C.N.R. and G.T.P.R., there, now reports to the Assistant General Superintendent, C.N.R. and G.T.P.R., Prince Rupert, B.C.

W. A. KIRKPATRICK, heretofore Trainmaster, C.N.R., Neepawa, Man., has been appointed Superintendent of Transportation, Prairie District, C.N.R. and G.T.P.R., Saskatoon, Sask.

A. F. LENON, heretofore City Passenger and Ticket Agent, G.T.P.R., Saskatoon, Sask., has been appointed City Ticket Agent, C.N.R. and G.T.P.R., there.

A. C. LIPSETT, heretofore City Passenger and Ticket Agent, G.T.P.R., Calgary, Alta., has been appointed Travelling Passenger Agent, C.N.R. and G.T.P. R., there.

J. H. CORMICK, Signal Engineer, Western Lines, C.N.R., Winnipeg, has had his jurisdiction extended over all G.T.P.R. lines east of and including Edmonton, Alta.

T. W. McDONOUGH, heretofore Travelling Passenger Agent, G.T.P.R., Winnipeg, has been appointed Chief Terminal Passenger Agent, C.N.R. and G.T. P.R., Winnipeg.

J. F. McGUIRE, heretofore acting General Agent, C.N.R., Seattle, Wash., has been appointed General Agent, Passenger Department, C.N.R. and G.T.P.R., with territory, Washington and Oregon. Office, Seattle, Wash.

K. E. McLEOD, heretofore District Passenger Agent, C.N.R., Vancouver, B. C., has been appointed District Passenger Agent, C.N.R. and G.T.P.R., there.

R. F. McNAUGHTON, heretofore City Ticket Agent, C.N.R., Regina, Sask., has been appointed Travelling Passenger Agent, C.N.R. and G.T.P.R., there.

G. A. McNICHOLL, heretofore Assistant General Freight and Passenger Agent, G.T.P.R., Prince Rupert, B.C., has been appointed Assistant General Freight and Passenger Agent, C.N.R. and G.T.P. R., there.

J. MADILL, heretofore District Passenger Agent, C.N.R., Edmonton, Alta., has been appointed District Passenger Agent, C.N.R. and G.T.P.R., there.

B. R. MARSALES, heretofore Division Freight Agent, C.N.R., Saskatoon, Sask., has been appointed Division Freight Agent, C.N.R. and G.T.P.R., there.

C. F. MARTIN has been appointed Superintendent of Transportation, with jurisdiction over G.T.P.R. between Edmonton (not including Edmonton) and Edson, Alta., and all C.N.R. and G.T.P.R. lines west of Edson, including Vancouver Island lines, reporting to N. B. Wal-

ton, Assistant General Superintendent, on matters pertaining to lines between Edmonton and Prince Rupert. Office, Vancouver, B.C.

R. H. MERRITT, heretofore City Passenger and Ticket Agent, G.T.P.R., Seattle, Wash., has been appointed City Ticket Agent, C.N.R. and G.T.P.R., there.

R. M. MILLIKEN, heretofore Division Freight Agent, C.N.R., Regina, Sask., has been appointed Division Freight Agent, C.N.R. and G.T.P.R., there.

L. F. MUNCEY, heretofore Assistant Superintendent, C.N.R., Vancouver, B.C., has been appointed Superintendent, with jurisdiction Red Path Jct. to Vancouver, vice J. E. Nelson, transferred. Office, Kamloops Jct., B.C.

W. I. MUNRO, Superintendent, C.N.R., Saskatoon, Sask., has had his jurisdiction extended over the following C.N.R. and G.T.P.R. lines: Saskatoon to Prince Albert, Prince Albert to Big River, Shelbrooke to Denhome, Humbolt to North Battleford, including Humbolt, Saskatoon to Kindersley, Delisle to Lucky Lake, Elrose Jct. to Eaton, Dalmeny to Carleton, Watrous to Biggar, Yonge to Prince Albert, including Prince Albert.

J. E. NELSON, heretofore Superintendent, Division 1, Pacific District, C.N.R., Kamloops Jct., B.C., has been appointed Superintendent, C.N.R. and G.T.P.R., Edmonton, Alta., with jurisdiction over the following lines: C.N.R. and G.T.P.R. terminals at Edmonton; North Battleford to Lobstick Jct., including North Battleford, North Battleford to Turtleford, Battleford Jct. to Battleford, Edmonton Jct. to Stony Plains, St. Albert to Athabaska, Peace River Jct. to Sangudo, Vegreville Jct. to Big Valley, Warden to Brazeau, Terminal Jct. to Camrose Jct., South East Jct. to Alliance, and St. Paul Jct. to Spedden.

F. L. NORMAN, heretofore Commercial Agent, G.T.P.R., Seattle, Wash., has been appointed Commercial Agent, C.N.R. and G.T.P.R., there.

G. A. NORTH, heretofore City Passenger Agent, C.N.R., Winnipeg, has been appointed Travelling Passenger Agent, C.N.R. and G.T.P.R., St. Paul, Minn..

J. H. NORTON, heretofore City Passenger Agent, C.N.R., Calgary, Alta., has been appointed City Ticket Agent, C.N.R. and G.T.P.R.. there.

JOHN PAUL, heretofore Division Freight Agent, C.N.R., Winnipeg, has been appointed Division Freight Agent, C.N.R. and G.T.P.R., there.

J. S. PECK, heretofore City Ticket Agent, C.N.R., Edmonton, has been appointed City Passenger Agent, C.N.R. and G.T.P.R., Edmonton, Alta.

J. F. PHILP, heretofore City Passenger and Ticket Agent, G.T.P.R., Edmonton, Alta., has been appointed City Ticket Agent, C.N.R. and G.T.P.R., there.

T. E. P. PRINGLE, heretofore City Passenger and Ticket Agent, G.T.P.R., Winnipeg, has been appointed City Passenger Agent, C.N.R. and G.T.P.R., there.

W. J. QUINLAN, heretofore District Passenger Agent, G.T.P.R., Winnipeg, has been appointed District Passenger Agent, C.N.R. and G.T.P.R., there.

D. ROBERTSON, heretofore General Storekeeper, G.T.P.R., Transcona, Man., has been appointed Assistant General Storekeeper, C.N.R. and G.T.P.R., Winnipeg.

P. A. ROONEY, heretofore Travelling Passenger Agent, C.N.R., Winnipeg, has been appointed Travelling Passenger Agent, C.N.R. and G.T.P.R., there.

W. A. B. RUSSELL, heretofore Commercial Agent, G.T.P.R., Regina, Sask., has been appointed Division Freight Agent, C.N.R. and G.T.P.R., Calgary, Alta.

B. G. RUTLEY has been appointed Assistant Terminal Passenger Agent, C. N.R. and G.T.P.R., Winnipeg.

J. SCHOFIELD, heretofore Architect, C.N.R., has been appointed Architect, C. N.R., Western Lines, and G.T.P.R., Winnipeg.

J. R. SCOTT, heretofore Division Freight Agent, C.N.R., Port Arthur, Ont., has been appointed Assistant General Freight Agent, C.N.R. and G.T.P.R., Vancouver, B.C.

C. A. SKOG, Division Freight Agent and District Passenger Agent, C.N.R., Duluth, Minn., will also act as District Passenger Agent, G.T.P.R.

WM. STAPLETON, heretofore District Passenger Agent, C.N.R., Saskatoon, Sask., has been appointed District Passenger Agent, C.N.R. and G.T.P.R., there.

**L. C. Thomson,**
General Storekeeper, Eastern Lines, Canadian National Railways.

H. A. STUART, heretofore Division Freight Agent, C.N.R., Brandon, Man., has been appointed Division Freight Agent, C.N.R. and G.T.P.R., Victoria, B.C.

M. D. THOMPSON, heretofore Assistant Superintendent, G.T.P.R., Regina, Sask., has been appointed Superintendent, C.N.R. anl G.T.P.R., witih jurisdiction over the following lines: Regina to Saskatoon, Moose Jaw to Moose Jaw Jct., Avonlea to Gravelbourg, Regina to Northgate, Talmage to Weyburn, Regina to Riverhurst, and Regina to Melville. Office, Regina, Sask.

H. F. TILLEY, heretofore Travelling Passenger Agent, G.T.P.R., Edmonton, Alta., has been appointed Travelling Passenger Agent, C.N.R. and G.T.P.R., there.

T. TURNBULL, heretofore Engineer, Maintenance of Way, Western Lines, C. N.R., has been appointed Engineer, Maintenance of Way, with jurisdiction over all C.N.R. lines west of Armstrong, Ont., west of and including Port Arthur, Ont., to and and including Edmonton, Alta., Stoney Plains, St. Albert, Athabaska and Onoway subdivision, and all G.T.P.R. lines east of and including Edmonton. Office, Winnipeg.

W. A. VANALSTINE, heretofore Travelling Passenger Agent, C.N.R., Saskatoon, Sask., has been appointed Travelling Passenger Agent, C.N.R., and G.T. P.R., there.

N. B. WALTON, heretofore Superintendent, G.T.P.R., Edmonton, Alta., has been appointed Assistant General Superintendent, with jurisdiction over G.T.P. R. lines between Edmonton (not including Edmonton), and Prince Rupert. Office, Prince Rupert, B.C.

W. WALKDEN, heretofore Bridge Engineer, Western Lines, C.N.R., Winnipeg, has been appointed Assistant Bridge Engineer, C.N.R. Western Lines and G.T. P.R. Office, Winnipeg.

T. P. WHITE, heretofore Superintendent of Car Service, G.T.P.R., Winnipeg, has been appointed Superintendent of Transportation, Central District, C.N.R. and G.T.P.R. Office, Winnipeg.

E. G. WICKERSON, heretofore City Ticket Agent, C.N.R., Saskatoon, Sask., has been appointed Travelling Passenger Agent, C.N.R. and G.T.P.R., there.

A. WILCOX, General Superintendent, Central District, C.N.R., Winnipeg, has had his jurisdiction extended over G.T. P.R. lines, Watrous to Winnipeg, including Watrous, and Melville to Canora.

F. YATES has been appointed City Ticket Agent, C.N.R. and G.T.P.R., Seattle, Wash.

**Canadian Pacific Ry.**—Lt. Col. C. C. STIBBARD, D.S.O., has been appointed Trainmaster, Lethbridge, Alta., vice E. M. Smith, transferred.

B. FAUGHNAN has been appointed General Freight Car Foreman, Angus shops, Montreal, vice H. R. Naylor, promoted.

H. R. NAYLOR, heretofore General Freight Car Foreman, Angus shops, Montreal, has been appointed Assistant Works Manager, Angus car shops, Montreal, vice L. C. Ord, resigned. Office, Montreal.

E. M. SMITH, heretofore Trainmaster, Lethbridge, Alta., has been appointed Trainmaster, Red Deer, Alta., vice W. S. Hall.

F. A. WINTERSON, heretofore Assistant Superintendent, Montreal Terminals Division, Quebec District, has been appointed Assistant Superintendent, Farnham Division, Quebec District, vice H. J. Main, transferred. Office, Farnham, Que.

**Dominion Atlantic Ry.**—J. R. H. CHIPMAN has been appointed acting Engineer, vice M. K. McQuarrie, who has returned to C.P.R. service at Revelstoke, B.C.

**Duluth, South Shore & Atlantic Ry.**—W. L. MARTIN, Vice President, Traffic, W. R. CALLAWAY, Passenger Traffic Manager, and H. M. LEWIS, General Passenger Agent, Duluth, Minn., are reported to have resigned.

**Edmonton, Dunvegan & British Columbia Ry., Central Canada Ry.**—E. J. BULGIN, heretofore Divisional Accountant, C.P.R., Winnipeg, has been appointed General Auditor, E., D. & B. C. R. and C. C. R. Office, Edmonton, Alta.

J A. MACGREGOR, heretofore Superintendentent, Edmonton Division, Alberta District, C.P.R., Edmonton, Alta., has been appointed Manager, E., D. & B. C. R. and C. C. R., as reported in a previous issue. Office, Edmonton, Alta.

**Grand Trunk Ry.**—E. O. DUNN, Trainmaster, Durand, Mich., has had his jurisdiction extended over District 25 (C. S. & M.), Durand to Bay City, Mich.

Mrs. E. H. GAUDEN has been appointed Welfare Superintendent, female clerical staff, general office, Montreal, the management desiring to make the environment of office life as healthy and happy as possible; she will have charge of the luncheon room and rest room, and will extend her help to the homes of girls in case of sickness.

JOHN GREER has been appointed Assistant Engineer, Portland Division, vice R. F. Nicholson, resigned. Office, Portland, Me.

H. HULATT, Manager of Telegraphs, Canadian Lines, Montreal, has also been appointed Consulting Manager of Telegraphs, Western Lines.

The Detroit Terminals have been separated from the Detroit Division, Western Lines, and District 25 (C. S. & M.) has been transferred from the Chicago Division to the Detroit Division.

T. KING, Superintendent, Detroit Division, has the following jurisdiction: District 25 (C. S. & M.), Durand to Bay City; District 27, State Fair to Grand Haven, and Milwaukee terminals; District 28, Ashley to Muskegon; District 29, double track switch, east end of Gillen yard to Tappan; District 29 (M.A.L.), Richmond to Jackson; P.O. & N., Pontiac to Caseville; D. & H., Cass City to Bad Axe, and car ferries between Grand Haven and Milwaukee. Office, Durand, Mich.

E. F. GORMAN, Superintendent, Detroit Terminals, has the following jurisdiction: District 27, Brush St. station to State Fair; District 29, West Detroit to double track switch, east end of Gillen yard. Office, Detroit, Mich.

F. L. SAMPLE has been appointed Assistant Superintendent, Detroit Terminals, Western Lines. Office, Milwaukee Jct., Wis.

Grand Trunk Pacific Ry.—See Canadian National Rys.-G.T. Pacific Ry., also Canadian National Rys., Western Lines-G.T.P.R.

Grand Trunk Pacific Ry. Telegraphs.—In pursuance of authority issued by the Receiver under which the management of the Grand Trunk Pacific Ry. has been placed under the Canadian National Rys. Board, the jurisdiction of G. D. PERRY, General Manager, Great North Western Telegraph Co., has been extended over G.T.P.R. lines. Office, Toronto.

Quebec Oriental Ry., Atlantic, Quebec & Western Ry.—C. A. STARK has been appointed Master Mechanic, vice R. Lindsay, resigned. Office, New Carlisle, Que.

## The Car Shortage Situation.

The Railway Association of Canada issued the following circulars Sept. 17:

No. 9.—In times of shortage of equipment, to protect freight loading, it is necessary that railways apportion available equipment amongst shippers located on their lines, on an equitable basis. In this connection it should be borne in mind that industries making cars empty on their sidings are not entitled to any more favorable treatment than that accorded other shippers. In cases where a shipper makes empty a larger number of cars than he is entitled to, for loading on an equitable distribution basis, the railway shall call upon such shipper to turn back empty cars in excess of the number to which he is entitled, for other distribution.

No. 10.—The present acute car shortage makes it incumbent upon the railways to increase in every way possible, freight car efficiency. Shippers and consignees are being urged to load cars promptly, and to capacity, to place their orders for carload lots, and release equipment promptly at destination. In this connection the attention of the railways is called to the importance of following out these suggestions to shippers and consignees in connection with the ordering and unloading of o.c.s. material, and it is recommended that the handling of o.c.s. material in revenue freight car equipment should be closely checked by the railways, with a view to avoiding waste of car capacity and reducing delays in unloading to the minimum.

Circular 8, Supplement 1.—In carrying out the requirements of circular 8, it is recommended that the following loading of 40 ton cars with flour be adhered to:—

| | |
|---|---|
| In 80 lb. sacks | 1175 sacks a car |
| In 98 lb. sacks | 940 sacks a car |
| In 140 lb. sacks | 650 sacks a car |
| In 220 lb. sacks | 400 sacks a car |

Thirty ton cars can be loaded to capacity, viz., 66,000 lb.

## Occupancy of Toronto New Union Station Offices.

Canadian Railway and Marine World for September stated that a number of Canadian National, Canadian Pacific and Grand Trunk Railways' officials would remove their offices to the new union station, Toronto, about Sept. 15. Owing to unforeseen delays, particularly in regard to the installation of telegraph and telephone service, the removals had to be postponed, and it is now expected that they will be effected early in October.

The names of the C.P.R. and G.T.R. officials who will remove were given in Canadian Railway and Marine World for September. The following Canadian National Rys. officials will also remove:—D. Crombie, General Superintendent; G. A. Hoag, Superintendent of Transportation; J. H. McAlpine, Master Mechanic; W. C. Moore, Assistant Master Mechanic; W. H. Long, General Car Foreman; G. P. MacLaren, District Engineer; W. H. B. Bevan, Assistant Engineer; R. B. Jennigs, Division Engineer; C. L. Harris, Superintendent; W. L. Buller, Assistant Superintendent; W. D. Marshall, Chief Dispatcher; O. Kerr, Bridge and Building Foreman; V. Davies, Boarding Car Supervisor.

It is expected that the Post Office Department will take possession of the eastern block early in October.

## Change in Canadian Marconi Co.'s Control.

As a result of changes in the organization of The Marconi Wireless Telegraph Co. of Canada, Ltd., it is now entirely under Canadian control. Some months ago, a merger was effected in the United States between the American Marconi Co. and the General Electric Co.'s wireless interests, the merged interests being incorporated as Radio Corporation of America. As a result of that merger, the Radio Corporation became stronger than either of its constituents, separately, could ever have hoped to become, as it gained control of all the wireless patents of the American Marconi and General Electric Companies. As a side issue of that merger, the various Marconi interests of the British Empire, elsewhere than in Canada, became entitled to the use of all the wireless patents owned and controlled by the General Electric Co. Canada was not included, as the Canadian equivalents of the wireless patent of the General Electric Co. were owned by the Canadian General Electric Co., which is not under the control of the General Electric Co.

By changes which have taken place recently in its organization, the Canadian Marconi Co. becomes affiliated with the Canadian General Electric Co. Senator Frederic Nicholls, Sir William Mackenzie and Mr. A. E. Dyment, directors of the Canadian General Electric Co., having been elected directors of the Canadian Marconi Co., the board of which is now constituted as follows:—Senator Frederic Nicholls, President; Senator G. Marconi, Vice President; A. E. Dyment, Vice President; R. Bickerdike, Vice President; Sir William Mackenzie, Godfrey C. Isaacs, G. M. Bosworth, C. Greenshields, K.C., A. H. Morse, A.M.I.E.E. (London), Mem. I.R.E. (New York), Managing Director. The authorized capital of the Canadian Marconi Co. will be increased to provide additional working capital and for the acquisition of the wireless patents controlled by the Canadian General Electric Co., which patents include those on the Alexanderson alternator, the manufacture of the Fleming valve, the Alexanderson multiple aerial, etc.

## Canadian Ticket Agents' Association's Annual Meeting.

The Canadian Ticket Agents' Association held its 34th annual meeting and outing at Montreal, Sept. 22 and 23. At the annual meeting at the Windsor Hotel, Sept. 22, G. T. Bell, Passenger Traffic Manager, G.T.R.; W. S. Cookson, General Passenger Agent, G.T.R., and W. H. Snell, General Passenger Agent, C.P.R., addressed the members.

The curtailment of free transportation to ticket agents and their dependents was discussed at length, a committee reporting that under the railway act of 1919 it is illegal to extend free transportation to ticket agents not wholly employed in transportation business. A resolution was passed expressing sympathy with F. W. Churchill, for many years town ticket agent, C.P.R., Collingwood, Ont., who has resigned from membership owing to having lost his eyesight.

The officers were re-elected as follows: President, J. Ransford, Clinton, Ont.; First Vice President, J. A. McDonald, Valleyfield, Que.; Second Vice President, A. C. Rorabeck, North Bay, Ont.; Third Vice President, C. G. Millard, Coldwater, Ont.; Secretary-Treasurer, E. de la Hooke, London, Ont.; Auditor, W. E. Hall, Blenheim, Ont.; executive committee, W. Jackson, Clinton, Ont.; A. M. Hare, Tillsonburg, Ont.; C. B. James, Orillia, Ont.; W. J. Moffatt, Toronto; W. H. C. MacKay, St. John, N.B.

On the evening of Sept. 22 the members had a theater party. On Sept. 23, in the morning, they were taken over some of the Montreal Tramways Co.'s lines in a special car; in the afternoon they were given a motor ride around Mount Royal, and afterwards went on board the s.s. Saturnia, of the Anchor-Donaldson Line, where they were welcomed by R. W. Reford, President; W. I. Gear, Vice President, and other officials of the agents, the Robert Reford Co. While the members were being entertained on board, they presented mementos of the outing to E. T. Boland, Manager, Robt. Reford Co., Toronto, and J. J. Brignall, Travelling Passenger Agent, C.P.R., Toronto.

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TORONTO, CANADA, OCTOBER, 1920.


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## Canadian National Railways Directors' Inspection Trip.

Between Sept. 16 and 27, D. B. Hanna, President, Canadian National Rys., made an inspection trip over some of the eastern lines, accompanied by the following other directors: A. P. Barnhill, K.C., Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, Thos. Cantley, Robt. Hobson, Sir Hormidas Laporte, R. T. Riley and E. R. Wood. There were also in the party R. P. Ormby, Secretary; S. J. Hungerford, Assistant Vice President, and F. P. Brady, General Manager, Eastern Lines. Among other officials who travelled with the party, through their respective jurisdictions, were W. A. Kingsland, Assistant General Manager, Eastern Lines, and C. B. Brown, Chief Engineer, Moncton, N.B., and the local superintendents, etc.

The itinerary included Montreal, Quebec, McGivney Jct., Fredericton, St. John, N.B., Moncton, Sydney, Tormentine, Port Borden, Summerside, Charlottetown and Halifax.

At the principal points visited the railway properties were gone over. At St. John, N.B., special attention was paid the new yard area on Marsh Road, and to the harbor development and drydock work, being done in Courtenay Bay, by the St. John Drydock & Shipbuilding Co. The members of the party were entertained at luncheon at the Union Club, and afterwards went over the harbor on a tug. At Halifax, Mr. Hanna had conferences witih delegations from the city council and board of trade.

## Chief Interchange Car Inspectors' and Car Foremen's Association.

The Chief Interchange and Car Foremen's Association of America's annual meeting was held in Montreal, Sept. 14, 15 and 16. The association's object is the advancement of knowledge relating to safe and economical railway car interchange, to the construction and maintenance of cars in shops, to secure a fair and uniform understanding of the American Railway Association's rules on the general interchange situation, with international harmony, honesty and unity of action.

The members of the association were welcomed by representatives of the City Council. The meeting on Sept. 14 was devoted to a discussion of the A.R.A. Rules of Interchange with particular attention to the changes adopted at the June convention. This discussion was continued on Sept. 15, and at the conclusion a paper on the Transportation of Explosives was read by J. E. Grant of the Bureau of Explosives. An address on the same subject was given by J. O'Donnell, also representing the Bureau. The influence of the work of the car department on the elimination of loss and damage to freight was discussed by E. Arnold, Freight Claim Agent of the G. T.R.

Two papers were presented at the meeting on Sept. 15, the first on the Lubrication of Freight and Passenger Equipment, by M. J. O'Connor; the second on the Best Methods of Repairing Cars in Train Yards, by O. E. Sitterly. An interesting feature of this session was the showing of moving pictures illustrating proper and improper practices in designing and maintaining brake beams and brake shoes, prepared by the Chicago Railway Equipment Co. The meeting on Sept. 16 was devoted to the reports of committees, the election of officers and miscellaneous business.

The following officers were elected:—President, Edward Pendleton, General Car Foreman, Chicago & Alton Ry., Peoria, Ill.; First Vice President, A. Armstrong, Chief Joint Car Interchange Inspector, Atlanta, Georgia; Second Vice President, W. F. Westfall, Special Inspector, New York Central Ry., Cleveland, Ohio; Secretary-Treasurer, W. R. Elliott, General Car Foreman, St. Louis, Mo., terminals. W. H. Sherman, Car Foreman, G.T.R., was elected a member of the Executive Committee.

The ladies who accompanied the delegates were entertained by Montreal railwaymen to drives around the city, and other festivities included a reception and dance and a theatre party.

## The Rehabilitation of the Reid Newfoundland Co.'s Railway.

The Commission appointed by the Newfoundland Government under an act passed at the Legislature's last session has started work. Among the recommendations, according to a press report, affecting the operation of the railway already made, is one for an increase in passenger fares and freight rates, the percentage of which had not bee fixed Sept. 16. The granting of passes, which it is stated had assumed "enormous proportions," is reported to have been abolished. To this regulation, it is said, there are to be no exceptions whatever, the privileges heretofore granted to members of Parliament and to most of the company's officials being abolished.

The Legislature last session voted $1,000,000 to be immediately expended on the line and its equipment, which was appropriated as follows:—$300,000 for purchase of fish plates to connect the rails, $250,000 for additional terminal facilities at St. John's and Port aux Basques; and $450,000 to be paid to the Reid Newfoundland Co. to buy 6 locomotives, 50 box cars and 50 flat cars. Orders are reported to have been given for 6 locomotives, and enquiries are said to have been made for cars.

Arrangements are reported to have been made for considerable expenditures at Port aux Basques, the work to include the rebuilding and enlargement of some of the existing structures. This is the port whence the Reid Newfoundland Co.'s steamers run to Sydney, N.S.; and the report adds that T. A. Hall, the Government's engineer, is visiting Canada to secure the co-operation of Canadian National Rys. officers for the improvement of terminal facilities at Sydney, which are said to be inadequate. Another report states that the Commission visited Port aux Basques recently to select a site for new freight sheds, that the sheds will extend from the present shed to the railway office, and provide for handling of express and baggage and the Customs work.

Provision, it is said, is being made for a new terminal for the south coast steamships at Argentia, with railway facilities. The present terminals are at Placentia, and the steamships serve Port aux Basques, Argentia and the inner bays on the south shore. Argentia is on a bay a short distance west of Placentia, and is open all the year round. The proposed new terminal will also be used by the Anglo-Newfoundland Development Co., and other pulp and paper exporters. (Aug., pg. 434.)

# Commutation Fares to Beaches in Winnipeg District.

Assistant Chief Railway Commissioner S. J. McLean gave the following judgment July 29:—Complaint is made by the Winnipeg Beach Community Club, Winnipeg, alleging an excessive increase in fares for passengers travelling between the City of Winnipeg and the summer resort of Winnipeg Beach and adjoining beaches. As developed at the hearing, the matter turned on the question of the alleged excessive increase in commutation rates. It is also set out in the application that the conditions considered by the Board, as outlined in order 29,512, dated April 1, 1920, are not the same as those which exist in connection with the summer residents at Winnipeg Beach, and that a special tariff should be put into effect for the summer residents of Winnipeg Beach and adjoining beaches.

Application was also launched on behalf of Matlock Beach, it being set out that Matlock has a large summer population, that the C.P.R. insisted upon campers resident at Matlock Beach purchasing commutation tickets to Winnipeg Beach, and that Matlock Beach has had commutation ticket privileges ever since the Beach was opened up as a summer colony; and the applicants claim that having had such privileges for over 12 years, if the Matlock rate is to be in accord with that fixed by order 29,512, then it should be based on the actual Matlock mileage; in other words, there should be a specific commutation rate for Matlock. As indicated below, the commutation rate which has applied to Matlock has been the Winnipeg Beach rate.

Winnipeg Beach is 49 miles from Winnipeg. The beaches mentioned at the hearing were Winnipeg Beach, Matlock Beach, Whytewold, Boundary Park, and Sandy Hook. Gimli, which is 59 miles from Winnipeg, was also referred to. Matlock and Whytewold are intermediate to Winnipeg Beach. Boundary Park and Sandy Hook are beyond Winnipeg Beach, Sandy Hook being the second station beyond. In addition, Ponemah and Dunnottar were mentioned. Ponemah is intermediate to Winnipeg Beach. Dunnottar is not shown in the company's timetable or folder. There are relatively short distances intervening between the points mentioned.

The tariffs have been checked and show commutation rates between Winnipeg and Winnipeg Beach and between Winnipeg and Gimli. The tariffs on file do not show commutation rates between Winnipeg and the other points mentioned. Apparently the traffic has been handled, so far as commutation traffic is concerned, by the passenger purchasing transportation either to Winnipeg Beach or Gimli in respect of the point intermediate to either of the commutation destinations aforesaid. The figures for 1919 passenger business as between Winnipeg and the points concerned show the following: — Excursion tickets, $97,872: week-end tickets, $9,634; commutation tickets, $28,366; total, $135,872. Of this business 72.04% was carried on excursion tickets, while 20.08% represents the commutation movement. There were issued in connection with the commutation traffic in question during 1919, 2,556 10-trip tickets and 338 55-trip tickets; a total of 2,894, therefore, the predominant type of commutation ticket is not one concerned with daily travel, but with less frequent movements which normally would appear to be of the week-end type.

The discussion at the hearing turned primarily upon an alleged difference of conditions existing in connection with the traffic herein concerned and the traffic involved under order 29,512. Applicants submitted that the commutation rates had existed so long that they had been regarded as, so to speak, standard commutation rates. They stated that when the increase took place under the Fifteen Per Cent Case, which percentage increase applied to commutation rates as well, they had no objection to this, but that they objected to any further increase. It may be pointed out in this connection that the same condition existed in Eastern Canada; commutation rates had existed for a period of time, and under the Fifteen Per Cent Case they were subjected to a 15% increase.

It was argued that the traffic concerned in the Board's judgment in the Commutation Rates Case was related to an established suburban traffic, and that the consideration of this overshadowed the matter of summer traffic; and it was stated that in the case herein involved summer traffic was the predominant feature. It is to be pointed out that in the case of the complaint of the Gatineau Resident's Association against the C.P.R., which was dealt with in the judgment, what was concerned was the matter of summer traffic, there being no winter commutation rates on the Gatineau,— the commutation fares of summer residents on the Gatineau line are limited to the period beginning May 1 and ending Oct. 31 of each year; and the judgment in dealing with the rates specifically sets out detail regarding rates and mileages in connection with the summer traffic up the Gatineau river.

Reference was made to the volume of excursion traffic between Winnipeg and Winnipeg Beach as having a bearing upon the proper level of commutation rates, and as a matter to be considered in connection with the contention that a special commutation rate basis should be in place on the traffic in question—a rate basis distinct from and lower than that authorized in the Board's order above referred to. The typical commutation rate, it seems to me, is that concerned with the 55-trip ticket as it was, which was reduced under the Board's order to a 50-trip basis. This is concerned with a daily movement. On account of the limitation of time within which it has to be used, it has that element of assured frequency of movement which is a fundamental factor in connection with the granting of commutation rates. In the application dealt with in the judgment, which was implemented by the Board's order 29,512, this 55-trip ticket business, now 50-trip, played a very large part. In the case of the present applications, it is to be noted that it is of very minor importance.

The geographical situation of the different points as adjacent to Winnipeg Beach has been referred to. As already pointed out, these points, as distinct from Winnipeg Beach and Gimli, have not in the past carried specific commutation rates, and the tariffs now in force do not provide for them. It is contended that since the points involved are not being quoted commutation rates, proportioned to their respective mileages, they are being discriminated against. In the Board's judgment, the matter of discrimination was very fully considered by Commissioner Boyce. There were before the Board applications to extend the commutation passenger fares to territory which did not have commutation rates. It was pointed out in the judgment that under The Railway Act, sec. 345, subsec. 2, "the duty is cast upon applicants to the discretion of the Board to make out such a case as will of itself induce the Board to see the fitness of granting the application by the strength of the case, and not merely by suggestion or statement as to the necessity of such a service." It was indicated that the object of the legislation as referred to was simply to give the Board a remedial power. The decision in the Commutation Rates Case did not require the installation of commutation rates at points at which at the time of the application commutation rates were not installed; and as pointed out in the various instances in which applications were made for the exercise of the Board's remedial powers, such a showing of discrimination was not made as would justify the Board's intervention.

The case as presented was concerned with two positions: (1) that the traffic conditions involved were dissimilar from those before the Board in its judgment on commutation rates; (2) the question of discrimination. In general, on the question of the nature of the traffic and of the earnings, taking into consideration the conditions as to railway costs which are referred to in Commissioner Boyce's judgment, and which are of general application, a case has not been made out for putting in such a special rate basis as asked for. As to the question of discrimination alleged, the matter falls within the reasoning and conclusions of Commissioner Boyce as above referred to. I am, therefore, of the opinion that the situation as developed is not one which on the facts before us is taken out from under the provisions of the Board's judgment in the Commutation Rates Case.

Commissioners Goodeve and Rutherford concurred.

## Grand Trunk Railway Construction, Betterments, Etc.

**Ottawa Office and Store Building.**—A recent press report stated that a contract was about to be let for the erection of an office and store room at Ottawa.

**London Reclamation Yard.**—A press report states that plans are being prepared for the construction of three buildings at East London, Ont., for use in connection with a reclamation or salvaging yard, and that the total cost of the plant is put at $300,000. It is also reported that one track from the St. Marys branch to the new yard has been laid, that the other track has been started, and that building supplies, etc., are in course of delivery for the general construction work.

**Chinese Railway Club Ltd.** has been incorporated under the British Columbia Companies Act, with authorized capital of $2,000 and office at Prince George, to establish and maintain a club house.

**Ties for Great Britain.**—A press report states that orders for 20,000,000 ft. of railway ties for Great Britain and Ireland has been placed with the British Columbia Lumber Export Association.

# Birthdays of Transportation Men in October.

Many happy returns of the day to:

A. Aitken, Assistant Superintendent, Toronto Terminals, C.P.R., Toronto, born at Decewsville, Ont., Oct. 12, 1872.

E. W. Beatty, K.C., President, C.P.R., Montreal, born at Thorold, Ont., Oct. 16, 1877.

Major Graham A. Bell, C.M.G., Deputy Minister of Railways and Canals, Ottawa, Ont., born at Perth, Ont., Oct. 13, 1874.

L. S. Brown, General Superintendent, Maritime District, Canadian National Rys., Moncton, N.B., born at Nelson, N. B., Oct. 19, 1864.

F. F. Busteed, Assistant Engineer, C. P.R., Vancouver, B.C., born at Battery Point, Que., Oct. 10, 1858.

J. M. S. Carroll, Sales Manager, Canadian Consolidated Rubber Co., Montreal, born at Ballarat, Australia, Oct. 22, 1875.

C. E. Cartwright, ex-Division Engineer, C.P.R., Vancouver, B.C., born at Toronto, Oct. 13, 1864.

J. W. Corbett, Purchasing Agent, Canadian Government Merchant Marine Ltd., Montreal, born there, Oct. 4, 1887.

A. F. Dion, Traffic Manager, Quebec Harbor Commission, Quebec, born at L'Islet, Que., Oct. 1, 1871.

H. A. Dixon, Chief Engineer, Western Lines, Canadian National Rys., Winnipeg, born at Sand Hill, Ont., Oct. 7, 1878.

J. W. Doyle, General Manager, Cape Breton Ry., St. Peters, N.S., born at Summerside, P.E.I., Oct. 12, 1872.

L. V. Druce, Commercial Agent, Canadian National and Grand Trunk Pacific Rys., Edmonton, Alta., born at London, Eng., Oct. 20, 1873.

R. G. Edwards, Assistant Superintendent, Windsor Division, Ontario District, C.P.R., London, Ont., born at Maitland, Ont., Oct. 10, 1883.

A. C. Egan, Assistant to Comptroller, Canadian National Rys., Toronto, born at Winnipeg, Oct. 6, 1883.

C. E. Friend, Comptroller, Canadian National Rys., Toronto, born at Brighton, Eng., Oct. 12, 1871.

W. P. Fitzsimmons, Commissioner of Industries, G.T.R., Montreal, born at Detroit, Mich., Oct. 27, 1868.

G. Gordon Gale, Vice President and General Manager, Hull Electric Co., Hull, Que., and Vice President, Canadian Electric Railway Association, born at Quebec, Que., Oct. 9, 1882.

C. N. Ham, Secretary, Express Traffic Association of Canada, Montreal, born at Winnipeg, Oct. 21, 1884.

G. Hodge, Assistant to Vice President, Eastern Lines, C.P.R., Montreal, born there, Oct. 2, 1874.

J. H. Hughes, Assistant Superintendent, Ottawa Division, Quebec District, C.P.R., Ottawa, Ont., born at Charlottetown, P.E.I., Oct. 7, 1865.

H. Irwin, Consulting Right of Way and Lease Agent, C.P.R., Montreal, born at Newgrove, County Down, Ireland, Oct. 27, 1847.

W. B. Johnson, Master Mechanic, Halifax Division, Maritime District, Canadian National Rys., Truro, N.S., born there, Oct. 8, 1872.

W. B. Lanigan, Freight Traffic Manager, C.P.R., Montreal, born at Three Rivers, Que., Oct. 12, 1861.

O. M. Lavoie, Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, born at St. Cyril de Wendover, Que., Oct. 16, 1884.

A. E. McMaster, Treasurer, Whalen Pulp & Paper Mills Ltd., Vancouver, B.C., born at Perth, Ont., Oct. 22, 1885.

Sir William Mackenzie, President, Toronto Ry., Toronto, born at Kirkfield, Ont., Oct. 30, 1849.

C. Malcolm, chief clerk, Auditor of Stores and Mechanical Accounts, Alberta District, C.P.R., Calgary, Alta., born at Tatamagouche, N.S., Oct. 18, 1881.

W. T. Marlow, General Freight Agent, Canadian Pacific Ocean Services, Ltd., Montreal, born at Limerick, Ireland, Oct. 25, 1872.

C. R. Moore, General Superintendent of Car Service, G.T.R., Montreal, born at Hamilton, Ont., Oct. 12, 1867.

Hugh Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrew, Scotland, Oct. 5, 1852.

J. W. Porter, ex-Chief Engineer, Hudson Bay Ry., Winnipeg, Man., born at Aberdeen, Scotland, Oct. 15, 1877.

T. F. Rahilly, ex-Superintendent, Algoma Eastern Ry., now of Sault Ste. Marie, Ont., born at Diorite, Mich., Oct. 6, 1892.

H. G. Reid, General Master Mechanic, Western Lines, Canadian National Rys., Winnipeg, born at Pembroke, Ont., Oct. 27, 1863.

W. S. Rollo, agent, G.T.R., St. Johns, Que., born at Dundee, Scotland, Oct. 8, 1852.

O. J. Rowe, Local Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., born at Binghamton, N.Y., Oct. 11, 1879.

J. K. Savage, General Superintendent, Quebec District, C.P.R., Montreal, born at Forreston, Ill., Oct. 5, 1876.

Right Hon. Lord Shaughnessy, K.C. V.O., Chairman, C.P.R., Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

T. Duff Smith, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, born at Barking, Essex, Eng., Oct. 2, 1868.

C. E. Stockdill, Assistant to Vice President, Western Lines, C.P.R., Winnipeg, born at London, Ont., Oct. 25, 1881.

D. A. Storey, ex-Freight Traffic Manager, Canadian Government Railways, Moncton, N.B., now of Kingston, Ont., born at Halifax, N.S., Oct. 26, 1853.

E. N. Todd, General Foreign Freight Agent, C.P.R., Montreal, born at Huntingdon, Que., Oct. 17, 1879.

J. H. Valleau, Secretary-Treasurer, Thousand Islands Ry. and Oshawa Ry., Gananoque, Ont., born at Selby, Ont., Oct. 14, 1889.

J. A. Vallerand, Superintendent and General Freight and Passenger Agent, Roberval - Saguenay Ry., Chicoutimi, Que., born at Quebec, Que., Oct. 21, 1878.

R. Walton, Division Master Mechanic, Farnham Division, Quebec District, C.P. R., Farnham, Que., born at Peterborough, Ont., Oct. 16, 1880.

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**New Hotel for Montreal.**—Arrangements are reported to have been completed for the formation of the Mount Royal Hotel Co., with $10,000,000 authorized capital, to build a 1,000 room hotel in Montreal. The site of the old High School, in the block surrounded by Peel, Burnside and Metcalfe streets, just above St. Catherine St., is said to have been secured for the new building. Among those interested in the company are:—F. A. Dudley, President, United Hotels Co. of America; Hon. W. J. Shaughnessy, a C.P.R. director; H. G. Kelley, President, G.T.R.; Senator L. C. Webster, President, Webster Steamship Co. and Quebec Ry., Lgiht & Power Co.; W. W. Butler, President, Canadian Car & Foundry Co.; A. D. MacTier, Vice President, Eastern Lines, C.P.R.

## Traffic Orders by Board of Railway Commissioners.

### Increases in Railway Freight and Passenger Rates.

General order 308, Sept. 9, general order 309, Sept. 9, and general order 310, Sept. 15, are given in full under "Increases authorized in Railway Freight and Passenger Rates" on pages 532 and 533 of this issue.

### Reconsigning Rates and Penalty Charges.

General order 307, Sept. 1.—Re reconsigning rules and penalty charges for detention of equipment in interstate traffic passing through Canada, and general order 305, Aug. 19, 1920: It appearing that the Interstate Commerce Commission has suspended clause 2 of the emergency penalty charges authorized by its special permission 50,321, July 31, 1920, the clause reading as follows:—"On all open top cars, and on all cars loaded with coal or coke, not released within the free time as prescribed in the National Car Demurrage Rules, J. E. Fairbanks, I.C.C. no. 8, supplements thereto or reissues thereof, a storage charge of $10 a car per day or fraction of a day will be made until car is released." It is ordered that general order 305 be amended accordingly.

### Automobile Tire Chain Rates.

30,030. Aug. 17.—Re application of American Audit Co., Spokane, Wash., for a ruling as to the legal rate on automobile tire chains, in less than carloads, from Victoria Park, Ont., to Vancouver, B.C., on June 29, 1918, via rail, lake and rail: Upon hearing the application in Ottawa, on May 18, 1920, in the presence of counsel for the Canadian Pacific and Grand Trunk Railway, the Canadian Freight Association being represented at the hearing, and what was alleged; and upon reading the report of the Board's Chief Traffic Officer, it is declared that the rate applicable to automobile tire chains, in less than carloads, from Victoria Park, Ont., to Vancouver, B.C., on June 29, 1918, via rail, lake and rail, was the second class rate shown in Canadian Freight Association tariff 2-A, C.R.C. no. 10, effective April 20, 1918, viz., $3.10 per 100 lb., in accordance with item 28, page 6, supplement 5 to Canadian Freight classification 16, reading as follows, viz., "Chains: automobile tire, in boxes or barrels, l.c.l., 2nd class."

### Coal Shipments by Water to United States.

General order 312, Sept. 24. — Re question of coal supply in Canada: and an order amending general order 301, dated July 22, and the powers conferred upon the Board by chap. 66 of the Acts of Parliament of Canada, 1920. Upon its appearing to the Board that a permit system is essential to render more effective the intent and purpose of general order 301, and in pursuance of the powers conferred by the said Act, the Board doth order that the general order 301 be amended by the addition thereto of the following words, viz., "And in the case of each shipment by water to the United States an export permit must first be secured from this Board."

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**Hamilton's Railway Problems.** — N. Cauchon, C.E., Ottawa, who is advising Hamilton, Ont., City Council on civic improvements in which the routes of the railways entering the city are involved, is reported to have had an interview with H. G. Kelley, President, G.T.R., who expressed his willingness to discuss the question.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Albert & Great Waterways Ry.** — A press report states that the Alberta Government has entered into an agreement with the Northern Construction Co. for putting the A. & G. W. Ry., from Lac la Bertie to McMurray, into a condition suitable for operating through trains in 1921. The A. & G. W. Ry. starts from Carbondale on the Edmonton, Dunvegan & British Columbia Ry., and has been in operation for three years or more to Lac la Biche, 113.2 miles, and track has been laid to within 12 miles of McMurray, at approximately mile 294. (Aug., 1919, pg. 431.)

**Atlantic, Quebec & Western Ry.** — A press report states that a long high trestle east of Newfort, Que., has been rebuilt, the work being rendered necessary by a forest fire. During the reconstruction trains were run to either end of the trestle, and passengers were transferred by ordinary vehicles.

**Boston & Maine Rd.**—The Board of Railway Commissioners has authorized the rebuilding of the overhead highway bridge 93, at mile 0.1 north of Smiths Mills station, Que. While Smiths Mills is mentioned in the order, the name of the station has been changed to Tomitobia, and it is situated at mile 30 from Sherbrooke, Que., on the line to Newport, Me.

**Burrard Inlet Tunnel & Bridge Co.**—The following directors are reported to have been elected at the annual meeting at North Vancouver, B.C., Sept. 8:—Reeve E. H. Bridgeman, President; Mayor Vance, Vice President; J. Loutet, Alderman Townsley, P. Ward, J. McNaught, Reeve Vinson, Mayor Gale, Alderman Woodside; Secretary-Treasurer, E. Cockerell. The shareholders are the cities of Vancouver and North Vancouver, and the adjoining municipalities, and the directors are their representatives. The company has a Dominion charter to build a bridge across the second narrows of Burrard Inlet, a tunnel and railway connecting with the trunk railways lines. (June, pg. 297.)

**Canadian Niagara Bridge Co.**—A recent press report stated that engineers were working from boats in the Niagara River, making test holes in the river bed for foundations for the proposed new bridge across the Niagara River near Grand Island. All the preliminary work on the United States side of the river is said to have been completed, and all the land necessary for the bridge and the railway approaches is said to have been secured. It is said the bridge will span the river from Black Rock to Grand Island on the Canadian side, and from Grand Island to near the Wickwire steel plant on the U.S. side of the river.

The Board of Railway Commissioners has approved a route map showing general location of the company's proposed bridge and railway from the International Boundary opposite Grand Island, in the Niagara River, to connect with the Michigan Central Rd., about 3.15 miles northeast of Welland, Ont. (July, pg. 386.)

**Edmonton, Dunvegan & British Columbia Ry.**—In connection with the taking over of the Edmonton, Dunvegan & British Columbia Ry. and the Central Canada Ry. for operation, we have been officially advised that it is at present difficult to give any specific information as to the betterments required or proposed to be undertaken. It is well known that, on account of financial conditions, the property is badly run down, and the first duty of the new management will be to catch up with arrears in the renewals; to make provision for sliding banks, along the Peace and Smoky Rivers; to surface and ballast the Grande Prairie branch; to erect suitable section houses and other buildings for the maintenance staff, and in a general way to bring the road up to ordinary railway branch line standard. Several contracts are reported to have been let for ties, steam shovels and ditching machines are reported to have been distributed along the line, and to be at work.

It is expected that the present terminal arrangements with the Grand Trunk Pacific Ry. at Edmonton, Alta., will be cancelled and that a new terminal arrangement will be made with the C.P.R. (May, pg. 235.)

**Esquimalt & Nanaimo Ry.**—Some matters of detail in connection with the construction of the bridge at Johnston St., Victoria, B.C., are before the Board of Railway Commissioners, and it is probable that they will be finally adjusted when the Commission sits at Victoria, Oct. 11. The bridge is being built by the city and the railway company. (Sept., p. 489.)

**Grand Trunk Ry.**—A press report states that additional siding accommodation is about to be provided at Thorold, Ont., at an estimated cost of $15,000.

A press report says that double tracking of Air Line Division from Bridgeburg to Windsor, Ont., under lease to the Wabash Ry., is under consideration, but that no work will be done on it until 1921 at the earliest.

**Kettle Valley Ry.**—A recent press report stated that good progress had been made with grading the line from Penticton to Dog Lake, B.C., and that the grading would be completed by the end of September. It is expected that track laying will be started immediately grading is completed. (Sept., pg. 489.)

**Manitoba.**—A press report states that the Manitoba Government is about to take steps for the construction of a railway into the northern Manitoba mineral belt. The explored mining area follows a chain of lakes and waterways from Lake Athapapuskow east through Schist and Flin Flon Lakes to Herb Lake, about 90 miles. In part of the Lake Athapapuskow district are large deposits of copper sulphide ore; in the Herb Lake region gold is the predominating mineral. (See Flin Flon Mining Proposition, June, pg. 297.)

**Margaree Coal & Ry. Co.**—The Nova Scotia Government has revoked the registration of the Margaree Coal & Ry. Co., which was incorporated some years ago under the Nova Scotia Companies Acts. An act was passed by the N.S. Legislature at the 1903-4 session incorporating the Margaree Coal & Ry. Co., to build a railway from the Chummy Corner mines, Inverness County, to Chummy Corner Cove, Margaree Harbor and Cheticamp, and from Margaree Harbor via Margaree River valley and Lake Ainslie to the projected Harbor & Gulf Ry. (if built) or if that railway was not built, the line was to be carried on to Orangedale on the Intercolonial Ry., and from Orangedale to Caribou Cove or Inhabitants Bay, near Point Tupper. The company was also authorized to build branch lines. The line from Margaree to Cheticamp, the act provided, was not to be built if the Inverness Ry. & Coal Co. built its projected line from Broad Cov to Cheticamp. An agreement was entered into between the company and the Nova Scotia Government in 1907 for the construction of the line, and in 1910 the Dominion Parliament vote a subsidy at the usual rate and on the regular terms for building a line from Margaree to Chummy Corners, to Orangedale and to Caribou Cove, 50 miles, which subsidy was renewed in 1913. No construction has been done on the projected lines. July, 1913, pg. 331.)

**Nova Scotia Steel & Coal Co.**—A press report states that the company has started construction on a spur line of two miles, from the existing line at Scotia no. 4 colliery to Banner Head, in connection with the opening up of a new colliery there, and that there is a probability of the line being extended three miles further to Point Acme colliery.

**Pacific Great Eastern Ry.**—The British Columbia Government, under an act passed last session of the Legislature, has sold $3,000,000 of provincial bonds at 98.91, the proceeds of which will be utilized for construction on the P.G.E.R. The estimated cost of completing the line to Prince George, which is the immediate objective, is $4,000,000, and the loan authorized was to make up that amount.

Track is laid to Deep Creek, the viaduct across which was expected to be completed by Sept. 30, and it is expected to have track laid from that point to Quesnel, and from Prince George to Quesnel (as work is being proceeded with from both ends) by Dec. 31.

The question of the extension of the line from Prince George to a connection with the Edmonton, Dunvegan & British Columbia Ry. in the Peace River Valley, is reported to be again under consideration, and survey parties are reported to be in the field preparing route maps and reports as to the character of the territory to be opened up.

A press report recently stated that A. F. Proctor, Chief Engineer of the B.C. Railway Department, expected that an additional 84 miles of track on the P.G.E.R. would be handed over by the contractors to the operating department during September. This additional mileage will give the railway a line from Squamish to Deep Creek, 294 miles.

A. B. Buckworth, the recently appointed General Manager, is reported to have completed his first official trip of inspection over the line Aug. 17, and to have said that rapid progress was being made with the viaduct at Deep Creek.

**Pacific Great Eastern Ry.**—The Premier of British Columbia returned recently to Victoria after a trip of inspection over this railway under construction to Prince George and a visit to the Peace River country and Edmonton, Alta. Settlers in the Peace River country urged the construction of the line from Prince George to a junction with the Edmonton, Dunvegan & British Columbia Ry. at the interprovincial boundary. The B.C. Government has the matter under consideration.

A recent press report stated that freight trains would be operated through from Squamish to Williams Lake by Sept. 15. (July, pg. 386.)

**Pere Marquette Rd.**—A recent press report stated that the Sarnia, Ont.,

Chamber of Commerce was about to take up with the Pere Marquette Rd. Co. the question of the provision of larger and more modern terminal facilities there.

**Porcupine-Rand Belt Electric Ry. Co.** wos incorporated by the Ontario Legislature in 1912 to build a railway to be operated by steam, electricity or any other motive power from the eastern boundary of Ontario in McGarry Tp., westerly to Larder City, through other townships to Dane, crossing the Timiskaming & Northern Ontario Ry., and on to the headquarters of the Montreal River, and to the eastern shore of the Mattagami River at Kenogamesse Lake, and to connect at various points with the T. & N. O. Ry. and to build branch lines. After some attempts had been made to arrange for the building of the line by the original company, the charter is reported to have passed under the control of the Associated Goldfields Mining Co., Ltd., which has large interests in the Kirkland Lake mining district. This company is reported to have been interested in the endeavor, referred to elsewhere in this issue, to induce the Ontario Government to build a branch of the T. & N. O. Ry. from Swastika to the Kirkland area. The government, before deciding as to the construction of the suggested line, desired to make an independent investigation of the mining areas to be served, but failing to secure the Associated Goldfields Mining Co.'s cooperation in the matter, decided not to build.

G. A. Mackay, President A. G. M. Co., wrote the Ontario Minister of Mines July 27 as follows:—"In pursuance of our conversation of today, and our interview with the Premier a few days ago, I have taken up the matter with the directors of Associated Goldfields Mining Co., and those of the Porcupine-Rand Belt Ry., which charter, as you know, this company owns. It was originally our directors opinion that our transportation needs would be served more quickly if our company were to build itis own line of railway, and at the same time we would be able to locate it at such points as would serve our interests best, and it was only with the idea of serving as many of the other deserving operators in the district as possible that the course of the road was more or less diverted to the Kirkland Lake-Swastika route. It is our directors' opinion that only a very comprehensive investigation of our ore bodies would be fair to the province, and figuring all the assistance which we would be able to give the men in charge, this investigation would still entaile several months time. Coupling this with the fact that the Kirkland Lake-Swastika route would be more than twice as long, our directors feel that our requirements could be more speedily served by the company constructing its own line of railway from at or near Boston Creek to Larder Lake. Presuming from our conversation that your government has no objection to our following this course, we have decided to send our engineers at once over the short route and give us facts and figures as to the cost of this line." (Nov., 1916, pg. 460.)

**Queens County Ry.**—The Nova Scotia Government has revoked the registration of the Queens County Ry. Co., incorporated under the Nova Scotia Companies Acts. The Nova Scotia Legislature passed an act in 1909 incorporating the Queens County Ry. Co., to take over the railway, switches, etc., of the Sable Lumber Co. from Wilkins Siding, Queens County, to the Sable Lumber Co.'s lands and to extend the railways on these lands and to buy or build a railway or tramway from between Liverpool and Shelburne, on the Halifax & Southwestern Ry. to the limits. (June, 1912, pg. 302.)

**St. George, Nfld., Coal Areas.**—A press report states that the Newfoundland Railway Commission visited the St. George coalfields at Robinsons recently and looked over the route for the proposed railway therefrom to the sea. (April, pg. 176.)

**Sydney & Louisburg Ry.**—The Dominion Coal Co., which owns the Sydney & Louisburg Ry., has deposited with the Dominion Minister of Public Works under the Navigable Waters Protection Act, a description of the site and plans of repairs to the rest pier and ice protection work in connection with the swing span of the railway bridge over the Nura River, Cape Breton County, N.S., and has applied for leave to build the same. W. C. Richy, Sydney, is the company's Engineer of Maintenance and Way. (Mar., pg. 137.)

**Timiskaming & Northern Ontario Ry.** A press report of Sept. 6 stated that the Kirkland Lake district mine owners had been advised by the Ontario Minister of Mines that the Government had decided not to build a spur line from the Timiskaming & Northern Ontario Ay. at Swastika to serve the Kirkland and Larder Lake mining areas. The mine owners are reported to be very much dissatisfied with the communication and are said to be considering a proposition to build a line for themselves. (See also Porcupine-Rand Belt Line Ry.)

## Canadian Pacific Railway Construction, Betterments, Etc.

**St. John Bridge.**—The St. John, N.B., City Council was advised Aug. 30 that some members of the Board of Railway Commissioners expected to be in the city during the third week in September in connection with the erection of the new C.P.R. bridge at the reversible falls, St. John River.

**Timiskaming-Ville Marie - Des Quinze Falls line.**—A press report states that an early start upon the extension of the Timiskaming-Kippawa line, along the east shores of Lake Timiskaming to Ville Marie, and on the Des Quinze Falls is looked for. Surveys for the uncompleted portion of the line to the Falls are reported to have been completed.

**Chalk River Subdivision.**—The Board of Railway Commissioners has authorized the company to rebuild bridge 32.7, Chalf River Subdivision, Quebec District.

**Port McNicoll Subdivision.**—The Board of Railway Commissioners has authorized the company to fill in bridge 58.2, Port McNicoll Subrivision, Trenton Division, Ont.

**Windsor Improvements.**—A press report of Sept. 21 stated that the Board of Railway Commissioners had under consideration the question of the closing of a street in Windsor, Ont., in connection with the projected yard improvements there, and that until this was settled work was being held up.

**North Bay Subdivision.**—The Board of Railway Commissioners has approved plan of proposed alterations to masonry to suit new reinforced concrete span crossing highway at bridge 21.12, North Bay Subdivision, Algoma District, Ont.

**Cartier Subdivision.** — The Board of Railway Commissioners has authorized the replacing of the present 60 ft. deck plate girder bridge at mile 38.92, Cartier Subdivision, Ont., by two 32 ft. reinforced concrete spans.

**Jack Pine River Bridge.**—The Board of Railway Commissioners has authorized the company to rebuild bridge 46.4 over Jack Pine River, Nipigon Subdivision, Algoma District, Ont.

**For William Coaling Plant.**—Work is reported about to be started on an extension of the company's coal handling facilities at Island 1, Fort William, Ont. About 6,000 piles are to be driven in connection with the work, which will include the laying out of a new dumping ground. S. McKenzie is reported to be the contractor for the piling work.

**Amulet to Dunkirk Branch.**—The Board of Railway Commissioners has approved route map showing location of branch line from Amulet to Dunkirk, Sask., mile 0, in Tp. 7, Range 21, to mile 60.2, in Tp. 12, Range 28, west 2nd meridian.

**Asquith to Cloan Branch.**—The Board of Railway Commissioners has approved of route map showing location of branch line Asquith to Cloan, from Tp. 36, Range 10, to Tp. 42, Range 20, west 3rd meridian, mile 0 to 84.2. Asquith is on the line from Saskatoon to Wilkie, and Cloan is on the line from Wilkie to Cutknife, Sask.

**Rosetown Southeasterly Branch.**—The Board of Railway Commissioners has approved route map showing general location of the branch from Rosetown southeasterly to Keppel, Sask., mile 0, in Tp. 30, Range 15, to mile 37.2, in Tp. 2, Range 13, west 3rd meridian.

**Lanigan Northeasterly Branch.** — The Board of Railway Commissioners has authorized the building of the branch, under construction from Lanigan, Sask., across 23 highways between miles 47.8 and 84.32.

**Kelfield Southeasterly.**—The Board of Railway Commissioners has approved route map of the Kelfield southeasterly branch from Tp. 34, Range 29, to Tp. 32, Range 14, west 3rd meridian, mile 0 to 35.9. Kelfield, Sask., is the present terminus of a branch line from Wilkie, southeasterly, and it is proposed to extend it to a connection with the line running from Hawarden to Macklin at or near Anglia, Sask. The route map mentioned above covers the entire mileage of the extension.

**Kipp Northeasterly Branch.** — The Board of Railway Commissioners has approved of route map showing general location of the Kipp, Alta., northeasterly branch, mile 0 to 39.70.

**Empress to Milden Line.** — The Board of Railway Commissioners has approved revised location of the Bassano easterly branch, mile 169.85 to 172.75, on the Empress-Milden, Alta., section of the line, and has authorized the crossing of certain road allowances. (Sept., pg. 483.)

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**G.T.R. Apprentices Win Prizes.** — Of six prizes awarded at the Canadian National Exhibition, Toronto, recently, for mechanical drawing, five were given to apprentices in G.T.R. shops, viz., G. Dutaub, and L. Inquire, Montreal; A. Capper and W. Grandison, Stratford, Ont., and D. Lamont, Ottawa.

# Canadian National Railways Construction, Betterments, Etc.

**Cape Breton Landslides.** — Owing to heavy land slides on the line beyond Point Tupper on Cape Breton Island, N.S., on Sept. 13, caused by floods, traffic was suspended between Sydney and Point Tupper for several days. It is reported that the line was washed out at five or more points between Point Tupper and Orangedale, and that two trains were thrown off the tracks. Temporary repairs were effected and traffic was resumed Sept. 17.

**Petitcodiac River bridge superstructure.**—We are officially advised that that superstructure, for the new bridge 1.4 across the Petitcodiac River on the Albert Subdivision from Salisbury, N.S., described in Canadian Railway and Marine World for Sept., pg. 484, will be erected by the railway forces.

**St. John Elevator.**—Tenders were received to Sept. 12 for the manufacture, delivery and installation of a dust conveyor system for the grain elevator at St. John, N.S.

**St. John Freight Yards.**—A press report states that good progress has been made with enlarging the freight yards at St. John, N.B.

**St. John Union Station Shed.**—Considerable progress is reported to have been made with the erection of butterfly roofs at the Union Station, St. John, N.B.

**Morin Heights, Que.**—The Board of Railway Commissioners has ordered the building of a station at Morin Heights, Que.

**Mount Royal Tunnel & Terminal Co.**—The Board of Railway Commissioners has authorized the connecting of this company's tracks near Montreal with the Jacques Cartier Union Ry. This will establish a physical connection between the Canadian National Rys. terminals in Montreal and the Grand Trunk Ry.

**Moira River Bridge.**—The Board of Railway Commissioners has authorized the rebuilding of the bridge over the Moira River in Madoc Tp., at mile 76.84 from Picton, Ont., and also the improvement of the grade there.

**Thunder Bay District.**—The Board of Railway Commissioners has authorized the rebuilding of bridge over Blackwater River, Thunder Bay District, mile 21.4 from Jellicoe, Ont.

**Tie Contracts.**—Tenders were received to Sept. 25 for the supply of 1,500,000 ties to be made and delivered between Dec. 1, 1920, and Nov. 1, 1921, as follows:—900,000 on the Grand Trunk Pacific Ry. in British Columbia; 200,000 on the G.T.P.R. in Alberta, and 400,000 on the National Transcontinental Ry. in Manitoba and Ontario between Winnipeg and Sioux Lookout.

**Marchand, Man.**—The Board of Railway Commissioners has approved location and plans for a station at Marchand, to be completed by Nov. 15.

**Regina.**—The Regina, Sask., City Council is reported to have approved an application for the erection of a spur track to the west side of Albert St.

**Prince Albert-Paddock Wood Branch.** The Board of Railway Commissioners has approved route map of the branch line under construction from Prince Albert, Sask., northeasterly, mile 0 to 26.094.

**Swift Current-Gravelbourg Line.**—The President of the Swift Current, Sask., Board of Trade is reported to have received a telegram from D. B. Hanna, President, C.N.R., stating that it is intended to lay track on a further distance of 18 miles on this line during this year if the necessary labor can be obtained.

**Junkins, Alta.**—The Board of Railway Commissioners has approved of plans of proposed additions to the statin grunds at Junkins, 4 miles westerly of Lobstick Jct., on the main line between Edmonton and Vancouver.

**Kamloops - Vernon - Lumby - Kelowna Branch.**—The Board of Railway Commissioners has approved of plans, profiles and books of reference of revised location through Tp. 19, Range 14, and Tp. 19, Range 15, B.C.; through lots 297 and 296, Kamloops Division, Yale District, B.C., and through Tp. 18, Range 14, west 6th meridian, and D. L. 442, G.1, Kamloops Division, Yale District. The right of way in the latter case is limited in certain places to 100 ft. wide except in certain specified places.

The Board of Railway Commissioners has approved plans showing revised locations on this branch as follows:—From mile 27 to 28, from mile 31.5, and from mile 44.7 to 46.11, all east of Kamloops Jct., B.C., and has also authorized the building of the line across Shuswap Ave., B.C.

**British Columbia Buildings.**—Tenders are reported to be under consideration for the erection of workmen's cottages and two cinder hoist foundations at Blue River and Boston Bar respectively; a freight shed and platforms at Kamloops; section houses at Birch Island and Matsqui; concrete retaining walls, culverts, etc., at Boston Bar and Port Mann, B.C.

**False Creek Sea Wall Litigation.**—A press report of Sept. 15 stated that the dispute between Champion & White and the Canadian Northern Ry. as to the construction of the sea wall at the False Creek reclamation works, Vancouver, had been settled by the payment of $100,000 by the Canadian National Rys. Champion & White are reported to have received $60,000, and A. B. Creelman, Ltd., the contractors, $40,000. (Sept., pg. 484.)

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**Railway Car Manufacturers Association Convention.**—The annual convention of the Railway Car Manufacturers Association of United States was held in Montreal Sept. 17 and 18. The association's annual dinner was held at the National Club Sept. 17, at which there were a number of speakers, including D. B. Hanna, President Canadian National Rys. The members made a trip of inspection to the Angus shops of the C.P.R., Sept. 18, going by special train, in charge of W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., and subsequently were guests at a luncheon given by the Canadian Car Builders' Association, W. W. Butler, President, Canadian Car & Foundry Co., presiding.

**Saskatchewan Recouped for G.T.P.R. Guarantees.**—A Regina press dispatch says that the protracted negotiations between the Dominion and Saskatchewan Governments for the refund of money advanced by it to meet the interest falling due on provincially guaranteed bonds of the Grand Trunk Pacific Ry. have been completed by the Dominion Government paying the province $862,252.

## Chamber of Commerce Delegates' Tour of Ontario and Quebec.

The delegates to the Ninth Congress of Chambers of Commerce of the British Empire, which met in Toronto during the fourth week in September, left Toronto Sept. 24 on a tour of Ontario and Quebec, travelling over Canadian National, Canadian Pacific, Grand Trunk, Timiskaming and Northern Ontario Railways. The trip was scheduled to occupy seventeen days and to give them an opportunity of inspecting the agricultural, industrial and mining regions of the two provinces. For the information of the delegates the four railways interested in the movement had prepared a handsome book descriptive of the route to be traversed. On the cover, in black and gold, are coats of arms of the various commonwealths and dependencies of the British Empire represented at the congress. The book is profusely illustrated, the scenic beauties and industrial enterprises of the provinces being features. The foreword of the book gives a resume of the resources of the two provinces and each center of importance on the 2,500 miles of railway embraced in the trip. Accompanying the book is a map showing the natural resources, transportation and trade routes of the whole of Canada. The delegates will be able to take away with them in this book a very complete and accurate synopsis of what Ontario and Quebec offer to the investor, manufacturer and the settler.

## Freight and Passenger Traffic Notes.

The Canadian National Rys. have announced a large number of changes in train service, taking effect Oct. 3.

The Montreal Harbor Commissioners will not accept shipments of explosives, export or inland, which will have to be handled over any portion of its railway.

The Canada Steamship Lines on Sept. 20 carried about 30,000 baskets of fruit from the Niagara district to Toronto, its average during the later part of September being about 25,000 baskets a day.

The Grand Trunk Ry. is reported, owing to the increasing number of thefts of freight in transit, to be about to increase its police force on the line between Montreal and Toronto. The headquarters of the extra force will, it is said, be at Brockville, Ont.

Owing to a proclamation of the Mayor of Toronto abandoning daylight saving time at midnight, Sept. 12, the C.P.R., the G.T.R. and the Canadian National Rys., which had some trains running on daylight saving time in and out of Toronto, for the convenience of business people, restored them to standard time. All other trains running on daylight time will be restored to standard time on Sunday, Oct. 3, when the daylight saving plan will have been abandoned for the year.

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The Board of Railway Commissioners will hold sittings in the west as follows: Winnipeg, Man.. Sept. 28; Saskatoon, Sask., Sept. 20; Edmonton, Alta., Octo. 1; Prince George, B.C., Oct. 4; Prince Rupert, B.C., Oct. 6; Victoria, B.C., Oct. 11; Vancouver, B.C., Oct. 12; Nelson, B.C., Oct. 18; Calgary, Alta., Oct. 20; Medicine Hat, Alta., Oct. 22; Regina, Sask., Oct. 23; Winnipeg, Man., Oct. 25; Port Arthur, Ont., Oct. 27.

# Railway Rolling Stock Orders and Deliveries.

The Timiskaming & Northern Ontario Ry. is in the market for 4 Pacific type locomotives.

The C.P.R., between Aug. 15 and Sept. 16, received 3 passenger locomotives and 8 vans from iits Angus shops, Montreal.

The C.P.R. has ordered 15 Mikado (2-8-2) locomotives from Montreal Locomotive Works.

The Reid Newfoundland Co. has ordered 200 trucks from Canadian Car & Foundry Co., for delivery in November.

The Pacific Great Eastern Ry. has received 2 Mikado locomotives from Canadian Locomotive Co., completing an order for 3, details of which were given in Canadian Railway and Marine World for February, page 126.

Canadian Car & Foundry Co., between Aug. 14 and Sept. 14, made the following deliveries:—126 Hart-Otis ballast cars and 124 box cars from Montreal works, and 43 cabooses from Amherst works, to Canadian National Rys.; 7 tank cars to Imperial Oil Ltd.; and 22 air dump cars to Greater Winnipeg Water District Ry.

Canadian National Rys. has received the following rolling stock to Sept. 15:—from Canadian Car & Foundry Co., 13 observation, buffet compartment sleeping cars, completing an order for 18, 87 box cars out of an order for 1,000, and 79 cabooses out of an order for 80; from Eastern Car Co., 629 general service cars, out of an order for 1,150; from Hart Otis Car Co., 182 ballast cars, out of an order for 350; from Preston Car & Coach Co., 5 cabooses out of an order for 20; from Canadian Locomotive Co., 20 switching locomotives out of an order for 30.

The Singer Manufacturing Co. has ordered one 4 wheel locomotive (0-4-0) from Montreal Locomotive Works. Following are the chief details:—

| | |
|---|---|
| Weight . . | 79,000 lb. |
| Wheel base | 7 ft. |
| Cylinders, diar. and stroke | 14 x 22 in. |
| Wheel diar. | 40 in. |
| Journals | 7 x 8 in. |
| Boiler, type | Straight top |
| Boiler, diar. inside first ring | 45 in. |
| Boiler pressure | 190 lb. |
| Firebox, length and width | 46⅛ x 50¼ in. |
| Tubes, no. and diar. | 112 2 in. |
| Heating surface, tubes | 680 sq. ft. |
| Heating surface, firebox | 60 sq. ft. |
| Heating surface, total | 740 sq. ft. |
| Grate area | 16.2 sq. ft. |
| Tractive power | 17,400 lb. |
| Factor of adhesion | 4.5 |
| Reverse gear | Hand lever |
| Cab . | Wood |
| Valve gear | Stephenson |
| Tank, type | Saddle |
| Water capacity | 1,700 gal. |
| Coal, capacity | 1,600 lb. |

La Moleunee Estate (Boos & Co.) has ordered three 4-coupled (0-4-2) locomotives from Montreal Locomotive Works. Following are the chief details:—

| | |
|---|---|
| Weight on drivers | 36,000 lb. |
| Weight on trailer | 6,000 lb. |
| Weight, total | 42,000 lb. |
| Wheel base, driving | 4 ft. 9 in. |
| Cylinders, diar. and stroke | 11 x 16 in. |
| Driving wheel, diar. | 33½ in. |
| Driving journals | 5 x 6 in. |
| Trailer wheel, diar. | 18 in. |
| Trailer wheel journals | 3½ x 6 in. |
| Boiler, type | Straight top |
| Boiler, diar. inside first ring | 36 in. |
| Boiler pressure | 165 lb. |
| Firebox, length and width | 40 3/16 x 32⅝ in. |
| Tubes, no. and diar. | 85 2 in. |
| Heating surface, tubes | 267 sq. ft. |
| Heating surface, firebox | 41 sq. ft. |
| Heating surface, total | 408 sq. ft. |
| Grate area | 9.3 sq. ft. |
| Tractive power | 8,100 lb. |
| Factor of adhesion | 4.4 |
| Reverse gear | Hand lever |
| Cab . | Wood |
| Tank, type | Saddle |
| Water capacity | 700 gal. |
| Fuel . . | Oil |
| Fuel capacity | 400 gal. |

The Algoma Eastern Ry., as stated in our last issue, has ordered two consolidation (2-8-0) locomotives from Montreal Locomotive Works. Following are the chief details:—

| | |
|---|---|
| Weight on drivers | 216,500 lb. |
| Weight on truck | 25,000 lb. |
| Weight, total | 241,500 lb. |
| Wheel base, driving | 15 ft. 10 in. |
| Cylinders, diar. and stroke | 23½ x 30 in. |
| Driving wheels, diar. | 57 in. |
| Driving journals, main | 10½ x 21 in. |
| Driving journals, others | 10 x 14 in. |
| Truck wheels, diar. | 30 in. |
| Truck wheel journals | 6½ x 12 in. |
| Boiler, type | Extended wagon top |
| Boiler, diar. inside first ring | 72 7/16 in. |
| Boiler pressure | 200 lb. |
| Firebox, length and width | 109 x 63¾ in. |
| Tubes, no. and diar. | 208 2 in. |
| Flues, no. and diar. | 34 5⅜ in. |
| Heating surface, tubes | 1,538 sq. ft. |
| Heating surface, flues | 676 sq. ft. |
| Heating surface, f.b. tubes | 27 sq. ft. |
| Heating surface, firebox | 200 sq. ft. |
| Heating surface, total | 2,441 sq. ft. |
| Grate area | 49 sq. ft. |
| Tractive power | 49,500 lb. |
| Factor of adhesion | 4.37 |
| Superheater....Locomotive Superheater Co., type A | |
| Reverse gear | Ragonnet |
| Cab . . | Vestibule type |
| Tender frame | Steel channels |
| Tender wheel, diar. | 33 in. |
| Tender truck type | C. N. standard pedestal |
| Tender journals | 5½ x 10 in. |
| Tank, type | Water bottom |
| Water capacity | 6,600 imp. gal. |
| Coal capacity | 12 tons. |

The Cordoba Central Ry., Argentine, has ordered 15 Mikado (2-8-2) locomotives from Montreal Locomotive Works. Following are the chief details:—

| | |
|---|---|
| Weight on drivers | 121,500 lb. |
| Weight on truck | 18,000 lb. |
| Weight on trailer | 23,500 lb. |
| Weight, total | 163,000 lb. |
| Wheel base, driving | 13 ft. 6 in. |
| Cylinders, diar. and stroke | 21½ x 24 in. |
| Driving wheel, diar. | 48 in. |
| Driving journals, main | 9 x 9 in. |
| Driving journals, others | 8 x 9 in. |
| Trailer wheel, diar. | 31 in. |
| Trailer wheel journals | 6 x 12 in. |
| Truck wheel diar. | 31 in. |
| Truck wheel journals | 5½ x 9 in. |
| Boiler, type | Srtaight top, Belpaire |
| Boiler, diar. inside first ring | 65 in. |
| Boiler pressure | 180 lb. |
| Firebox, length and width | 81¼ x 63¼ in. |
| Tubes, no. and diar. | 27 5⅜ in. |
| Heating surface, tubes | 1,458 sq. ft. |
| Heating surface, flues | 661 sq. ft. |
| Heating surface, firebox | 147 sq. ft. |
| Heating surface, total | 2,266 sq. ft. |
| Superheating surface | 570 sq. ft. |
| Grate area | 35.6 sq. ft. |
| Tractive power | 27,730 lb. |
| Factor of adhesion | 4.38 |
| Superheater.....Locomotive Superheater Co. firebox tube type | |
| Reverse gear | Hand lever |
| Cab . | Steel plate |
| Valve gear | Walschaert |
| Tender wheel, diar. | 31 in. |
| Tender truck, type | Equalized |
| Tender journals | 5½ x 10 in. |
| Tank type | Water bottom |
| Water capacity | 5,400 gal. |
| Fuel . | Wood |
| Fuel capacity | 4 cords |

Railway Lands Patented.—Letters patent were issued during August for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

| | Acres. |
|---|---|
| Canadian Northern Ry. | 719.68 |
| Canadian Pacific Ry. grants | 2,860.20 |
| Canadian Pacific Ry., roadbed and station grounds . . | 4.65 |
| Grand Trunk Pacific Ry. | 35.30 |
| Total . . | 3,619.83 |

A Valuable Car Load.—C.P.R. hopper freight car 240,000 is reported to have carried from the Rothwell district, Man., to Fort William, Ont., recently, 250,000 bush. wheat, valued at $7,150.

A locomotive appliance is said to have been invented that will record the speed made by a locomotive at each point in a run, where it stops, and how long and where it has reversed.

## Grand Trunk Railway Arbitrators' Inspection of Properties.

The board of arbitrators appointed to decide the price to be paid by the Dominion Government for certain of the G.T.R. Co.'s stocks, Sir Walter Cassells, Judge of the Exchequer Court, chairman; Sir Thomas White, representing the Government and W. H. Taft, ex-President of the United States, representing the company, left Montreal Sept. 30, to inspect the G.T.R. and G.T. Pacific Ry.'s properties. They are accompanied by H. G. Kelley, President, G.T.R.; J. B. Berry, Valuation Engineer, G.T.R.; A. W. Atwater, K.C., and F. H. Phippen, K.C., of the G.T.R. counsel. Some other G.T.R. officials went along as far as Chicago. The Government's representatives on the train are E. L. Newcombe, Deputy Minister of Justice; and R. A. C. Henry, Valuation Engineer, G.T.R. The special train comprises Pullman private car Colonial; two business cars, Ottawa and Quinte; Pullman compartment car, cafe parlor car and baggage car, one car being specially reserved for the arbitrators' use, one for President Kelley and his officials, and one for the Government representatives, so that private conferences may be held en route.

President Kelley is reported to have said in an interview, just before starting:—"The object of the journey is to give the members of the arbitration board as intimate an idea as possible of the properties and condition of the G.T. R. System. It is being undertaken at the request of the G.T.R. The arbitrators will be shown all that is possible of the properties; they will be able to study for themselves at first hand the physical condition of the lines, and will learn much of the geographical condition. A number of railway, technical and other experts are being taken, so that whatever information the board requires may be given at once. The board is going to look into conditions as closely as possible, and undoubtedly it will call for the execution of a great deal of very hard work. In addition to the railway lines, the G.T. Pacific Coast Steamship Co.'s line will be thoroughly examined, that being part of the properties of the company to be taken over by the Government."

From Montreal the party proceeded to Toronto, Hamilton, Niagara Falls, London, Sarnia and Chicago, stopping at those places, and at other points, to inspect terminal and other facilities. From Chicago they went to Winnipeg, leaving there for Prince Rupert and intending to be back in Montreal during October. It start holding sittings about the middle is probable that the arbitrators will of November.

## Grain Inspected at Western Points.

The following figures, compiled by the Dominion Bureau of Statistics' Internal Trade Division, show the number of cars of grain inspected at Winnipeg and other points on the Western Division during August, and for 12 months ended Aug. 20, 1920 and 1920, respectively:—

| | Aug. 1920. | 12 mos. to Aug. 31, 1920 | 12 mos. to Aug. 31, 1919 |
|---|---|---|---|
| Canadian National Rys... | 1,284 | 54,329 | 51,182 |
| Canadian Pacific Ry. ..... | 2,058 | 73,966 | 70,203 |
| Grand Trunk Pacific Ry. | 199 | 20,280 | 15,311 |
| Great Northern Ry. (Duluth) . . | 29 | 696 | 1,025 |
| Totals . . | 3,570 | 149,271 | 15,311 |

# Orders by the Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 306. Aug. 27.—Approving Interstate Commerce Commission Special Permission 50,450, as amended, with respect to minimum carload weights of grain and grain products moving from U.S. points to Canadian destinations.

30,025. Aug. 18.—Authorizing G.T.R. to connect with Canadian National Rys. on north half of Rama Island, near Washago, Ont.

30,026. Aug. 24.—Authorizing G.T.R. to build spur for Consumers Glass Co., at Ville St. Pierre, Que.

30,027. Aug. 18.—Relieving Canadian National Rys. from providing further protection at highway crossing near St. Norbert station, Man.

30,028. Aug. 21.—Authorizing C.P.R. to lay tracks to proposed freight yard, at grade, across unopened portion of Caron Ave., Windsor, Ont.

30,029. Aug. 16.—Authorizing McDougall Tp., Ont., to make public highway crossing over C.P.R. at Nobel, Ont.

30,030. Aug. 17.—Re rate on automobile tire chains from Victoria Park, Ont., to Vancouver, B.C. This order was given fully in last issue.

30,031. Aug. 25.—Approving Central Canada Ry. bylaw authorizing its District Freight Agent and District Passenger Agent to prepare and issue tariffs of tolls to be charged for carriage of freight and passenger traffic.

30,032. Aug. 26.—Rescinding order 27,134, Apr. 16, 1919, in so far as it authorizes certain G.T.R. branches to be built on Toronto Harbor Commissioners' property in Ashbridges Bay.

30,033. Aug. 24.—Authorizing C.P.R. to build spur for Ontario Lime Co., Dufferin St., Toronto.

30,034. Aug. 24.—Authorizing C.P.R. to divert road allowance on north boundary of Sec. 3, Tp. 13, Range 3, west principal meridian, and to close diverted portion within its right of way at mile 31.4, Carberry Subdivision, Man.

30,035. Aug. 24.—Authorizing G.T.R. to build spur for British American Oil Co., Hamilton, Ont.

30,036. Aug. 24.—Authorizing C.P.R. to build its Lanigan Northeasterly Branch, at grade, across three road allowances.

30,037. Aug. 20.—Authorizing G.T.R. to use bridge 221, District 4, Montreal Division, over stream on Lot 27, southwest concession of St. Regis, Que.

30,038. Aug. 25.—Authorizing Canadian Northern Western Ry. until Sept. 1, 1921, to carry traffic over its Hanna-Medicine Hat Branch from Bonar, mile 256.9 from Saskatoon, to mile 47, Hanna Subdivision, Canadian National Rys., Alta.

30,039. Aug. 24.—Approving Edmonton, Dunvegan & British Columbia Ry. bylaw 14, authorizing the District Freight Agent and the District Passenger Agent to prepare and issue tariffs of tolls to be charged for carriage of freight and passenger traffic.

30,040. Aug. 26.—Authorizing G.T.R. to remove watchman from crossing of Main St., Lucan, Ont.

30,041. Aug. 24.—Authorizing G.T.R. to build extension to siding for Swift Canadian Co., Ottawa, Ont.

30,042. Aug. 27.—Authorizing Alberta Public Works Department to make highway crossing over C.P.R. in s.w. ¼ Sec. 30, Tp. 8, Range 26, west 4th meridian.

30,043. Aug. 31.—Authorizing Grand Trunk Pacific Ry. to build wharf in block E, Prince Rupert, B.C.

30,044. Aug. 26.—Authorizing C.P.R. to rebuild bridge 32.7, Chalk River Subdivision, Quebec District.

30,045. Aug. 25.—Authorizing C.P.R. to build spur for Quaker Oats Co., Saskatoon, Sask.

30,046. Aug. 31.—Ordering G.T.R. to provide protection at Garrison Road crossing, Bertie Tp., Ont.

30,047. Aug. 28.—Approving agreement between Bell Telephone Co. and Chapleau Rural Telephone Co.

30,048. Aug. 30.—Extending for 3 months time within which spurs for Cowan Co., Toronto, may be built.

30,049. Aug. 28.—Authorizing City of Fort William, Ont., to operate its electric railway cars over crossings at intersection of Victoria Ave. and Vickers St. and at Franklin St.

30,050. Aug. 30.—Ordering Canadian National Rys. to build culvert under Y about 440 ft. east of road allowance between Secs. 28 and 29, Tp. 26, Range 8, west 1st meridian.

30,051. Aug. 30.—Authorizing Canadian National Rys. to build siding for Price Bros. & Co., Metabetchouan Tp., Que.

30,052. Aug. 28.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to build bridge over Grandview Cut, at Lakewood Drive, Vancouver, B.C.

30,053. Aug. 30.—Authorizing Mount Royal Tunnel & Terminal Co. (C.N.R.) to build connections and transfer tracks with Jacques Cartier Union Ry. (G.T.R.), near Montreal.

30,054. Aug. 30.—Authorizing Canadian National Rys. to build passing siding, extension and business siding at Proulxville, Que.

30,055. Aug. 30.—Authorizing International Coke & Coal Co. to build bridge over C.P.R. at Coleman, Alta.

30,056. Aug. 28.—Authorizing Canadian National Rys. to divert and close road allowance on south boundary of Sec. 5, Tp. 28, Range 15, west 5th meridian.

30,057. Aug. 28.—Approving changes in location of sidings for Lake Simcoe Ice Supply Co., Belle Ewart, Ont.

30,058. Aug. 24.—Extending to Oct. 15 time within which Canadian National Rys. may install bell at crossing of main road to Red River, St. Jean Baptiste, Man.

30,059. Aug. 26.—Approving route map showing general location of Canadian National Rys. Prince Albert Northeasterly Branch, mile 0 to 26.094.

30,060. Sept. 1.—Approving revised location of portion of C.P.R. Bassano Easterly Branch (Empress to Milden), mile 169.85 to 172.75, and authorizing it to cross certain road allowances.

30,061. Aug. 30.—Extending to Oct. 15 time within which Canadian National Rys. may install protection at crossing of Francis St., Fort William, Ont.

30,062. Sept. 1.—Approving plan and specifications of work on Shearer drain, Elma Tp., Ont.

30,063. Sept. 3.—Approving form containing conditions governing acceptance of messages for the United Kingdom routed via Marconi.

30,064, 30,065. Aug. 30.—Extending to Oct. 15 time within which Canadian National Rys. may install wigwags and automatic bell at crossings of Brock St. and Amelia St., Fort William, Ont.

30,066. Sept. 4.—Authorizing C.P.R. to build spur for Reynolds, Moore & Bentz, Vernon, B.C.

30,067. Sept. 3.—Ordering Canadian National Rys. to build station at Morin Heights, Que.

30,068. Sept. 2.—Authorizing G.T.R. to build extension to siding for Canadian Fairbanks-Morse Co., Toronto.

30,069. Sept. 2.—Authorizing Canadian Northern Ontario Ry. to rebuild bridge over Blackwater River, Thunder Bay District, Ont., mile 21.4 from Jellicoe.

30,070. Sept. 7.—Approving location and plans of proposed Canadian National Rys. station building at Marchand, Man.; work to be completed by Nov. 15.

30,071. Sept. 7.—Amending order 21,290, Jan. 29, 1914, re G.T.R. bighway crossing near Hastings station, Ont.

30,072. Sept. 7.—Ordering Canadian National Rys. to appoint station agent at Notre Dame de Lourdes, Man., by Oct. 1.

30,073. Sept. 2.—Authorizing G.T.R. to operate over spur, serving The Randolph Macdonald Co., Toronto.

30,074. Sept. 2.—Approving route map of general location of C.P.R. Kipp Northeasterly Branch, mile 0 to 39.70.

30,075. Sept. 3.—Approving Canadian Niagara Bridge Co. route map from International Boundary opposite Grand Island, Niagara River, to connection witb Michigan Central Rd., about 3.15 miles northeast of Welland, Ont.

30,076. Sept. 4.—Approving plan and specifications of work to be done under G.T.R. on Lot 10, Con. 1, Hibbert Tp., Ont.

30,077. Sept. 4.—Authorizing G.T.R. to build spurs for Holmes Foundry Co., Point Edward, Ont.

30,078. Sept. 9.—Ratifying and confirming telegram sent by Chief Commissioner to Collector of Customs at Port Hastings, N.S., as follows: "Refuse clearance s.s. Lydia until further order," and declaring same to be of same force and effect as if expressly authorized by order of the Board.

30,079. Sept. 2.—Authorizing C.P.R. to build spur for Standard Lime Co., Ste. Elizabeth parish, Que.

30,080. Sept. 7.—Authorizing C.P.R. to build two spurs and additional siding for Canadian Packing Co., Peterborough, Ont.

30,081. Sept. 2.—Rescinding order 10,163, Apr. 13, 1910, re G.T.R. construction of spur on plan 5,912.

30,082. Sept. 2.—Authorizing C.P.R. to divert road allowance on north boundary of n.w. ¼ Sec. 16, Tp. 13, Range 19, west principal meridian, and to close within right of way diverted portion of same at mile 24, Rapid City Subdivision.

30,083. Sept. 9.—Approving location and detail plans of G.T.R. proposed station at Marysville, Ont.

30,084. Sept. 4.—Authorizing C.P.R. to rebuild bridge 46.4 over Jack Pine River, Nipigon Subdivision, Algoma District, Ont.

30,085. Sept. 8.—Authorizing C.P.R. to fill in bridge 58.42, Port McNicoll Subdivision, Trenton Division, Ont.

## Superintendents of Transportation Appointed on Canadian National Railways.

The Canadian National Railways has made a departure by creating the office of superintendent of transportation, the intention being to have one for each general superintendent's district. The duties of the superintendents of transportation are to supervise transportation on the district generally; receive from the superintendent of car service, all car service orders and transmit them to district officers concerned; distribute cars between various divisions of the district and generally supervise car supply on the district; distribute locomotives between divisions (master mechanic to select the individual locomotives of each class involved); see that freight trains and cars are properly loaded, check up overtime and delays and be responsible for the economical operation of train service generally; prepare and distribute working time tables; arrange for special passenger trains; supervise the examination of train and locomotive men in connection witih vision and hearing, also knowledge of train rules, and brakes, car heating and lighting, etc., and perform such other duties as the general superintendent may specify from time to time.

The following appointments of superintendents of transportation have been made up to date:—J. J. Sunderland, heretofore Superintendent, Montreal Division, C.N.R., Montreal, appointed at Quebec, for Quebec District.

G. A. Hoag, heretofore Superintendent, Nipissing Division, C.N.R., appointed at Toronto, for Ontario District.

T. P. White, heretofore Superintendent of Car Service, Grand Trunk Pacific Ry., Winnipeg, appointed at Winnipeg for Central District, C.N.R. and G.T.P.R.

W. A. Kirkpatrick, heretofore Trainmaster, C.N.R., Neepawa, Man., appointed at Saskatoon, Sask., for Prairie District, C.N.R. and G.T.P.R.

C. H. Brown, heretofore Assistant Superintendent, Grand Trunk Pacific Ry., Edmonton, Alta., appointed at Edmonton, for Western District, C.N.R. and G.T.P.R.

C. F. Martin, heretofore Operating Inspector, C.N.R., Winnipeg, has been appointed at Vancouver, for Grand Trunk Pacific Ry. from Edmonton to Edson, Alta., and C.N.R. and G.T.P.R. west of Edson, including Vancouver Island lines.

**C.P.R. British Information Bureau.** — The recently organized information bureau, in London, Eng., established by the C.P.R., was formally opened during August by Sir George McLaren Brown, European General Manager. The office is in charge of Major Duan Moore, and any information relative to Canada will be supplied. Attached to the office is an extensive library, containing books of reference relating to Canadian and general literature.

**Esquimalt & Nanaimo Ry. Lands.** — Judgment was given recently in the British Columbia High Court in favor of the Esquimalt & Nanaimo Ry. Co. in its suit against Wilson, McKenzie and others, respecting the title to certain coal lands within the area granted by the Crown to the company. Stay of execution, pending appeal, was granted Sept. 6, the appellants to pay into court $75,000 as security, with permission to mine 100,000 tons, such tonnage not to be exceeded without a court order.

## Telegraph, Telephone and Cable Matters.

G. D. Perry, General Manager, Great North Western Telegraph Co., Toronto, has had his jurisdiction extended over the Grand Trunk Pacific Ry. telegraph lines.

H. Hulatt, Manager of Telegraphs, G. T.R. System and G. T. Pacific Ry., and Consulting Manager of Telegraphs, G.T. R. Western Lines, was elected Chairman of the American Railroad Association's Telegraph and Telephone Division, at its annual meeting in Winnipeg, Sept. 25.

The Great North Western Telegraph Co. has opened offices at Dufort, Norway Bay, Oscalanea, and Perthuis, Que.; Agnone, Kabina, Melbourne, Moonbeam, Smoky Falls, Thedford and Willett, Ont.; east Selkirk, Man.; Ardill, Eaton and Valparaiso, Sask.; and Eckville, Legal and Norfolk, Alta.; and has closed its offices at Kamouraska and Martin River, Que.; Elmira, Forresters Falls, Osgoode Station, Ragged Rapids, Springfield and Thornbury, Ont. The names of its offices at Moffat, N.B., and Cronyn, Ont., have been changed to Tide Head and Cameron Falls, respectively.

The American Railroad Association's Telegraph and Telephone Division held its annual meetings at the Fort Garry Hotel, Winnipeg, Sept. 22 to 24, the first day's sessions being opened by the Mayor of Winnipeg and D. C. Coleman, Vice President, Western Lines, C.P.R., the second day's sessions by A. E. Warren, General Manager, Western Lines, Canadian National Rys., and Grand Trunk Pacific Ry., and W. P. Hinton, Vice President, Grand Trunk Pacific Ry. Co. and Consulting Officer to the Receiver, G.T. P.R. The principal speaker at a dinner held on Sept. 23 was Sir James Aikins, Lieutenant Governor of Manitoba, and for several years local counsel, C.P.R.

The Board of Railway Commissioners passed order 30,063, Sept. 3, approving the Marconi Wireless Telegraph Co.'s conditions governing the acceptance of messages for the United Kingdom routed via Marconi. It is provided that unless otherwise stated a message sent is to be an unrepeated one, and if a repeated one, an extra charge of quarter the rate will be made. The company and its connections are absolved from liability for mistakes or delays in transmission or delivery, and for non delivery of unrepeated messages beyond the amount of tolls collected for transmission, and also from liability for delay or none delivery of a repeated message beyond 50 times the amount collected for repeating, and for delays arising from unavoidable interruptions in the service, and from errors in cipher or obscure messages. No responsibility attaches to the company concerning any message until it is accepted at the transmission office, and if the company's messenger's are used for this purpose they act in that capacity as agents of the sender. Claims for damages or statutory penalties must be presented to the company within 60 days after the message is filed for transmission, or the company's liability ceases.

## Among the Express Companies.

The Interstate Commerce Commission, according to a Washington, D.C., press dispatch of Sept. 21, has authorized an additional increase of 13.5% in express rates, instead of 15% as applied for. The increases, which apply to class and commodity rates, except on cream and milk, make a total increase of 26% granted within the last few months.

The hearing of the Express Traffic Association of Canada's application on behalf of express companies operating in the Dominion, for 40% increase in rates, came before the Board of Railway Commissioners, Sept. 2, at Toronto, and hearings are being held at other points. The companies concerned include the Dominion, Canadian, National Central Canada, British American, and the American Railway Express Cos. The application states that the companies are operating on less than 61½% of what the Board declared to be a fair and reasonable tariff in 1913, and that with an increase of over 100% in operating costs, the companies have been granted an increase of less than 23%. The Dominion Ex. Co. states it had a deficit on operation of $2,817,-209.99 from July 1, 1913, to Mar. 31, 1920, the years 1916 and 1917 being the only two years which showed a profit, and 1919 being the worst year in the company's history, the deficit being $2,-086,657.83. The Canadian Ex. Co. states that during 1919, to Aug. 31, its expenses, including taxes, were $3,933,270, its revenue for the same period being $3,859,270, and to have operated at a loss since 1917, the deficits being: 1917, $38,-650; 1918, $96,026; 1919, to Aug. 31, $73,-809; Sept. 1, 1919, to May 31, 1920, $119,-972.

### Canadian National Express Company.

A regular express office has been opened at Deepdale, Man., and offices have been opened at Bears Pass, Ont., and Ardill, Sask., and the office at Ragged Rapids, Ont., has been closed.

The office at Forresters Falls, Ont., has been reopened and the offices at Georgetown and Acton, Ont., have been discontinued, the company's service having been withdrawn entirely.

### Dominion Express Company.

D. Chenevert, for 16 years agent at Three Rivers, Que., has resigned.

T. C. Matchett, agent at Lindsay, Ont., died there Sept. 24, aged 64, following a paralytic stroke.

A. Roussell has been appointed agent at Riviere-du-Loup, Que., vice J. E. Gagnon, transferred.

The Brotherhood of Dominion Express Employes, Toronto, had a moonlight excursion recently, with dancing and music.

J. Stark has been appointed agent at Fernie, B.C., vice J. P. Lowe, who has been appointed agent at Cranbrook, B.C.

Penticton and Sicamous Jct., B.C., have been made exclusive officers, with W. E. Davis and W. F. Stewart as agents respectively.

N. J. Bower, heretofore cashier, London, Ont., has been transferred to Windsor, Ont., vice F. Roods, transferred to London, Ont.

J. E. Gagnon, heretofore agent at Riviere-du-Loup, Que., has been appointed agent at Three Rivers, Que., vice D. Chenevert, resigned.

The Dominion Ex. Co. reports that the fruit traffic from Ontario to the Maritime provinces has been heavier this year than during the past 8 or 10 years.

**The Netherlands Government** is reported to have contracted with the Krupps at Essen, Germany, for 37 lomocotives for railways in Java.

**The Railway Y. M. C. A.'s** of North American will hold an international conference at Richmond, Virginia, Nov. 18 to 21.

## Grain in Store at Elevators.

Grain in store at public terminal elevators, interior terminal elevators, country elevators in Western Division, and public elevators in east, also at U.S. Atlantic seaboard ports. Prepared by the Dominion Bureau of Statistics, Internal Trade Division.

| Week ended Sept. 10, 1920: | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William | | | | | | |
| C.P.R. | 69,720 | 15,781 | 36,254 | ..... | 12,662 | 134,417 |
| Consolidated Elevator Co. | 33,796 | 9,593 | 9,051 | 96,792 | 772 | 150,000 |
| Ogilvie Flour Mills Co. | 115,685 | 1,720 | 32,330 | ..... | 2,517 | 152,252 |
| Western Terminal Elevator Co. | 28,376 | 8,639 | 5,727 | 21,476 | ..... | 64,218 |
| G. T. Pacific | 32,003 | 21,649 | 10,788 | 32,698 | 1,636 | 98,774 |
| Grain Growers' Grain Co. | 266,401 | 1,730 | 34,250 | ..... | 5,676 | 308,057 |
| Fort William Elevator Co. | 8,990 | 6,385 | 20,851 | 13,926 | 2,727 | 52,789 |
| Northwestern Elevator Co. | 180,028 | 8,711 | 40,139 | 44 | 1,134 | 230,056 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 75,094 | 1,580 | 26,068 | 1,255 | 4,769 | 108,766 |
| Sask. Co-op. Elevator Co. | 2,776 | 1,486 | 1,110 | 102,717 | 487 | 108,576 |
| Canadian Government Elevator | 313,372 | 44,179 | 10,530 | 92,763 | 1,554 | 462,398 |
| Davidson and Smith | 6,653 | 2,848 | 1,066 | ..... | 423 | 10,990 |
| Eastern-Richardson | 4,012 | *3,478 | *7,484 | 8,879 | *135 | *6,230 |
| Total Public Terminal Elevators | 1,128,878 | 120,823 | 220,680 | 370,550 | 34,222 | 1,875,154 |
| Total Private Terminal Elevators | 323,231 | 51,609 | 66,178 | 23,738 | 7,225 | 471,981 |
| Saskatoon: Can. Gov't Elevator | 1,517 | *3,723 | ..... | 1,813 | ..... | *393 |
| Moose Jaw: Can. Gov't Elevator | 138,278 | 12,217 | 901 | 3,464 | 8,988 | 163,848 |
| Calgary: Can. Gov't Eleveator | 2,871 | 21,464 | 4,865 | ..... | 251 | 29,451 |
| Vancouver, B.C.: Can. Gov't Elevator | 20,962 | 594 | ..... | ..... | ..... | 21,556 |
| *Total Interior Terminal Elevators | 163,628 | 30,552 | 5,766 | 5,277 | 9,239 | 214,462 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 2,100 | ..... | ..... | ..... | ..... | 2,100 |
| Tiffin, G.T.P. | 10,00 | ..... | ..... | ..... | ..... | 10,000 |
| Port McNicoll | 1,672,637 | 200 | ..... | ..... | ..... | 1,672,837 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 56,520 | 6,602 | 1,294 | ..... | ..... | 64,416 |
| West Can. Flour Mills Co., Ltd. | 10,180 | ..... | ..... | ..... | ..... | 10,180 |
| Toronto: Campbell Flour Mills Co. | 1,696 | ..... | ..... | ..... | ..... | 1,696 |
| Port Colborne— | | | | | | |
| Dom. Gov't Elevator | 112,482 | ..... | ..... | ..... | ..... | 112,482 |
| *Maple Leaf Milling Co., Ltd. | 59,963 | ..... | ..... | ..... | ..... | 59,963 |
| Harbor Commissioners No. 1 and 2 | 2,273,733 | 240,072 | 278,803 | 21,629 | 6,182 | 2,820,419 |
| Quebec Harbor Commissioners | ..... | 21,343 | ..... | ..... | ..... | 21,343 |
| Total Public Elevators | 4,199,311 | 268,217 | 280,097 | 21,629 | 6,182 | 4,775,436 |
| *Total Country Elevators | | | | | | |
| Total U.S. Atlantic Seaboard Ports | | | | | | |
| Baltimore, Md. | ..... | ..... | ..... | ..... | 13,556 | 13,556 |
| U.S. Atlantic Seaboard Ports— | ..... | ..... | ..... | ..... | 13,556 | 13,556 |
| Total Quantity in Store | 5,815,048 | 471,201 | 572,721 | 421,194 | 70,424 | 7,350,588 |

*Overshipped.

# Electric Railway Department

## Increases in Electric Railway Passenger Fares.

**Cape Breton Electric Co.**, as stated in Canadian Railway and Marine World for Sept., pg. 502, has put in operation, under an order of the Nova Scotia Public Utilities Commission, a new and increased schedule of fares on its electric railways in Sydney, North Sydney and Sydney Mines, and on its suburban line to Glace Bay. The company made its application to the Commission on Mar. 22 for power to charge increased fares, and the Commissioner's order was made Aug. 6, the new fares becoming operative Aug. 15.

On Mar. 15, 1919, a straight 6c. fare was fixed, the company using a metal ticket 0.780 of an inch in diameter. The new fare schedule is a 10c. cash fare in the City of Sydney, and the Towns of North Sydney, Sydney Mines and Glace Bay, and on each zone of the interurban line from Sydney to Glace Bay. Tickets are sold 2 for 15c., and in even multiples of 2 at the same rate, each ticket being accepted in lieu of a single 10c. cash fare. On the Friday previous to Aug. 15 the company announced that it would continue ot use the old tickets, selling them at the 6c. rate as long as they lasted. We are advised that although the company never had more than about 7,500 outstanding up to that time, over 20,000 were sold within a few hours, and as not more than 10 tickets were sold to any one person, they were widely distributed.

The Public Utilities Commission's order directs the sale of tickets at the rate of 10 for 40c., to children under 16 years of age, upon production of a certificate from the school principal that they are bona fide pupils, such tickets being available only between 8 a.m. and 5 p.m. on regular public school days.

**Fort William Municipal Ry.**—On Sept. 1, under the Ontario Railway and Municipal Board's authority, the cash fare on the municipally owned electric railways in Fort William and Port Arthur were increased to 7c., four tickets being sold for 25c. Fares on the interurban line connecting the two cities is reported to have been increased in accordance with the new rate in the cities.

**London St. Ry.**—In connection with the increased fare and increased wages matters which have been fruitful of much agitation for months past, the Mayor of London, Ont., is reported to have stated recently that no bylaw increasing fares on the railways will be passed by the council this year for ratification by the ratepayers.

**Port Arthur Civic Ry.**—See Fort William Municipal Ry.

**Saskatoon Municipal Ry.**—A press report states that the Saskatoon, Sask., City Council passed a resolution, Sept. 13, authorizing the charging of a 10c. fare, with 4 tickets for 25c., on the municipal railway, the new fares to go into effect Oct. 1, and that 8 tickets for 25c. will continue to be sold to school children.

**Winnipeg Electric Ry.**—As stated in Canadian Railway and Marine World for Sept., pg. 502, the Manitoba Public Utilities Commission gave judgment Aug. 23 on the Winnipeg Electric Ry., the Winnipeg, Selkirk & Lake Winnipeg Electric Ry., and the Suburban Rapid Tranit Co.'s application for power to charge increased fares. The judgment is a very lengthy one, reviewing the whole circumstances of the investigation since the filing of the application by the Winnipeg Electric Ry. in Oct., 1918, which was followed by that of the W., S. & L. W. E. Ry. Co. in Dec., 1918, and by the S. R. T. Co. in Sept., 1919. Following the presentation of the W. E. Ry. Co.'s application a temporary increase of rates was granted, the old and the new temporary rates being as follows:—

| | Old. | Temporary. |
|---|---|---|
| Cash fare | 5c. | 5c. |
| Tickets | 6 for 25c. | Abolished. |
| Workmen's tickets, limited | 8 for 25c. | 6 for 25c. |
| School children's tickets, limited | 10 for 25c. | 7 for 25c. |

A temporary increase of fares was granted to the Suburban Rapid Transit Co. in Oct., 1919, the single cash fare being increased to 6c., with 5 tickets for 30c., and 9 for 50c., good at all hours; workmen's limited tickets, 5 for 25c., and school children's limited tickets, for for 25c.

In reference to the City of Winnipeg's questioning of his jurisdiction, the Commissioner, after discussing the matter in its various aspects, said: "This Commission feels fully jutified in continuing its course of altering rates, even though fixed by contract, where the public interest requires it."

The Commissioner had a valuation made of the company's property to ascertain a sum which would be equitable, as between the shareholders and the patrons of the railway, to consider as the amount of capital investment in the enterprise. These valuations as given in the judgment were:—

| | |
|---|---|
| W. E. Ry. Co. | $9,199,307.40 |
| W. S. & L. W. E. Ry. Co. | 1,095,870.47 |
| S. R. Transit Co. | 388,350.83 |

Upon the question of the rate of return, the judgment said:—"The rate of return is not a difficult one to settle. To ensure continuance of a satisfactory service the rate must be such as will be attractive to investors, for the business is one that constantly requires additional capital. In my judgment, 8% is the proper rate to fix." The increased fares granted on the W. E. Ry. are estimated to produce sufficient to pay operating expenses, an 8% return on the above mentioned valuation, and leave a surplus of $71,868, which the Commissioner says is "a reasonable sum in the circumstances."

As to the Winnipeg, Selkirk & Lake Winnipeg Electric Ry., the judgment said: Operating costs are estimated at $145,-320.00. A return of 6% on a capital of $1,095,870.47 amounts to $65,760.20. Total, $211,080.00. The estimate of returns from increased fares is based only on the percentage of increase of the total receipts, and amounts to $211,184. The rate of return on this section of line will be not over 6%.

In the case of the Suburban Rapid Transit Co., the judgment said:—Operating costs are estimated at $131,608. A return of 7.7% on a capital of $388,-350.83 amounts to $29,902. Total, $161,-510. The estimate of receipts from the increased fares is $161,950. Yielding a return of less than 8%, with no margin for surplus.

The Commissioner fixed the fares on the Winnipeg Electric Ry. as follows:—Cash fare, 7c.; tickets, 4 for 25c.; children's tickets, 7 for 25c. These fares are within the present city limits, and to the following places outside the city limits: To Deer Lodge, and to the loop past the entrance to Assiniboine Park; to Tempeton Ave., West Kildonan; to John Black Church, East Kildonan; to Berrydale Ave., St. Vital; to the end of the present line, known as the Morse Park extension. The East Kildonan line is divided into 2 zones, and the St. Norbert line into 4 zones, the cash fare of each zone being 5c., tickets good for one fare, 25 for 7c., and for children under 16 years, for the purpose of attending school on school days only, half the regular cash fare. In the company's advertsiements announcing the change of fare, school children's tickets are quoted 10 for 25c.

On the Suburban Rapid Transit Co.'s line the cash fare is 5c. a zone; tickets good for one zone, 6 for 25c., or 25 for $1; school children, half cash fare. The company in this case also offers to issue tickets at 10 for 25c. The Headingly line is divided into 5 zones, and the Charleswood line into 2 zones.

On the Winnipeg, Selkirk & Lake Winnipeg Ry. the fare from Winnipeg to Selkirk and Winnipeg to Stonewall is raised from 50c. single and 80c. return to 75c. single and 90c. return. The company is authorized to sell accommodation tickets, in books of 20, at the rate of 10 tickets the single fare, with a maximum of $6; to issue students' tickets to students under 18 attending school, in books of 30 tickets at the same price as the regular commutation fare; children between 5 and 12 to be carried at one-half of the regular fare.

The new rates went into effect Sept. 1, the company redeeming all outstanding tickets issued under the old rates.

### Canadian Electric Railway Association.

**Honorary President**, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.

**Honorary Vice President**, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.

**President**, A. Gaboury, Superintendent, Montreal Tramways Co.

**Vice President**, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

**Honorary Secretary-Treasurer**, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

**Executive Committee**, The President, Vice President, and F. D. Burpee, Manager, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

**Official Organ**—Canadian Railway and Marine World, Toronto.

The acting City Solicitor, in a lengthy communication to the Winnipeg City Council, upon the order, criticized it in detail, and suggested points upon which it might be advisable to appeal. The council authorized an appeal, and a press report of Sept. 18 stated that an attempt would likely be made to have all the matters between the city and the municipalities and the company settled by special legislation at the Manitoba Legislature's next session.

Chief Justice Perdue, on Sept. 21, granted the Winnipeg City Council, and the councils of other interested municipalities, leave to appeal against the Public Utilities Commission's judgment. The appeal will, it is said, be confined entirely to the question as to whether or not the Commissioner had jurisdiction to make the order granting the increase. The question as to whether the Public Utilities Act is constitutional or not cannot be brought up.

## Improvements in Winnipeg Electric Railway Co.'s Properties.

The Manitoba Public Utilities Commission's decision authorizing the Winnipeg Electric Ry. Co. and its subsidiary companies to increase their passenger fares, which is dealt with fully on another page of this issue, is another success for the vigorous and persistent effort to put the company on its feet which has been made by A. W. McLimont, now Vice President, since he took charge of the property as General Manager in Oct., 1917. The success achieved can best be gauged by contrasting conditions now with what obtained in 1917, when jitneys were on the streets, making inroads into the company's revenues to the extent of $1,000,000 a year and street car fares were the same as provided in the original franchise, average 3.85c. a revenue passenger. Public opinion towards the company was not of the friendliest, and labor troubles were a continuous threat. In the winter of 1917-1918 Mr. McLimont conducted a campaign against the jitneys, which resulted in their complete elimination from the streets in April, 1918. Incidentally he accomplished reforms in the matter of service, such as the inauguration of the skip-stop system, re-routing, and other improvements, which resulted in the revenue per car mile being increased very appreciably.

Four months after the elimination of the jitneys the company applied for increased fares. An interim increase was granted. The Public Utilities Commission decided to make an appraisal of the company's property in order to fix a fare "which will produce revenue sufficient to cover operating costs and ensure a fair return being paid those whose money is in the property." In Oct., 1919, while the appraisal was still being made, the company was granted an increase to 6c. cash fares and also an increase in the rate for tickets. Now comes the 7c. fare, with the elimination of all but two classes of tickets and the assurance from the Commissioner that these fares will be sufficient to permit adequate service being given, keep the road in first class condition and provide a return of 8%.

Starting in the spring of 1918, Mr. McLimont embarked on a programme to rehabilitate the rolling stock. Much progress has been made in this regard, the cars being equipped with new motors, front and rear exits, and other improvements which make for more economical operation. Forty new cars have been bought, 30 of which are in operation. Approximately $1,000,000 has been applied to this rehabilitation programme during the past three years.

The Winnipeg Electric Ry. Co. also operates the gas utility in Winnipeg, and two increases in the price of gas have been granted since Mr. McLimont took charge, the last increase of 25c. a 1,000 cu. ft. having been authorized Aug. 23.

## Operation of One-Man Cars in St. Thomas.

The Board of Railway Commissioners passed order 29,876, July 13, authorizing the City of St. Thomas, Ont., to operate p.a.y.e. one-man cars of its street railway over the London & Port Stanley Ry. on Elm St., for three months from date of order, the city, at its own expense, to erect a semaphore in the angle of the crossing, with a single arm and light, arranged so that it will stand normally clear for the London & Port Stanley Ry. and against the St. Thomas St. Ry.; and that, before street cars proceed over the crossing, the car operator shall stop his car 30 ft. clear of the nearest rail of the London & Port Stanley Ry. and go forward and set the signal against that line, then take his car across, stop it again the same distance (30 ft.) clear, and restore the signal to its normal position before leaving.

The Board also passed an order on the same day authorizing the city to operate similar cars over the Pere Marquette Ry. on Wilson Ave., provided that in addition to the watchman employed at the crossing by the Pere Marquette Ry., the city, at its own expense, provide a watchman between 6 and 12 p.m., or until such time as it ceases operating its cars.

## Quebec Railway, Light, Heat & Power Co.'s Annual Report, Etc.

The following report for the year ended June 30 was presented at the annual meeting in Montreal recently:—The gross earnings from operation for the year were $2,372,034.69, an increase of $294,413.26. The operating and maintenance expenses were $1,769,563.41, an increase of $325,047.33, leaving the net earnings from operation $602,471.28, a decrease of $30,634.07. After adding miscellaneous income and deducting fixed charges, taxes and depreciation for equipment placed out of service, there remains a deficit of $44,703.75. The balance at credit of surplus account on June 30, 1919, was $682,464.29, and after charging the deficit above mentioned, together with $55,$55.70 in connection with recent Privy Council judgment, there remained a balance at credit of surplus account at June 30, 1920, of $582,704.84.

During the year 9 new p.a.y.e. double truck latest type cars were added to the rolling stock of the city street railway department, the operation of which have given great satisfaction to the travelling public. One more car of the same type was placed in service during this year, completing order placed for 10 cars.

The Lotbiniere & Megantic Ry., operating between Lyster, Megantic County, and St. Jean Deschaillons, Lotbiniere County, and which connects with the G. T.R. at Lyster and Canadian National Rys. at Villeroy, was acquired by the Dominion Government, and its operation was taken over by Canadian National Rys., effective April 1, 1920.

Extensive alterations and improvements of the intake and the installation of new steel head gates at the main dam on the Montmorency River, were carried out during the year, the results of which, when completed, will prove most satisfactory in the operations of the power division. There was expended during he year on capital account $266,818.38, which included the extension of the city street railway on Beauport Road to the city limits, also 9 new double truck cars above referred to.

The President is reported to have stated at the meeting that negotiations were in progress for the disposal of the Quebec and Montmorency line. In addition to an electric car passenger service over this line, the company operates a freight service with steam locomotives.

The directors and officers were re-elected as follows:—Hon. Lorne C. Webster, President; Hon. D. O. L'Esperance, Vice President; C. A. Lavigne, T. J. Stewart, M.P., P. Galibert, L. J. Tarte, J. N. Greenshields, K.C., C. G. Greenshields, K.C., A. Picard, Hon. Jules Tessier and Brig.-Gen. A. E. Labelle. W. J. Lynch was reappointed General Manager, and Arthur LaMoine, Secretary.

## Electric Railway Employes' Wages, Working Conditions, Etc.

Hull Electric Co.—Under the agreement between the company and its employes, which expired July 1, motormen and conductors were paid from 34c. to 41c. an hour, according to length of service. The new agreement asked for by the men provided for an all round rate of 65c. an hour. Failing a settlement, the men asked for a board of conciliation, which was authorized, the board consisting of G. D. Kelley, Ottawa, representing the company; Jos. Gibbons, Toronto, representing the men, and W. P. Grant as chairman. The board opened its sittings at Hull, Que., Aug. 3. G. Gordon Gale, Vice President and General Manager, appeared for the company. A majority report was signed by W. P. Grant and G. D. Kelley Aug. 26, recommending the following wages per hour for passenger motormen and conductors:

| | |
|---|---|
| First six months | 41c. |
| Second six months | 44c. |
| Second year | 46c. |
| Third year and thereafter | 48c. |

Listed spare men reporting for duty three times each day to be paid a minimum of $30 a half month, but if they work in excess of the hours to cover this amount they to be paid at the schedule rate per hour.

Freight crews, 10 hour day, per hour:

| | |
|---|---|
| Conductors | 52c. |
| Motormen | 52c. |
| Brakemen | 45c. |
| Trolley men | 41c. |

The report recommended that these rates be paid from July 1, and that they continue in force for a year from that date. A minority report was presented by Jos. Gibbons, recommending the following wages per hour:

Passenger car men:

| | |
|---|---|
| First six months | 45c. |
| Second six months | 48c. |
| Second year men | 50c. |
| Third year men | 52c. |

Freight crew:

| | |
|---|---|
| Motormen and conductors | 56½c. |
| Brakemen | 47c. |
| Trolley men | 45c. |

The majority report recommended increases to other employes, but not to the same extent as did the minority report. The percentage of increases granted in the majority report varied from 17% to 26%. The majority report was accepted by the company and its employes after some discussion, and a new agreement for the year July 1, 1920, to June 30, 1921, was made accordingly.

# The United States Commission's Report on the Electric Railway Industry.

On May 15, 1919, the United States Secretary of Commerce and the Secretary of Labor recommended to the President of the U.S., that, in view of the serious financial position of electric railways throughout the country, a commission to study and report on the entire problem. On May 31, 1919, the President appointed a commission, composed as follows:— C. E. Elmquist, President and General Solicitor, National Association of Railway and Utilities Commissioners; E. F. Sweet, Assistant Secretary of Commerce, representing the Department of Commerce; P. H. Gadsden, representing American Electric Railway Association; R. Meeker, Commissioner of Labor Statistics, Labor Department, representing that Department; L. B. Wehle, General Counsel, War Finance Corporation, representing the Treasury Department; C. W. Beall, of Harris, Forbes, & Co., bankers, New York, representing Investment Bankers' Association of America; W. D. Mahon, President, Amalgamated Association of Street and Electric Railway Employees of America, representing that association; L. Baker, Mayor of Portland, Oregon, representing American Cities League of Mayors. The commission has recently presented an exhaustive report, including the following recommendations:—

The electric railway furnishing transportation upon rails is an essential public utility, and should have the sympathetic understanding and co-operation of the public if it is to continue to perform a useful public service.

The electric railway has been, and will continue to be, a public utility, subject to public control as to the extent and character of the service it renders, and as to the rates it charges for such service.

It is of the highest importance that both the total cost of the service and the cost to the individuals who use it shall be kept as low as possible without injustice to those who take part in producing it.

The electric railway industry as it now exists is without financial credit and is not properly performing its public function.

This condition is the result of early financial mismanagement and economic causes, accentuated by existing high price levels of labor and materials, and of the failure of the uniform unit fare of five cents, prescribed either by statute or by local franchise ordinances or contracts to provide the necessary revenues to pay operating costs and to maintain the property upon a reasonable basis.

The industry can be restored to a normal basis only by the introduction of economies in operation, improving its tracks, equipment and service, and securing a reasonable return upon the fair value of its property used in the public service when honestly and efficiently managed.

The electric railways must expand to meet the growing needs of their communities; therefore, the first essential is to restore credit in order to obtain necessary new capital for the extension and improvement of service.

Restoration of credit involves a readjustment of relations which will remove public antagonism, provide public co-operation, and ensure to the investor the integrity of his investment and a fair rate of return thereon.

Effective public co-operation should be exercised by eliminating, in so far as it is practicable, special assessments for sprinkling, paving, and for the construction and maintenance of bridges which are used by the public for highway purposes.

Extensions into new territory resulting in special benefits to the property in that vicinity should be paid for by assessments on such property in proportion to the benefits received, and that the amount of such assessments should not be added to the physical value of the corporate property.

The great increase in the use of private automobiles, the jitney and motor buses, has introduced a serious, although not a fatal, competition to the electric railway. These forms of public motor conveyance when operated as public carriers should properly be subject to equivalent regulatory provisions.

The full co-operation of labor is essential to the highest prosperity and the usefulness of the industry. The employes engaged in this occupation should have a living wage and humane hours of labor and working conditions. They should have the right to deal collectively with their employers, through committees or representatives of their own selection. All labor disputes should be settled voluntarily or by arbitration, and the award of such a board should be final and binding upon both parties. It is intolerable that the transportation service of a city should be subject to occasional paralysis, whether by strikes or by lockouts.

A private industry should not be subsidized by public funds, unless it is imperatively necessary for the preservation of an essential service, and then only as an emergency measure.

Unless the usefulness of the electric railways is to be sacrificed, public control must be flexible enough to enable them to secure sufficient revenue to pay the entire cost of the service rndered, including the necessary cost of both capital and labor.

There can be no satisfactory solution of the electric railway problem which does not include the fair valuation of the property employed in the public service, and, where that is done, the companies should voluntarily reduce any excessive capitalization to the basis of such value.

There is no insuperable objection to a large, wide-awake city having exclusive jurisdiction over the rates and services of public utilities.

The necessity for scientific and successful regulation of systems, whether large or small, and especially those which operate through several cities and villages and in rural territory, leads to the conclusion that local regulation should generally be subject to the superior authority of the state, whether as a matter of original jurisdiction or through the medium of appeal.

Cost of service contracts are in the experimental stage, but, where tried, they seem to have secured a fair return upon capital, established credit, and effected reasonably satisfactory public service. Such contracts may safely be entered into where the public right eventually to acquire the property is safeguarded.

The right of the public to own and operate public utilities should be recognized, and legal obstacles in the way of its exercise should be removed.

While eventually it might become expedient for the public to own and operate electric railways, there is nothing in the experience thus far obtained in this country which will justify the assertion that it will result in better or cheaper service than privately operated utilities could afford if properly regulated.

Public ownership and operation of local transportation systems, whether or not it be considered ultimately desirable, is now, because of constitutional and statutory prohibitions, financial and legal obstacles, the present degree of responsibility of our local governments, and the state of public opinion, practicable in so and operation must as a general rule be few instances, that private ownership continued for an extended period.

If the reforms incident to public regulation which we suggest in this report should not result in making private ownership satisfactory to the public, such reforms should at least enable public ownership to be established upon a just and equitable basis.

## Electric Railway Notes.

Calgary, Alta., City Council has been considering plans for rerouting some of the cars on the municipal railway, and otherwise improving the service before winter sets in.

The British Columbia Electric Ry. pays municipal taxes on its properties on Vancouver Island in four municipalities, the total for 1920 being $19,899.48, as against $18,804.18 in 1919 and $16,285.41 in 1918.

The Toronto Suburban Ry., and the Toronto & York Radial Ry., which have been running on summer time since daylight saving went into operation in the early summer, resumed running on standard time Sept. 13.

The Saskatoon, Sask., City Council is reported to have authorized the submission to the ratepayers at the municipal elections in December of a bylaw to provide for the operation of one-man cars on the municipal railway.

The Winnipeg Electric Ry. Co.'s employes, who voted recently to join with the One Big Union, have formed a street railwaymen's unit of the same, and are reported to have elected Alderman H. Jones, President, and R. D. Clarke, Vice President.

An agitation has been started in Regina, Sask., to have another vote taken at the municipal elections in December, on the question of operating one-man car on the Regina Municipal Ry. The ratepayers voted quite recently against the operation of such cars by 428 to 321.

Ottawa City Council had under discussion on Sept. 20 a motion for the securing of legislation to permit the council to withdraw from its agreement to buy the Ottawa Electric Ry. should the valuation price be too great. The motion was sent on to the Board of Control for consideration.

Montreal Tramway Co.'s employes, as a body, have heretofore been affiliated with the international union—the Amalgamated Association of Street and Electris Railway Employes. A number of the employes are reported to have withdrawn from this organization and to have formed the National Catholic Union, with a view to affiliate with the National Catholic Unions of Montreal.

# United States Electric Railway Mail Pay.

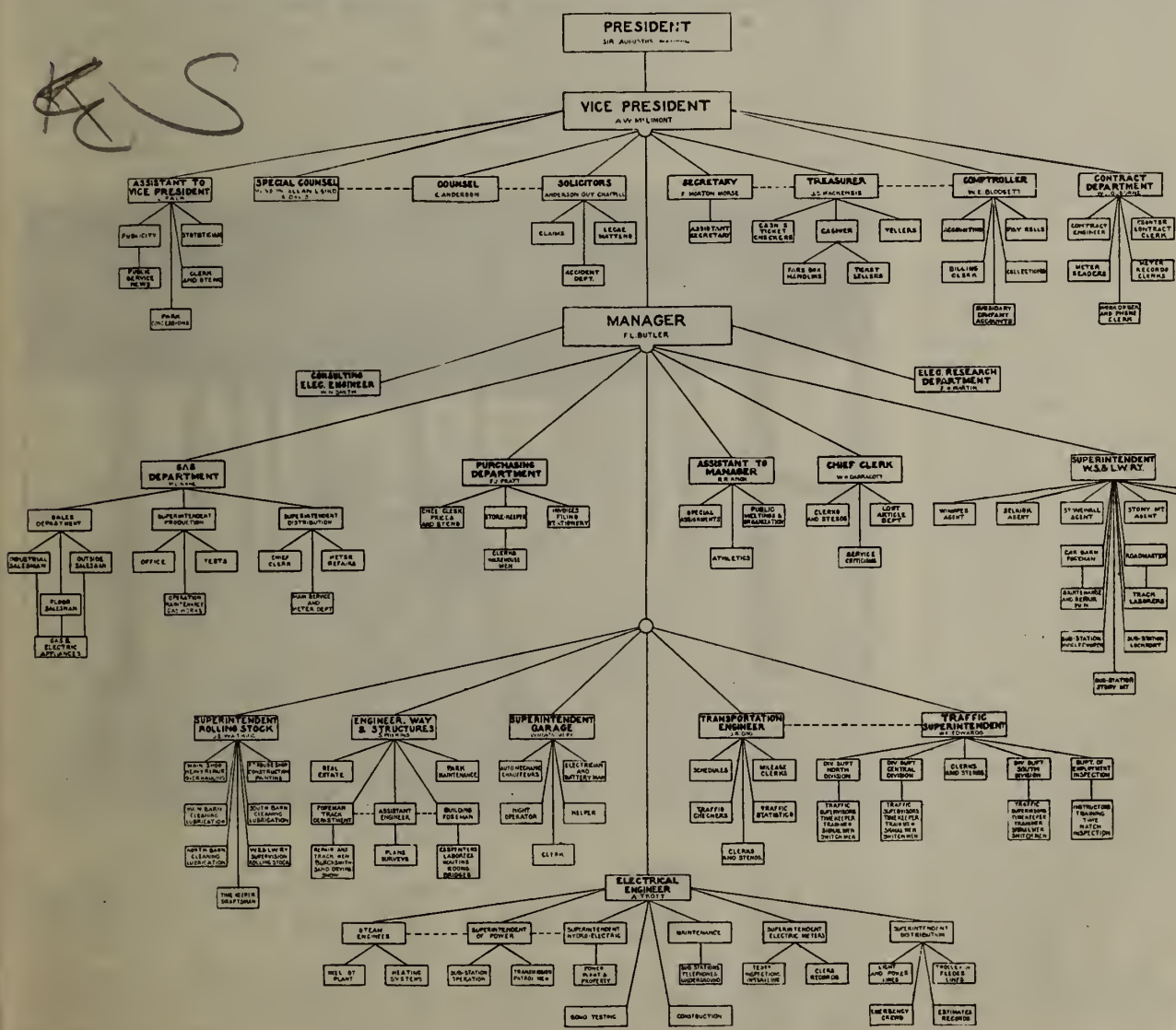
An act of the U.S. Congress, approved July 2, 1918, 40 Stat., 742, 748, contains the following provision: "That the Interstate Commerce Commission is hereby empowered and directed as soon as practicacle to fix and determine from time to time the fair and reasonable rates and compensation for the transportation of mail mater by urban and interurban electric railway common carriers and the service connected therewith, prescribing the method or methods by weight or space, or both, or otherwise, for ascertaining such rate or compensation and to publish the same, and orders so made and published shall continue in force until changed by the Commission after due notice and hearing; and provided further, that it shall be unlawful for any urban or interurban electric railroad to refuse to perform mail service at the rates or methods of compensation thus provided for such service when required by the Postmaster General so to do, and for such offence shall be fined $100. Each day of refusal shall constitute a separate offence."

The Interstate Commerce Commission proceeded to carry out the directions given in the act. The electrically operated railways of the country were served with notice, and hearings were had at Washington, D.C., and at 16 important electric railway centers in different parts of the country. Evidence was submitted in behalf of the railways and the Post Office Department. Briefs were submitted and the case orally argued. The case was decided by the Commission on Aug. 17, the report being prepared by Commissioner McChord and the following order was passed the same day:—This case having been initiated under the provisions of the act of July 2, 1918, Stat. 742, 748; and having been duly heard and submitted by the parties, and full investigation of the matters and things involved having been had, and the Commission having, on the date hereof, made and filed a report containing iits findings of fact and conclusions thereon, which said report is hereby referred to and made a part hereof, it is ordered that the following system, rules, and ratings be established on or before Dec. 6, 1920, and be observed, maintained, and applied to the transportation of mail matter of the United States by all urban and interurban electric railway common carriers subject to the act of July 2, 1918, supra, until further order or orders of this Commission:

1. That the fair and reasonable rate for transportation of closed-pouch mail on a car constructed and run primarily for passenger service, with no separate compartment for mail, baggage, and express, is 4c. a mile of authorized car run for 10, or less than 10, pounches, sacks, and parcels. Where more than 10 pounches, sacks, and parcels are regularly tendered for transportation on one such passenger car, at any point on a mail route, the Postmaster General shall authorize not less than 60 cu. ft. of space and the fair and reasonable rate therefor is 5c. a mile of authorized car run; and for each additional 30 cu. ft. or fraction thereof, 1c. a mile of authorized car run, over said mail route; the authorization to be determined by actual measurement where practicable, or by count of pouches, sacks, and parcels as provided in paragraph 7.

2. That the fair and reasonable rate for closed-pouch mail service in baggage or express cars or in baggage and express compartments in passenger cars, is 3c. a mile of authorized car run for 30 cu. ft. of space or less, and 1c. a mile of authorized car run for each additional 30 cu. ft. or fraction thereof of space authorized; the authorization to be determined by actual measurement where practicable, or by count of pouches, sacks and parcels as provided in paragraph 7.

3. That the fair and reasonable rate for independent cars devoted to the transportation of the mails, on which railroad




Winnipeg Electric Railway Co., Operating Organization.

employes handle the mails, is 1½c. a linear foot per mile of authorized travel in cars 20 ft. or less in length, inside measurement; and in cars more than 20 ft. in length, inside measurement, 1½c. a lin. foot per mile of authorized travel for the first 20 ft. and ¾c. a lin. foot or fraction thereof per mile of authorized travel for each additional foot or fraction thereof.

4. That the fair and reasonable rate for railway postoffice cars and railway

One-Man Car, of which 25 have been put in operation on Toronto Civic Ry. recently.

postoffice apartments in cars, in which postal employes handle the mails, is 1¼c. a lin. ft. per mile of authorized travel in cars or apartments in cars 20 ft. or less in length, inside measurement, and in cars or apartments in cars more than 20 ft. in length, inside measurement, 1¼c. a lin. ft. per mile of authorized travel for the first 20 ft. and ¾c. a lin. ft. per mile of authorized travel for each additional linear foot or fraction thereof.

5. That the minimum rate of payment on any electric railway mail route shall be $175 a year.

6. Where the railroad companies are required by the Department to perform side, terminal, or transfer service they shall be separately compensated for such service, unless the service is performed directly contiguous to railway terminals and depots. The amount to be paid therefor shall be measured by the amount paid by the railway to contractors, plus 3%; and where the service is performed by agents or employes of the railway companies the payment shall be for the value of the pro rata time of such agents or employes while engaged in rendering the service, including cost of vehicular service that may be necessary, with the addition of 3%. Where the railway companies contract for such service contracts shall be let to the lowest bidder upon advertisement. Readjustments for such service shall be made annually. The railway companies shall submit certified copies of each contract to the Postmaster General on or before July 1of each year, showing the rate of payment for the ensuing year, and the amounts specified in such contracts plus 3% shall be accepted as the basis of payment by the Postmaster General heretofore prescribed. The railway companies shall also furnish the Postmaster General each year, on or before July 1, a detailed statement of the daily time consumed in handling the mails by their agents or employes at each point where side, terminal, or transfer service is performed, which statement shall be verified by a responsible official of the company conversant with the facts; and such verified statement shall compute the pro rata payment of the agent or employe performing the service, based on the time actually consumed, and the named in the statement plus 3% shall constitute the basis of payment for the next ensuing year, unless in special cases, and for good cause, the Postmaster General may require further statements and verifications from any particular railway company at other periods of the year.

7. That from time to time, as often as he may deem it necessary, and at least once in two years, the Postmaster General, upon notification to the railway, and with their presence and assistance, shall conduct tests to determine the number of pouches, sacks, and outside packages that will fill 30 cu. ft. of space in a car or compartment of a car, and the results thereof shall be reflected in changes in rules, when necessary, in the count of pouches, sacks, and packages as the basis of measurement.

One-Man Car, Toronto Civic Ry.

8. That the provisions of the existing postal regulations, with respect to carriage of mails by electric railways, except as herein modified, shall remain in force and effect.

9. That payments for transportation of mails by electric railways and the service connected therewith shall be made each month after the service has been performed.

## Answers to Questions on Electric Railway Topics.

Answers to questions submitted to the American Electric Railway Association's question box have been given by Canadian electric railway officials as follows:

**Motor bearings.**—In connection with the rebabbitting of motor bearings, have any roads had experience with the use of the cheaper lead-base alloys?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.—Many careful experiments on this system have shown definitely that the use of the cheaper lead-base alloys is not economical.

**Swinging Motor Leads.**—What methods are being used to protect the swinging motor leads from being broken or insulation being worn and grounding?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., Montreal.—A very simple method to protect swinging motor leads is to fasten split wooden blocks to the floor of car close to the bolster and to the motor case above axle. These split blocks have four holes slightly smaller than the lead wires at the parting line. The axes of holes in both bocks are in vertical position and wires are constrained to hang in definitely spaced positions out of contact with any grounded metal. This method is very satisfactory.

**Special Track Work.** — Is there any objection to opposite joints in curved portions of special track work layouts through which cars are operated at comparatively low speeds?

W. F. Graves, Chief Engineer, Montreal Tramways Co.—No real objection to opposite joints in curved portions of special track work.

**Track Labor Efficiency.**—It has been claimed that the efficiency of track labor has decreased since the war. Have you any statistics to prove or disprove this assertion?

W. F. Graves, Chief Engineer, Montreal Tramways Co.—The following statistics compiled from observations on various jobs of track work indicate that all track labor has appreciated since

1917. To complete 1 ft. of track in 1917 required 12 99/100 hours; to complete 1 ft. of track in 1920 required 10 80/100 hours. Over the same period the average wage had risen from 37.81c. to 43.1c. an hour.

**Advantages of Air and Magnetic Track Brakes.**—What are some of the advantages from the standpoint of maintenance of car equipment of having cars fitted with air brakes? What has been your experience as to the upkeep of cars fitted with magnetic track brakes?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.—All cars are now equipped with air brakes, but we have no knowledge of any advantage from the maintenance point of view, although it is likely that the "reverse" method is not used so often for making stops.

No experience with magnetic track brakes, except experiments made some years ago which show great difficulty with track brake shoes over intersections and special work having raised guards.

# The Crisis in British Tramway and Light Railway Companies' Affairs.

A conference of tramway and light railway companies in Great Britain has issued the following statement: The financial position of electric tramways companies in Great Britain is a source of increasing anxiety. The repeated increases in wages, the improvement in the working conditions of the employes, the rise in the cost of materials for track and equipment, and the impossibility of carrying out repairs and renewals during the war have multiplied the burdens on tramways to a degree which, in spite of increases in traffic, has undermined the financial stability of the whole industry. By the recent award of the interim court of arbitration, the total war bonus paid to every tramway worker over and above his basic rate of wages has been increased to 34 shillings a week. In addition, the agreement of March, 1918, for a reduction of the working hours to 48 a week without a corresponding reduction of wages has further increased the cost of labor, so that the wages bill alone amounts to more than double the pre war figure. It is well known that the price of such materials as steel, oil, coal, and wood, which are amongst the principal requirements of the tramway industry, has risen to a crushing extent.

In the case of any ordinary industry supplying a public need, increases in cost are met by raising the price of the service. It is fully recognized by tramway companies that tramwaymen must be paid wages which will bring them on a level with men in similar occupations elsewhere, but it follows that the fares paid by the travelling public must be adequate to provide this higher standard of remuneration and to maintain the undertaking in a sound physical and financial condition. The companies are, however, subject to statutory limitation of fares and the obligation imposed by parliament in the infancy of the industry, when conditions were radically different from those of the present day.

The injustice of maintaining these limitations of fares intact was so patent that, as a result of the report made by a select committee of the House of Commons, the Board of Trade granted a measure of relief under the Statutory Undertakings (Temporary Increase of Charges) Act, 1918. It is no more than partial and temporary relief, limited to a period of two years after the war. Before a tramway company can get any relief at all it must prove that it has been adversely affected by war conditions; and the utmost it can obtain is permission to raise its fares to a point calculated to enable it to pay two-thirds of its pre war dividend. In other words, the mischief must be done before any remedy becomes possible, and the official remedy is temporary and incomplete for a trouble which is permanent and likely to grow more serious.

Municipal tramways, on the other hand, are by this act enabled to increase their fares to such an extent as will ensure their full interest and sinking fund. It is, moreover, open to them at any time to cover any losses by drawing upon the rates, although there are weighty objections to such a course. No such recourse is available to tramway companies. They are, further, subject to purchase by local authorities at certain period on terms which involve the provision of substantial reserves to meet the eventual loss on capital account at purchase. It has been the custom of tramway companies to set aside reserves for this purpose and for renewals, and their investments on this account have suffered the war depreciation of about 30% in the value of gilt-edged securities.

Apart from limitations on fares tramway companies work under serious disabilities which are not realized by the general public. They are legally bound to maintain, not only the rails they use, but the surface and substructure of the roadway between and bordering the rails. Many tramway companies are, in fact, under obligation to maintain the whole width of the roadway, frequently for the benefit of competing traffic. This burden of maintenance has more than doubled since the beginning of the war.

It is important also to bear in mind that most tramway undertakings are obliged to carry workmen at a statutory fare of ½d. (1c) a mile, or at even cheaper rates adopted at a time when the purchasing power of money was double its present value. Workmen's fares were never really remunerative, and today they involve a heavy loss which has to be made up by increase of fares within the statutory limits to the ordinary passengers.

The maintenance of an efficient and progressive tramway industry is a matter of national importance. In the year before the war tramways in Great Britain carried close upon 3,500 millions of people—nearly three times the number of third class railway passengers. Since then tramway traffic has grown, and still further demands will be made upon the industry. At a time, therefore, when tramway undertakings find themselves called upon to reconstruct their track and equipment after the inevitable delays of war, to improve and develop their services, and to adjust their finances to the new conditions created by the demands of labor, they are refused any material relief from the restrictions and burdens of pre-war days. Unless something is done, and done swiftly, tramway services must deteriorate, to the loss not only of tramway shareholders, but of the whole travelling public. The inevitable end—assuming the existing tendencies to continue acting—is bankruptcy, first of the weaker undertakings and later even of the strongest. Already in America, where somewhat similar conditions as to fares and wages prevail, over 13% of the electric tramway undertakings fell recently into the hands of receivers, and a special commission has been appointed to save the situation for the whole industry.

If the tramway industry is to continue to pay the additional wages imposed under parliamentary authority, to provide a thoroughly efficient service, and to assist housing schemes by rapid transportation, it must be put on such a basis as will enable it to yield a fair return on the capital already spent, and to attract fresh capital for the developments required in the public interest.

There are two directions in which the government is called upon to secure reasonable conditions for tramway companies. One is to amend the antiquated limitations on maximum fares. The other is to relieve the undertakings of road maintenance and other expenses which do not properly belong to the tramway service.

## Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**'s new station at Marpole, on the Vancouver-Steveston line, has been completed. It is a similar structure to the one at Granville St. Bridge, Vancouver. (May, pg. 257.)

**Calgary Municipal Ry.**'s new intersection for installation at Center St. and Eighth Ave., Calgary, Alta., was expected to be delivered by the middle of September, when it would be at once installed. It weighs 168,000 lb. (Sept., pg. 503.)

**Grand River Ry.**—The Board of Railway Commissioners has authorized the rebuilding of bridge 4 over Spring Creek, Preston Jct., Ont. (Sept., pg. 503.)

**Hamilton St. Ry.** is, we are officially advised, about to build 4,073 ft. of double track on King St. West, Hamilton, Ont., from Margaret St. to Paradise Road. (Sept., pg. 503.)

**Hydro Electric Ry., Essex Division.**—A press report states that work has been started on building a second track upon a section of the old Sandwich, Windsor & Amherstburg Ry. in Windsor, Ont. This section, we were advised recently, is on London St., and is about a mile long. (Sept., pg. 502.)

**Lake Erie & Northern Ry.**, according to a press report, proposes to build a spur line on Frank St., Brantford, Ont. (Sept., 1919, pg. 501.)

**London & Port Stanley Ry.**—A press report states that it is proposed to erect a foot bridge over the Thames River at London, Ont., and a brick shelter at the Westminster Hospital. (June, pg. 316.)

**Nova Scotia Tramways & Power Co.** is reported to have notified the Halifax, N.S., City Council that it cannot raise the money necessary for work on its lines on the streets which the city is paving this year, and as a result the council decided to suspend all paving work until May, 1921, except such as was actually in progress. (Jan., pg. 34.)

**Quebec Ry., Light & Power Co.**—W. J. Lynch, General Manager, informed the Quebec City Council recently that the

company had done all it could in regard to the extension of lines, and that if there had been any delay in building the St. Valier St. and Bell's Road extensions this was due to the neglect of the Board of Railway Commissioners to grant permission to go over the C.P.R. and C.N.R. lines. Recently there had been changes suggested in regard to streets where lines should be laid, and if the city council chose Margaret Bourgeois St. instead of Poirier St., the work could be started immediately in that section, and cars would be operated before the middle of November. After some discussion, further consideration was postponed. (Sept., pg. 503.)

**Three Rivers Traction Co.**—We are officially advised that the company is having a car barn, with room for 9 cars, built at Three Rivers, Que., by the Shawinigan Engineering Co.

**Toronto Civic Ry.**—We are officially advised that the building of a double track line on Bloor St., from Quebec Ave. to Runnymede Road, Toronto, is under way. (Sept., pg. 503.)

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry.** and allied companies:—

| | July, 1920 | July, 1919 |
|---|---|---|
| Gross | $740,200 | $642,090 |
| Expenses | 565,515 | 492,981 |
| Net | 174,685 | 149,109 |

**Calgary Municipal Railway.**—

| | 1920. | 1919. |
|---|---|---|
| Car earnings | $72,549.79 | $68,962.35 |
| Miscellaneous earnings | 4,606.32 | 1,425.14 |
| Total | $77,156.11 | $70,387.49 |
| Operating expenses | 69,176.25 | 52,844.18 |
| Net revenue | $7,979.86 | $27,543.31 |
| Passengers carried | 1,289,736 | 1,431,738 |
| Car miles | 257,397 | 273,959 |
| Revenue per car mile | 29,97c. | 25.172c. |
| Operating expenses car mile | 26.875c. | 19.289c. |
| Operating expenses, car hour | $2.623 | $1.890 |
| Average fare | 5.6c. | |

**Edmonton Radial Ry.**—A press report states that there was a net deficit of $50,529 on the Edmonton, Alta., public utilities for June, the Edmonton Radial Ry. being responsible for approximately $40,000 of this.

**London & Port Stanley Ry.**—A press report states that the report for the past fiscal year shows a gross revenue of $499,656. The gross expenses were $350,740.61. Income increased $81,000. but expenses had increased $88,000. J. E. Richards, Manager and Treasurer, stated that the road was putting aside over $19,000 a year in a depreciation account. He also stated that the road would, after Dec. 31, make its report of operations coincide with the calendar year instead of from July 1 to June 30, as heretofore.

**Toronto Railway.**—

| | 1920 Receipts | 1920 City percentage | 1919 Receipts | 1919 City percentage |
|---|---|---|---|---|
| Jan. | $ 652,350 | $110,950 | $ 588,923 | $ 88,339 |
| Feb. | 595,861 | 119,172 | 545,771 | 96,563 |
| Mar. | 745,706 | 149,141 | 615,526 | 123,105 |
| Apr. | 653,340 | 130,668 | 600,231 | 120,046 |
| May | 644,458 | 132,892 | 620,068 | 124,014 |
| June | 544,833 | 108,966 | 431,082, | 86,217 |
| July | 641,793 | 128,539 | 534.412 | 128,359 |
| Aug. | 631,521 | 126,304 | 629,540 | 125,908 |
| | $5,129,862 | $1,006,452 | $4,565,553 | $892,551 |

**Toronto Ry., Toronto & York Radial Ry.** and allied companies:—

| | July, 1920 | July 1919 | 7 mos. to July 31, 1920 | 7 mos. to July 31, 1919 |
|---|---|---|---|---|
| Gross | $1,189,315 | $977,262 | $8,235,063 | $7,110,558 |
| Expenses | 982,960 | 695,027 | 5,633,578 | 4,338,323 |
| Net | 206,355 | 282,235 | 2.601.485 | 2,772,235 |

**Winnipeg Electric Ry.** and allied companies:—

| | July, 1920 | July 1919 | 7 mos. to July 31, 1920 | 7 mos. to July 31, 1919 |
|---|---|---|---|---|
| Gross | $391,709 | $337,978 | $3,036,386 | $2,212,618 |
| Expenses | 284,954 | 283,014 | 2,252,881 | 1,741,501 |
| Net | 106,755 | 54,964 | 783,505 | 471,117 |

The surplus, after allowing for fixed charges, for June, for $57,415,26, and for July, $45,377.06.

## Winnipeg Electric Railway Omnibus Service.

The accompanying illustration shows a new type of motor bus just placed in service by the Winnipeg Electric Ry. These busses were designed by the company's own engineers, and were built in Winnipeg by the Sterling Body & Carriage Co. The chassis is a 1½ ton Sterling truck. The body accommodates 20 people seated, and 15 standing. The bus is operated by one man, who, of course, operates the entrance and exit doors, which are at his right.

Quite a novel device in the construction of this bus is the auxiliary rear exit, to be used in cases of emergency only. The step for this emergency exit is connected with the door, and when the door is released by the driver, it is forced open by a spring, which automatically slides the step into position.

Winnipeg Electric Railway Omnibus.

The interior is heated from the exhaust of the engine.

The Winnipeg Electric Ry. Co. is operating two bus routes as auxiliaries to the car service. It has decided to adopt the new type of bus as standard for all bus lines.

## The London Street Railway Situation.

Some progress appears to have been made by the London, Ont., city council in its endeavors to effect a settlement of the several questions at issue between it and the London St. Ry. Co. As a result of discussions which have taken place during the last three or four months, the council's special railway committee is reported to have agreed on Sept. 20 to recommend that a vote of the ratepayers be taken on five separate questions, including the question of cancellation of the franchise and purchase of the road by the city; the purchase of the road by the Hydro Electric Power Commission of Ontario, with the bonds guaranteed by thecity; asking the Ontario Railway Board to continue to operate the road until the expiration of the franchise, but at a service at cost plan; operation of the road by the company under a service franchise with the consequent initiation of some scheme for a municipally owned transportation system. If any of the first four is approved the council may the nincrease the fares. It is suggested that these questions should be submitted to the ratepayers during October.

## Mainly About Electric Railway People.

**Mrs. W. G. Murrin**, wife of the Assistant General Manager, British Columbia Electric Ry., Vancouver, has been elected Vice President for B.C. of the Association of Canadian Clubs.

**C. L. Wilson**, Assistant Manager, and F. S. Livingstone, Traffic Manager, Toronto & York Radial Ry., have been elected Worshipful Master and Senior Warden, respectively, of Metropolitan Lodge, A.F. & A.M., Toronto.

**The New Brunswick Electric Power Commission** received tenders to Sept. 21 for the construction of earth dams and other work on the east and west branches of the Musquash River, about 12 miles from St. John, and about one mile from the New Brunswick Southern Ry.; and for the construction of an earth dam and other works on the Shogomoc River, about 40 miles north of Fredericton, on the line of the St. John & Quebec Ry. This is the first instalment of the work to be undertaken by the New Brunswick Government for the development of water powers and the distribution of electrical power. The Commission consists of three members, Hon. C. W. Robinson, member of the N. B. Government without portfolio, Chairman; Reid McManus, Secretary; and C. O. Foss, Chief Engineer.

**Chatham, Wallaceburg & Lake Erie Ry.**—A press report states that steps are being discussed to petition the Ontario Government for the taking over of this electric railway and having it operated by the Hydro Electric Power Commission of Ontario. It is stated that a satisfactory service is not being given, and that the present owners have no funds available for its extension. (Sept., pg. 503.)

**Montreal Harbor Railway Electrification.**—A press report states that about 42 miles of the Montreal Harbor Commissioners railway, which is in process of electrification, will be ready for operation next spring, and that the electrification of the remaining 16 miles will be done later. Some particulars of the work were given in Canadian Railway and Marine World for September, pg. 473.

# Marine Department

## General Shipbuilding Matters Throughout Canada.

**British American Shipbuilding Co.**, Welland, Ont.—This company's plant was closed down permanently on Sept. 18, on the completion of the hull of the s.s. Canadian Squatter, which is under construction for Canadian Government Merchant Marine, and it is expected that the property will be offered for sale, and the shipbuilding machinery removed. The company was formed in 1918 to build steel steamships for the British Government, and received orders from the Imperial Munitions Board for three, viz., War Weasel, War Badger and War Racoon, each of 3,500 d.w. tons. The company later received orders for two steel steamships of 4,575 d.w. tons for Canadian Government Merchant Marine, viz., Canadian Otter and Canadian Squatter.

**B.C. Marine Engineers & Shipbuilders** Ltd., Vancouver, B.C., was incorporated July 29, with an authorized capital of $1,000,000. The directors are Innes Hopkins, Managing Director; C. J. Isted, Secretary; W. H. R. Hopkins, J. K. McKenzie, G. H. Bushby and H. F. Bullen. It is reported that the company will acquire, as a going concern, B.C. Marine Limited, which was incorporated in 1914, and which built the s.s. Capilano, early this year, for the Union Steamship Co., and is building an auxiliary powered schooner for the Hudson's Bay Co.

**Burns & Kelleher**, Halifax, N.S., have about completed the repairs to the French s.s. Barr, which was considerably damaged by fire at Dartmouth, N.S., in the spring.

**Collingwood Shipbuilding Co.**, Collingwood, Ont., have overhauled and repaired the steamships Collingwood and W. Grant Morden, owned by Canada Steamship Lines Ltd., and Agawa, owned by Algoma Central Steamship Line, preparatory for the autumn grain trade.

**J. Coughlan & Sons**, Vancouver, B.C., launched the s.s. City of Vancouver, sister ship of the steamships Margaret Coughlan and Indus, Sept. 10, the christening being performed by Mrs. R. H. Humber, daughter of J. Coughlan. Like the s.s. Margaret Coughlan, the s.s. City of Vancouver will be operated by Canadian Western Steamships Ltd., a subsidiary of the building company. She is the eighteenth steel steamship to be built by the company, the keel of the nineteenth, of a similar type, having been laid Aug. 2, as mentioned in our last issue.

**Dominion Shipbuilding & Repair Co.**, Toronto.—The construction, for Gulf Navigation Co., New Orleans, La., of the s.s. Floraba, which was partly built when the Dominion Shipbuilding & Repair Co. assigned recently, has been completed for the owners, under the direction of Capt. J. B. Foote, of Toronto, under an arrangement approved of by the court, and she left Toronto Sept. 19, with a cargo of beer for Santiago, Cuba.

John Inglis Co., Toronto, has issued a writ against the Gulf Navigation Co., New Orleans, La., asking for possession of the s.s. Floraba and for a declaration that it is entitled to a lien on the ship, and for an injunction restraining the selling or assigning of two boilers in the ship, or in the alternative the payment of $42,045, claimed as balance of purchase money.

See also under "The Dominion Shipbuilding & Repair Co.'s Affairs," and under "Dominion Shipbuilding & Repair Co.,' 'in "Canadian Government Merchant Marine, Shipbuilding, Operation, etc.," on other pages of this issue.

**Fraser Brace Shipyards Ltd.**, Montreal, is overhauling and refitting the s.s. Paipoonge, formerly a Great Lakes ship, to fit her for ocean freight service. The work includes overhauling the main engines, boilers and auxiliaries, supplying of new winches, anchors and chains, new masts and derricks and complete new accommodation for officers and crew, at an approximate cost of $150,000. The s.s. Paipoonge was owned formerly by Canadian North West Steamship Co., Port Arthur, Ont., and in 1918 was sold to South American parties for operation between South American ports, but owing to default in payments, she was again sold, the purchaser being H. B. Smith, President, Collingwood Shipbuilding Co. Prior to this sale, the ship had been cut in two, to pass through the canals on the way to the ocean, and it was the intention to rejoin the parts and refit her for service on the Great Lakes. We are advised that she will be completed and ready for loading so as to leave Montreal before the close of the St. Lawrence navigation season.

**Halifax Shipyards Ltd.**, Halifax, N.S., J. E. McLurg, General Manager, stated at the luncheon following the launching of the s.s. Canadian Mariner, for Canadian Government Merchant Marine, Sept. 4, that the company was negotiating with persons who wished to place a contract for several oil tank steamships, and that there was a possibility that the keel of a 10,000 ton one might be laid on the ways vacated by the Canadian Mariner. We were officially advised Sept. 20 that this contract had not been signed.

**Harbour Marine Co.**, Victoria, B.C., started work early in July on the car ferry for the C.P.R., which has already been described in Canadian Railway and Marine World.

**Steel Tank Steamship Transpet, built for Standard Oil Co. of New Jersey, by Collingwood Shipbuilding Co.**

The s.s. Transpet, which was built for the Standard Oil Co. of New Jersey's subsidiary, Compana Transportador de Petroleos, of Buenos Aires, a description of which was given in Canadian Railway and Marine World for September, sailed from Montreal, Sept. 12, for Halifax, N.S., and thence to Buenos Aires. She left the builder's yard light, and proceeded to her destination in a similar condition. On arrival at Buenos Aires she will be employed in bunkering steamships, and in lightering the large tank steamships which trade between Mexico and Campana, and which are of too great draft to proceed to Campana from Buenos Aires without being lightered.

The company stated recently that it hoped to obtain orders for ships for the French Government, under the legislation to aid shipbuilding, passed by the Dominion Parliament at its recent session. On the other hand, press reports say that after the two steel cargo steamships building for Canadian Government Merchant Marine and the C.P.R. car ferry are completed the yard will be closed.

**The Montreal Light, Heat & Power Co.** has commissioned Walter Lambert, M.I. N.A., naval architect and marine surveyor, Montreal, to design a small ice breaker, tenders for building which will be asked about the end of October.

**Port Arthur Shipbuilding Co.**, Port Arthur, Ont.—The company's report for the year ended June 30 indicates a slackening of operations, following the busy period in shipbuilding during the war. The assets were $5,982,162, against $6,154.902 at June 30, 1919; gross profits, $583,369, against $821,549; other income, $109,110. against $87,688; general and administration expenses, $164,183, against tions, bond interest and miscellaneous

charges. $182,401, against $231,754; net profits, $301,215, against $517,563.

Prince Rupert Drydock & Engineering Co., Prince Rupert, B.C.—It was reported a few months ago, and mentioned in Canadian Railway and Marine World at the time, that this company was negotiating for a contract to build 20 large oil tank steamships. In this connection Newman Erb, Chairman of the Board, New York, N.Y., wrote us as follows:—"The negotiations for tankers to be constructed at our Prince Rupert yard were dependent upon legislation being enacted authorizing the Dominion Government to assist in extending credit to the buyers. I am afraid that the act authorizing a credit of 50%, payable during a period of five years, and by way of a government guarantee of the deferred payments, will not be sufficiently attractive, in view of the United States Shipping Board's policy of extending a 10 years credit and otherwise more favorable terms to purchasers of cargo vessels built by the U. S. Shipping Board and which aggregate 1,700,000 tons, with which you are doubtless familiar. A credit of 66 2/3% would, in our judgment, be sufficient attractive to give Canadian shipyards sufficent orders to keep them occupied for 18 months to come, at least."

An Ottawa press dispatch of Sept. 15 said:—"A form of proposed contract between the Mexican Government and the Prince Rupert Dry Dock & Shipbuilding Co. is before the Marine Department for approval. It contemplates the construction of 37 vessels, tankers, coast patrol, freight and passenger boats. Newman Erb, a New York financier, is conducting the negotiations. The department has been asked to examine the contract, but no application for financial aid under the act of last session has yet been made, though it is expected." Another dispatch of Sept. 16 said the shipbuilding company had applied for government aid, but we were advised by the Marine Department Sept. 22 that no such application had then been received.

J. H. Pillsbury, acting Manager of the company's plant at Prince Rupert, was reported to have stated in Vancouver, B.C., recently, that the company had an order for 5 steel oil tank steamships and that the steel would probably be obtained from Sydney, N.S.

Southern Salvage Co., Liverpool, N.S. This company's shipbuilding plant was destroyed by fire Sept. 17, the damage being estimated at $20,000. The company built one of the "war" type of wooden steamships for the British Government, under order from the Imperial Munitions Board.

Three Rivers Shipyards Ltd., Three Rivers, Que.—In connection with the liquidation proceedings of this company, the French Government has applied to the Practice Court at Montreal for the possession of five wooden steamships, named Bouzonville, Brumath, Cattenon, Cernon and Douxwiller, now lying at Quebec. The claim asserts that the French Government ordered 10 of these ships from the Anderson Co. of New York, and that this order was passed on to the Three Rivers Shipyards Ltd., a subsidiary of the National Shipbuilding Corporation, of Wilmington, Del. Five of the ships have been delivered, and the whole 10 have been paid for, at $322,500 each, there being an amount of about $200,000 still to be paid for minor changes and repairs on the five, the possession of which is now being sought.

Victoria (B.C.) Shipowners Ltd., Victoria, B.C.—Instructions have been given for the laying of the keel of the fourth wooden ship which this company is building under special financial aid from the Dominion Government. It was at first anticipated that only three of these ships would be undertaken, although the agreement provided for four. It is expected that the first will be ready for launching during November.

Wallace Shipyards Ltd., North Vancouver, B.C.—With reference to the report that the C.P.R. had given this company an order for a steamship for the British Columbia Coast Service, as mentioned in our last issue, we were officially advised Sept. 2 that while the contract had not yet been signed, there was every reason to believe that it would be. The dimensions of the new ship will be,—length b.p. 317 ft., beam 48 ft., depth of hold 18½ ft. She will have cellular double bottom, and the hull will be divided by 8 transverse bulkheads. She will be single screw, driven by reciprocating engines, balanced on the Yarrow, Schlick and Tweedie system, for a speed of 16 knots an hour. She is designed for an all round service on the coast. The accommodation will be arranged for about 200 first class passengers, with carrying capacity for about 600 tons of cargo. She will be equipped to burn oil fuel, and will be easily convertible into a coal burning ship. She will be built to the British Corporation class, fully equipped in accordance with Canadian inspection requirements, amply lighted, and provided with hot and cold running water in every stateroom, with every modern convenience. The cost of the ship completed and fully furnished, will be about $1,500,000.

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Work was commenced Sept. 17 on an attempt to raise the s.s. Vinemount, which was sunk at Cascade Point, near the foot of the Soulanges Canal, some time ago.

## Canadian Notices to Mariners.

The Marine Department has issued the following:—

British Columbia. — The fixed white light near the north end of Pilot Point, Pilot Bay, Kootenay Lake, has been replaced by an unwatched occulting white light automatically occulted at short intervals.

The fixed red light on Hospital Rock buoy, Victoria Harbor, formerly maintained from Nov. 1 to Mar. 31, only, will be maintained throughout the year.

New Brunswick, Bay of Fundy. — A larger fog bell and mechanism have been installed on the northwest point of Cherry Island in Passamaquoddy Bay, giving one stroke every 20 seconds, instead of one stroke every 15 seconds, as formerly.

Nova Scotia, Halifax Harbor. — The Sambro lightship 15 at Sambro outer bank at the entrance to Halifax habor, will without further notice, on or about Octo. 1, be removed from her station to undergo necessary overhaul. While she is away her station will be marked by a combined gas and whistling buoy painted black, showing an occulting white light, and further notice will be given when the lightship is replaced.

Northumberland Strait.—The revolving white light at the west end of Pictou Island will be replaced, without further notice, by a flashing white catoptric light, showing 2 flashes every 30 seconds, with an interval 7½ seconds between each.

Ontario, Georgian Bay.—The color of the octagonal lantern on Brebeuf Island back range, Beausoleil Island, will be changed from red to white, without further notice.

Lake Erie.—The occulting aceytlene light, on the outer end of the east breakwater pier, Rondeau harbor, will be replaced by a fixed white light; the occulting white acetylene light on the inner end of the east pier will be replaced by a flashing white light, showing a flash every 8 seconds; and the occulting white light on the outer end of the west breakwater pier will be changed to an occulting red light, on or after Sept. 1.

The occulting white acetylene light, shown from a lens lantern on a pole, on the southern extremity of Pointe aux Pins, about 2½ miles east of Rondeau harbor, will be slightly increased in power, on or after Sept. 1.

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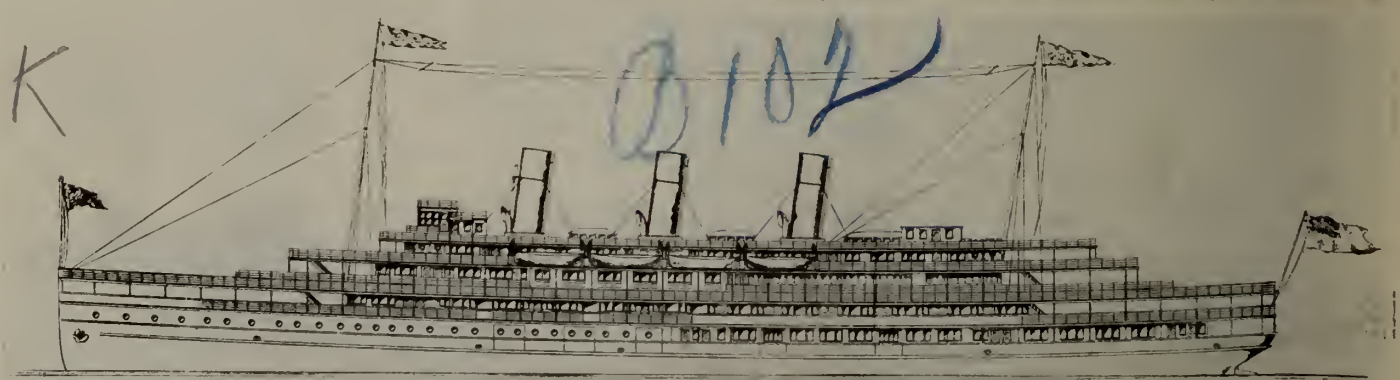
Northern Pulpwoods & Transport Co. Ltd. has been incorporated under the Ontario Companies Act, with $500,000 authorized capital and office at Toronto, to carry on a general lumber and pulpwood business, and to own and operate ships.



Steamship, with capacity for 4,000 passengers, to be built for Canada Steamship Lines Ltd., Toronto-Niagara Falls Service.
For description, see Canadian Railway and Marine World for September, pg. 522.

# Canadian Pacific Railway Co's Twin Screw Steamship Montcalm.

Canadian Railway and Marine World for August announced the launching at Clydebank, Scotland, on July 3, of the twin screw steamship Montcalm, being built for the C.P.R., to run under the management of Canadian Pacific Ocean Services Ltd., in its cabin service, between Canada and Liverpool, Eng. The following fuller information has been received since:—The Montcalm is the first of three ships now being built for the C.P.R., two being under construction at Clydebank, and one at Govan, Scotland. She is being built to Lloyd's highest class to meet all the Board of Trade requirements as a passenger ship. Her principal particulars are as follows: Length on waterline, 563 ft.; breadth moulded, 70 ft.; depth to C (shelter) deck, 43¼ ft.; depth to boat deck, 68 ft.; gross tonnage, about 16,200 tons.

The ship is of the shelter deck type, with the bridge deck extending almost the full length, and long erections above. She has a cruiser stern, 2 masts, and 2 funnels, which will give her when complete a most imposing appearance. Twelve watertight bulkheads, extending to C deck, divide the ship into 13 watertight compartments, and provide a high standard of subdivision. The cellular double bottom, in which will be stored oil fuel and reserve feed water, extends fore and aft the complete length, and is carried well up the bilges, giving additional protection; while the machinery spaces are further shielded by longitudinal bulkheads and inner skins. Oil fuel will be stored in these compartments also, at the side of the machinery spaces. Fresh water tanks are built alongside the shaft tunnels.

Spacious accommodation for 454 cabin passengers is provided amidships on B and C decks, the staterooms being arranged for 2 and 4 passengers and furnished most comfortably. The cabin dining saloon, a spacious apartment extending the full breadth of the ship and providing ample seating accommodation, is located on D deck, amidships, convenient to the main entrance, and has a large well overhead. The decoration is in Georgian style and the walls are painted white, while the ceiling is finished with artistic mouldings. A large number of tables are arranged for small parties. At the forward end of A deck is the cabin lounge, decorated in Georgian style and arranged in small bays and cosy corners, with separate writing room and card room at the forward end. The raised deck over, in conjunction with the large windows, give this room a spacious appearance. The floor is finished in oak, laid on springs, for dancing. A large tapestry panel is fitted over the fireplace, and the walls and ceiling are painted white. Just abaft the after funnel hatch, on the same deck, is the cabin drawing room, with raised deck over, and a large bay window on one side. This room is also decorated in Georgian style and finished in white. Next to the cabin drawing room is the library. The cabin smoking room is at the aft end of A deck. Its style is Jacobean, and the walls are framed in oak. As with the lounge and drawing room, this apartment is fitted with a large electric fireplace, which greatly adds to its comfort and appearance. Extensive promenading space for cabin passengers is provided on A and B decks. On A deck the promenade encircles the deck houses, and extends the whole length of the deck, allowing plenty of space for games, clear of the actual promenade, and sheltered recesses are arranged for deck chairs.

Most comfortable permanent third class accommodation is provided on D and E decks in 2, 4 and 6 berth rooms, where there is also portable accommodation for an additional number of passengers. The third class dining saloon is on D deck aft. Two smoking rooms and two lounges are fitted, a large one of each on B deck aft, with smaller ones on C deck forward. The lounge on B deck aft is finished and decorated after the style of a Parisian cafe.

The captain is accommodated on the navigating bridge, the officers on A deck forward, and the engineers on C deck aft, complete with cabins, bathrooms, lavatories, etc. The seamen and boiler attendants are berthed amidships on C deck. The galleys, pantries and bakery for first and third class accommodation are amidships on D deck, between the dining saloons, thus ensuring quick service. All the latest improvements for cooking, etc., have been supplied.

The heating and cooling is on the thermotank system, which will ensure a temperature of at least 65° Fahr. under the coldest weather conditions. Ten thermotanks are fitted, sufficient to change the air in any of the compartments to which they are connected at least 8 times an hour.

The cargo will be handled by means of steel tubular derricks, fitted on the masts and derrick posts. Each hatch is supplied with 3 derricks, worked by 14 electric winches.

Ample lifeboat accommodation, to the standard of the International Convention, is provided for all passengers and crew. Two rows of nested boats are fitted on sliding chocks, so that they can be moved from one side of the ship to the other, and are placed under Babcock & Wilcox (Wylie) patent double-acting davits. The remaining lifeboats are worked by Australis patent davits, specially designed to enable the boats to be got out and lowered with the least possible delay and without manual labor. A complete system of wireless telegraphy and fire extinguishing service have been fitted. Pneumercator tank gauges have been fitted in all oil fuel and fresh water tanks, with indicators in the machinery space, so that the tanks are always under the supervision of the engineers.

**The propelling machinery** fitted in one engine room, consists of two sets of steam turbines of the latest Brown-Curtis marine type, arranged to work with superheated steam, and driving twin screws through double-reduction helical gearing. Each set of turbines consists of one high-pressure and one intermediate pressure turbine, in tandem, driving through one portion, and one low pressure turbine driving through the other portion of the gearing. Astern turbines are incorporated in the casings of the intermediate and low pressure ahead turbines. Adjusting blocks of the Michell type are fitted to the turbines, and the bearings of the turbines and gearing are arranged to work under forced lubrication. One condenser of the underhung type is fitted for each set of turbines, and bolted direct to the exhaust branch of the low pressure turbine. The main shafting is of ingot steel and is finished bright all over. Each line has a main thrust block of the Michell type fitted next to the gearing to take up the propeller thrust. The propellers are of the built type, with four manganese bronze blades to each. The bosses are of cast steel, and cast iron cones are fitted over the propeller nuts. A very full equipment of auxiliary machinery is fitted, comprising 2 centrifugal circulating pumps, 2 Weir dual air pumps, 2 pairs of Weir feed pumps, 2 hot-well pumps, 1 Weir surface and one direct-contact feed water heater, 2 feed water filters of gravitation type, and also an outfit of forced lubrication, sanitary, freshwater and other service pumps, together with complete evaporating and distilling plant and auxiliary condenser and pumps.

**The steam-generating installation** consists of 10 single-ended cylindrical boilers, arranged for burning oil fuel, and suitable for a working pressure of 215 lb. per sq. in., and fitted with smoke-tube superheaters. Each of the boilers has three furnaces, and Howden's type of forced draught is fitted. The boilers are placed in two compartments, and each boiler room is equipped with a working, and a stand-by, oil fuel installation, complete with the necessary pumps, heaters and strainers. The forced draught fans are electrically driven, there being two fans and motors to each boiler room. The machinery and boilers have been built to the requirements of the Board of Trade, Lloyd's Survey, and Canadian Government regulations.

The ship was designed by Hugh Macdonald, Naval Architect, C.P.O.S., and is being built by John Brown & Co., under the supervision of the owner's consulting naval architects, J. H. Biles & Co., of London and Glasgow.

We are advised that the s.s. Montcalm is expected to be ready for service by March, 1921.

## Panama Canal Traffic.

The Panama Canal completed 6 years of operation on Aug. 14, having been opened to commerce on Aug. 15, 1914. During the 6 years the total number of commercial ships making the transit was 10,573. Their aggregate net tonnage, according to the rules of measurement, was 34,540,266. The cargo they carried totaled 40,313,629 tons of 2,240 lb.

This traffic was made up of 4,934 ships, of 16,145,434 net tons, carrying 16,576,778 tons of cargo from the Atlantic to the Pacific, and 5,639 ships, of 18,394,832 net tons with 23,736,851 tons of cargo from the Pacific to the Atlantic.

The canal was opened shortly after the beginning of the late European war. This and the interruptions of traffic due to slides, the last serious one of which came to an end on April 15, 1916, interfered with the normal use of the canal in its earlier years, and government requisitioning, high freights, scarcity of tonnage, financial and industrial uncertainties, and fueling difficulties have since the signing of the armistice delayed the establishment of what may be considered the conditions of unrestricted commerce. A distinct and healthy growth of the traffic is, however, discernible, especially in the calendar year 1919 and the fiscal year 1920. Each of these, in ships and net tonnage, exceeded all previous years; and the fact that the traffic in the month and a half of the current fiscal year, beginning July 1, 1920, has been at a rate greater than that of any of the preceding years, indicates a continuing upward trend.

# Canadian Government, Merchant Marine Ltd., Shipbuilding, Operation, Etc.

**Passenger Accommodation for West Indian Trade.**—It has been decided to change the upper structure of the s.s. Canadian Fisher, and the s.s. Canadian Forester; Marine Department contracts 15 and 16; builder's yard nos. 7 and 8; each approximately 5,100 d.w. tons; under construction by Tidewater Shipbuilders Ltd., Three Rivers, Que., so as to provide for 28 passengers on each ship. These ships will be used in the West Indian service.

**Launching of Steamships.**—Since Canadian Railway and Marine World for September was issued we have been advised of the following launching of steel cargo steamships for Canadian Government Merchant Marine:—

Sept. 4, s.s. Canadian Mariner; Marine Department contract 21; builder's yard no. 1; approximately 3,390 d.w. tons, Halifax Shipyards Ltd., Halifax, N.S.

Sept. 20, s.s. Canadian Forester; Marine Department contract 16; builder's yard no. 8; approximately 5,100 d.w. tons, Tidewater Shipbuilders Ltd., Three Rivers, Que.

**Delivery of Steamships.**—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following delivery has been made:—

Aug. 25, s.s. Canadian Victor; Marine Department contract 50; builder's yard no. 77; approximately 8,390 d.w. tons, Canadian Vickers Ltd., Montreal. This ship sailed from Montreal, Sept. 2, with general cargo, for Liverpool.

**Officers of Steamships.**—The following officers have been appointed to Canadian Government Merchant Marine steamships since those mentioned in our last issue:

Masters.—Canadian Adventurer, Capt. C. S. Hill, vice Capt. W. Wyman, transferred; Canadian Conqueror, Capt. H. E. Webb, formerly on Canadian Seigneur; Canadian Pioneer, Capt. M. Robertson, vice Capt. T. R. Coffin, transferred; Canadian Runner, Capt. W. Wyman, formerly on Canadian Adventurer; Canadian Seigneur, Capt. J. E. Faulkner, formerly on Canadian Trapper, vice Capt. H. E. Webb, transferred; Canadian Trapper, Capt. J. D. MacKenzie, vice Capt. J. E. Faulkner, transferred; Canadian Victor, Capt. T. E. Coffin, formerly on Canadian Pioneer; Canadian Winner, Capt. W. Wingate.

Engineers.—Canadian Carrier, W. Fotheringham; Canadian Farmer, R. H. Murphy; Canadian Fisher, T. J. S. Ray; Canadian Mariner, S. Evans; Canadian Observer, F. Stanley; Canadian Planter, W. O. Beavers; Canadian Raider, T. Fraser; Canadian Recruit, G. Stephen; Canadian Runner, C. Thompson; Canadian Sealer, J. Hoey; Canadian Squatter, W. Cunningham; Canadian Voyageur, R. Cook; Canadian Warrior, John Prysz.

**Ontario Freight Office.**—A Canadian Government Merchant Marine office has been opened at the corner of King and Toronto Sts., Toronto, in the room occupied formerly by the C.N.R. ticket office. It is in charge of F. G. Wood, General Ontario Freight Agent.

**Appointment of Officials.**—J. P. Doherty, heretofore Port Agent, C.G.M.M., at St. John, N.B., is reported to have been appointed Assistant General Freight Agent, at Montreal, and Harold E. Kane, heretofore his assistant at St. John, is reported to have been appointed Port Agent there.

**West Indian Representatives.** — The following representatives have been appointed for Canadian Government Merchant Marine and Canadian National Rys..: Bridgetown, Barbados, Gardner Austin & Co.; Georgetown, Demerara, Sandbach, Parker & Co.; Kingston, Jamaica, Jamaica Shipping & Trading Co.; Trinidad, Geo. F. Huggins & Co.

**East Indian Service.**—Canadian Government Merchant Marine has made an arrangement with the British India Steam Navigation Co. under which Canadian Government Merchant Marine and the British India Steam Navigation Co. will each have an equal number of the latest steel cargo steamships in joint service between eastern Canadian ports and India, the Straits Settlements and Java. During St. Lawrence navigation, Montreal will be the Canadian port and during the winter this traffic is to be handled through Halifax, N.S., and St. John, N. B. The agents of the British India S. N. Co. will handle Canadian Government Merchant Marine ships in the far east and will secure cargoes for the return voyages to Canada, and the British India S. N. Co. ships will be handled in Canadian ports by Canadian Government Merchant Marine. Traffic beyond Canadian seaports to interior points in Canada will be handled over the Canadian National Rys. When the Canadian Government Merchant Marine places ships in service from Vancouver to India, the Straits Settlements and Java, the agents of the British India S. N. Co.s agent will handle these ships as well. The C.G.M.M. s.s. Canadian Pioneer sailed from Montreal for British India, Java, and the Straits Settlements on Sept. 11, and the British India S. N. Co.'s s.s. Boyne is scheduled to sail from Montreal about the end of October.

**Oriental Service.** — Canadian Government Merchant Marine has made an arrangement with Alfred Holt & Co., of the Blue Funnel Line, of Liverpool, Eng., for the establishment of a joint steamship service between Vancouver, B.C., and the Orient, each company having a like number of ships for joint service. Both companies will be represented in the Orient by Alfred Holt & Co.'s agents, Butterfield, Swire & Co., who have offices in all important places in China and Japan, and who will also act as agents for both Canadian Government Merchant Marine and Canadian National Rys.

**The s.s. Canadian Recruit**, which, as stated in our last issue, is being repaired by Fraser Brace Shipyards Ltd., Montreal, after having been wrecked on Vache Reef, at the mouth of the Saguenay River, Dec. 20, 1919, will, we are advised, be completed ready for loading at Monreal, before the close of St. Lawrence navigation. The work in progress covers complete overhaul and renewal where necessary. Practically the whole of the bottom plating, floors, etc., and a considerable portion of the side plating, will be replaced, and new deck winches, derricks and gear will be supplied. The accommodation for passengers and the officers and crew will be practically renewed. A complete new cast steel stern post and rudder will be fitted, and the main engines, boilers, propellers, shafting and auxiliaries will be thoroughly overhauled. The work will cost about $300,000.

**British American Shipbuilding Co.**, Welland, Ont.—The two sections of the s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, which were launched on July 20 and 26 respectively, left Welland, on Sept. 18, in tow, for Montreal, where they will be joined together at Canadian Vickers Ltd. pant.

**Canadian Vickers Ltd.**, Montreal, delivered the steel cargo steamship Canadian Victor; Marine Department contract 50; builder's yard no. 77; approximately 8,390 d.w. tons, to the Marine Department. She was transferred to Canadian Government Merchant Marine, Aug. 25, loaded with general cargo, and sailed, Sept. 2, for Liverpool.

**The Dominion Shipbuilding & Repair** Co. Ltd., Toronto, when it assigned, on July 31, had under construction, for Canadian Government Merchant Marine, two steel cargo steamships, Canadian Pathfinder and Canadian Engineer, Marine Department contracts 48 and 49; builder's yard nos. 10 and 11; each approximately 3,500 d.w. tons. They were both in frame, awaiting shell plates, before further erections of the hulls could be proceeded with. The interim liquidator, Osler Wade, has intimated to the Marine Department his willingness to cooperate, so that the loss sustained by the Government may be reduced to the minimum, either by the liquidator continuing the work, on a cost plus basis, or by permitting the Government to proceed itself.

**Halifax Shipyards Ltd.**, Halifax, N.S., launched the s.s. Canadian Mariner; Marine Department contract 21; builder's yard no. 1; approximately 8,390 d.w. tons, Sept. 4, the christening being performed by Mrs. R. M. Wolvin, wife of the building company's Vice President and Managing Director. This ship is the first steel cargo steamship to be built at Halifax. The keel was laid Feb. 24, 1919, but there was considerable delay in construction owing chiefly to the shortage of steel plates.

Halifax Shipyards Ltd., expects to launch the steel cargo steamship Canadian Explorer; Marine Department con-

### Dominion Marine Association.

**President**, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

**First Vice President**, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

**Second Vice President**, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

**Executive Committee**, W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

**General Counsel**, Francis King, M.A., Kingston, Ont.

**Official Organ**, Canadian Railway and Marine World, Toronto.

tract 22; builded's yard no. 2; approximately 8,390 d.w. tons, for Canadian Government Merchant Marine early in December.

**Midland Shipbuilding Co.**, Midland, Ont., which is building the steel cargo steamship Canadian Logger; Marine Department contract 54; builder's yard no. 10; approximately 3,890 d.w. tons, for Canadian Government Merchant Marine, the keel of which was laid June 9, advised Canadian Railway and Marine World, Sept. 15, that the date of launching was very indefinite, as it still had to get 625 tons of steel plate from Nova Scotia and had no assurance as to when it would be received. This material was to have been delivered at Midland by the middle of April.

**Prince Rupert Drydock & Engineering Co.**, Prince Rupert B.C., which is building two steel cargo steamships for Canadian Government Merchant Marine, viz., Canadian Reaper and Canadian Thrasher; Marine Department contracts 42 and 43; builder's yard nos. 1 and 1; each approximately 8,390 d.w. tons, advised Canadian Railway and Marine World, Sept. 10, that Canadian Reaper would probably be launched early in November and Canadian Thrasher about a month later.

**Tidewater Shipbuilders Ltd.**, Three Rivers, Que., launched the steel cargo steamship Canadian Forester; Marine Department contract 16; builder's yard no. 8; approximately 5,100 d.w. tons; for Canadian Government Merchant Marine Ltd., Sept. 20.

## United States Shipping and Shipbuilding Notes.

The U.S. Shipping Board has authorized American Shipbuilding Co. to sell 10 steel steamships of approximately 3,700 d.w. tons each, for transfer to foreign registry. The Board stated it had been informed that the company would receive about $662,700 each for the ships, which approximates $171 a d.w. ton.

President Wilson has refused to notify foreign governments of the intention to abrogate commercial treaties, under the section of the Merchant Marine Act, which was designed to terminate treaties which prevent the imposition of discriminating duties on imports carried in foreign ships and discriminatory tonnage dues on foreign ships.

The U.S. Shipping Board offered for sale recently, 1,200 steel steamships, to private interests, at a fixed scale of prices, but failed to obtain any bids. It is now reported that about 100 ships will be selected and bids invited for them, the Board reserving the right to reject any bids. It is stated by some U.S. shipowners that the Board will have no difficulty in selling the ships, provided that it is willing to accept their value, but this, it is admitted, would involve a loss of over $1,000,000,000, basing the cost on $220 a ton.

The s.s. American, registered in the name of the Jamaica Steamship Co., Kingston, Jamaica, was offered for sale by public auction towards the end of September by the sheriff at Halifax, N. S., in connection with the claim of I. H. Mathers & Son, against the owners for wages and disbursements. She was built at Middlesbrough, Eng., in 1890, and is screw driven by engine of 110 h.p., and has the following dimensions,—length 194.9 ft., breadth 25.7 ft., depth 20.7 ft.; tonnage, 971 gross, 588 net.

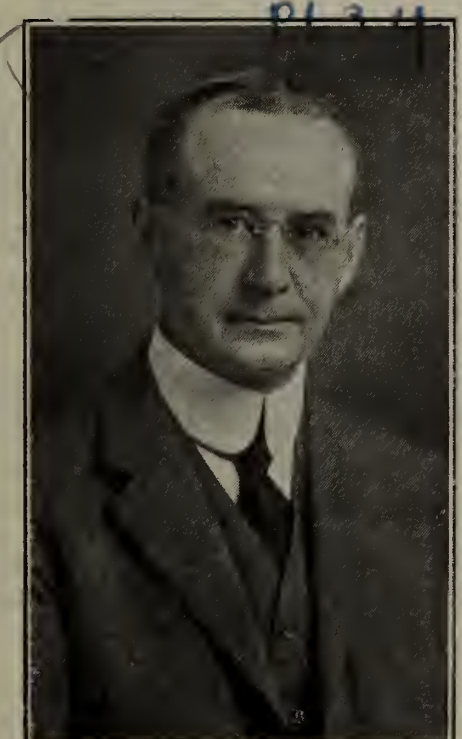
# Mainly About Marine People.

**Hon. C. C. Ballantyne**, Minister of Marine and Fisheries and of Naval Service, has been elected an honorary vice president of the Meighen Club, which has been established in Montreal for political purposes. Senator Lorne C. Webster, President Webster Steamship Co., etc., has been elected an honorary counsellor of the club.

**G. M. Bosworth**, Chairman, Canadian Pacific Ocean Services, and Mrs. Bosworth, will leave Montreal early in October for a visit to Virginia Hot Springs.

**Lieut. Commander C. P. Edwards**, General Superintendent, Radiotelegraph Branch, Naval Service Department, Ottawa, has been made an officer of the order of the British Empire, as a reward for war services.

**E. H. James**, who has been appointed Resident Engineer, for the construction



**Horace Bruce Smith,**
President, Northern Navigation Co., Collingwood Shipbuilding Co., Davie Shipbuilding & Repairing Co., Halifax Shipyards, Ltd., etc.

of the Ballantyne pier, Vancouver, B.C., was, prior to the war, engaged in harbor and dock construction in eastern Canada, and since then has been engaged in connection with the litigation re the expropriation of the Halifax Graving Dock Co.'s property. He served with the Canadian Engineers during the war and had four years active service in France, and at the signing of the armistice was Assistant Bridge Engineer at General Headquarters, Royal Engineers.

**Alex. Johnston**, Deputy Minister of Marine and Fisheries, will, it is reported, resign shortly to enter the British Empire Steel Corporation's service.

**J. B. McAndrew**, formerly on active service overseas, has been appointed Structural Engineer, Welland Ship Canal, at an initial salary of $2,700 a year.

Miss **Mabel Robb**, daughter of Thos. Robb, Manager, Shipping Federation of Canada, was married at Montreal Sept. 22 to G. W. Blaicklock.

**Horace Bruce Smith**, who has been President of the Collingwood Shipbuilding Co. for some years, has recently also been elected President of Davie Shipbuilding & Repairing Co., Lauzon, Que., and of Halifax Shipyards Ltd., Halifax, N.S. The three shipbuilding companies mentioned are to be included in the British Empire Steel Corporation merger. Mr. Smith was born in Owen Sound, Ont., and practiced law there until 1889, when he went into business, becoming principally interested in the North American Bent Chair Co. He is also President of the Northern Navigation Co. of Ontario, North American Furniture Co., Owen Sound Chair Co., Steam Navigation Co. of Canada, Vice President, Kilburn Co., and a director of Canada Steamship Lines, Dominion Steel Corporation, and several other companies. He removed from Owen Sound recently, and is living in Toronto.

**Richard Welsford** is reported to have been appointed Resident Managing Director, Union Steamship Co. of British Columbia, Ltd., Vancouver, succeeding the late E. H. Beazley. He is a son of J. H. Welsford, of J. H. Welsford & Co., Liverpool, Eng., which controls the Union Steamship Co. of British Columbia. It is stated that he will enter upon his new duties Jan. 1, 1921. He was in Vancouver during August and returned to England early in September.

**Coal Exportation and the s.s. Lydia.**—An interesting case developed recently following on the Board of Railway Commissioners order respecting the exportation of coal from Canada. The s.s. Lydia, at the time the order was issued, was loading 4,500 tons of coal at Port Hastings, N.S., and it was stated that the coal was for a U.S. port, and thus was not affected by the order. Suspicions were aroused as to the actual destination of the coal, which was stated to be a European port, the coall of the ship at New York being alleged to be merely a subterfuge. The Board of Railway Commissioners therefore ordered the detention of the ship and it was ultimately admitted that the coal was intended for a European port. It was announced Sept. 10 that the ship had been released, after having deposited $10,000 as a bond that the coal was to be sold and delivered to a Canadian or Newfoundland port, or discharged and consumed in a U.S. port. A report from Sydney, N.S., Sept. 12, stated that the Lydia ran ashore at Bear Head, in the Strait of Canso, Sept. 10, while bound for a foreign port with coal from Port Hastings. She released herself the following day, with apparently no damage, and proceeded on her voyage.

**Strike of Steamship Employes on Great Lakes.**—A strike of seamen engaged on Great Lakes steamships took place Sept. 16, for an increase of 20% in wages and some changes in working conditions. On Sept. 17, the C.P.R. announced that its steamship service between Port McNicoll, Owen Sound and Fort William was cancelled for the remainder of the season on account of the strike.

The other companies operating on the Great Lakes had their service interfered with more or less. After some negotiations, the men, it was reported Sept. 24, accepted an increase of $10 a month, and resumed work. The C.P.R. service was not resumed, the order cancelling it for the balance of the season remaining effective.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with the finally ascertained deadwelght tons multiplied by the price per ton, the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d.. two deck: 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4,575 | $207. | $ 947,025 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " | 67 | *8.408 | 180. | 1.513.440 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbldg. Co., C'wood. | 61 | *3.995 | 205. | 818.975 | Lake. s.d., p.. b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipyards Ltd. | 100 | *4,495.75 | 207. | 930,620.25 | 2.d.. p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | *4,540 | 217. | 985.180 | S.d.. p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | 2.d.. p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9. 1919 | Nov. 15. 1919 |
| 7 | Nov. 25. 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | 2.d.. p., b. and f'c's'le | " | 11 | May 31. 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbldg. Co., C'wood. | 62. | *3,964 | 205. | 812.620 | Lake, s.d., p.. b. and f'c's'le | Bri. Corp. | 9 | Jan. 3, 1919 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | *3,975 | 205. | 814,926.25 | 2.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30. 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | *3.978 | 205. | 815.541.25 | 2.d.. p., b. and f'c's'le | " | 9 | Feb. 10. 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 18 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | *4,850 | 200. | 967,000 | 2.d.. p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | July 11, 1920 |
| 15 | Jan. 24. 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | Aug. 14, 1920 | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | 2.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | Sept. 20, 1920 | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | *4,992 | 200. | 998,400 | 2.d.. p., b. and f'c's'le | " | 12 | Mar. 11, 1919 | Oct. 9. 1919 | June 24, 1920 |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | *4,992 | 200. | 998.400 | 2.d.. p., b. and f'c's'le | " | 12 | Mar. 28. 1919 | May 7, 1920 | Aug. 10, 1920 |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | *3,341 | 205. | 684,905 | Lake, s.d., p., b. and f'c's'le | " | 10½ | Dec. 9. 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3.408 | 210. | 715,680 | Lake, s.d., p., b. and f'c's'le | " | 10 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | *3.357 | 205. | 688,185 | Lake, s.d., p., b. and f'c's'le | " | 10½ | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3.406 | 210. | 715.207.50 | Lake, s.d., p., b. and f'c's'le | " | 10 | Mar. 31, 1919 | Oct. 9. 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1.636.050 | 2.d., p.. b and f'c's'le | " | 10 | Feb. 24. 1919 | Sept. 4. 1920 | ..... |
| 22 | Sept. 18, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636.050 | 2.d.. p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11. 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | *4.581 | 215. | 984,915 | 2.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18. 1919 | Nov. 22. 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8.382 | 188. | 1,575,816 | 2.d.. p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19. 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1.577.508 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | *8.390 | 188. | 1.577.320 | 2.d.. p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8,393 | 188. | 1,577.884 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23. 1919 | Nov. 8. 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | *8,399.30 | 188. | 1.579,068.40 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Winner | Harbour Marine Co. Ltd. | 1 | 8.390 | 198. | 1.661.220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | June 29, 1920 | ..... |
| 30 | Jan. 24, 1919 | Canadian Traveller | " " | 2 | 8.390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | ..... | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | *.3,972.50 | 205. | 855.348.54 | 2.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | May 11, 1920 |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,350 | 215. | 935.250 | 2.d., p., b. and f'c's'le | " | 11 | Aug. 29. 1919 | May 8. 1920 | ..... |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4.350 | 215. | 935.250 | 2.d., p., b. and f'c's'le | " | 11 | Aug. 29, 1919 | June 26, 1920 | ..... |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | *8.381 | 198. | 1.659,438 | 2.d., p., b and f'c's'le | Lloyd's | 11 | Apr. 26. 1919 | Dec. 6. 1919 | Feb. 5. 1920 |
| 35 | Nov. 22. 1918 | Canadian Exporter | " | 12 | *8,380 | 198. | 1.659.240 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | Mar. 6, 1920 |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | *8.350 | 198. | 1,653,300 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan. 24, 1920 | July 17, 1920 |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | *8.350 | 198. | 1.653.300 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26. 1919 | Feb. 24, 1920 | June 15, 1920 |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10.500 | 197.50 | 2.073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10. 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197.50 | 2.073.750 | 3.d. p., and f'c's'le | " | 12 | Oct. 6. 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | *2,776.50 | 210. | 583,065 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8. 1919 | Dec. 20, 1919 |
| 41 | Mar. 31, 1919 | Canadian Miner | " " | 6 | *2,778 | 210. | 583,380 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31. 1919 | Apr. 3, 1920 | May 7, 1920 |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8.390 | 198. | 1,661,220 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | Sept. 27. 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8.390 | 198. | 1.661.220 | 2.d., p.. b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuildlng Co. | 4 | 4,575 | 215. | 983.625 | 2.d., p., b. and f'c's'le | " | 11 | Mar. 29, 1919 | Apr. 13, 1920 | Aug. 18, 1920 |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4.575 | 215. | 983.625 | 2.d., p., b. and f'c's'le | " | 11 | July 14, 1919 | July 26, 1920 | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbldg. Co., C'wood. | 65 | *3.954 | 180. | 711.720 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 3. 1919 | Dec. 27, 1919 | Apr. 28. 1920 |
| 47 | Sept. 11, 1919 | Canadian Observer | " " | 66 | *3.981.75 | 180. | 712.910 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 12. 1919 | May 8. 1920 | June 15, 1920 |
| 48 | Sept. 2, 1919 | Canadian Pathfinder | Dominion Shipbuilding & Repair Co | 10 | 3.500 | 180. | 630.000 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | Nov. 8. 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630,000 | Lake. s.d., p.. b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18. 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,890 | 170. | 1,426.800 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | June 22, 1920 | Aug. 25. 1920 |
| 51 | Sept. 18. 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1.426.300 | 2.d. p., b. and f'c's'le | " | 11 | Jan. 17, 1920 | July 27, 1920 | ..... |
| 52 | Sept. 18. 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,800 | 2.d. p., b. and f'c's'le | " | 11 | June 2, 1920 | ..... | ..... |
| 53 | Sept. 18. 1919 | Canadian Leader | " " " | 80 | 8,890 | 170. | 1,426.300 | 2.d. p., b. and f'c'a'le | " | 11 | June 29. 1920 | ..... | ..... |
| 54 | Feb. 26, 1920 | Canadian Logger | Midland Shipbuilding Co. | 10 | 3,890 | 182.50 | 709,925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | June 9, 1920 | ..... | ..... |
| 55 | Mar. 18, 1920 | Canadian Highlander | Wallace Shipyards Ltd. | 103 | 8,390 | 167.50 | 1,405.825 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | ..... | ..... | ..... |
| 56 | Mar. 18, 1920 | Canadlan Skirmisher | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p.. b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 57 | Mar. 13, 1920 | Canadian Rover | Collingwood Shipbldg. Co., C'wood. | 67 | 3,890 | 182.50 | 709.925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | June 5, 1920 | ..... | ..... |
| 58 | Mar. 18, 1920 | Canadian Coaster | Collingwood Shipbldg Co., Kingston | 16 | 8,890 | 185.50 | 709.925 | 2.d., p., b. and f'c's'le | " | 11 | May 6, 1920 | ..... | ..... |
| ..... | ..... | Canadian Sepper | Nova Scotia Steel & Coal Co. | 8 | 2.800 | 190. | 532.000 | 2.d., p., b. and f'c's'le | Lloyd's | 8½ | May 4, 1920 | ..... | ..... |
| 60 | Feb. 2, 1920 | Canadian Challenger | Davie Shipbuilding & Repairing Co. | 476 | 8.890 | 167.50 | 1,405.325 | 2.d. p.. b. and f'c's'le | " | 11 | May 14, 1920 | ..... | ..... |
| 61 | Feb. 26. 1920 | Canadian Harvester | Port Arthur Shipbuilding Co. | 45 | 3.890 | 182.50 | 709.925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | Mar. 30, 1920 | ..... | ..... |
| 62 | April 7, 1920 | Canadian Transporter | J. Coughlan & Sons | 20 | 8.390 | 167.50 | 1,405.325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 63 | April 7, 1920 | Canadian Freighter | " | 21 | 8.390 | 167.50 | 1,405.325 | 2.d p.. b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 379,296.80 | | $72.818,073.19 | | | | | | |

## Atlantic and Pacific Ocean.

The schooner Clarence A. Moulton, from Cape Breton for Nantes, France, was reported, Sept. 13, to have been burned at sea, the crew having been saved.

Furness Withy & Co. have advised us that they have not bought the s.s. Royal George from the Cunard Steamship Co., as reported in a press dispatch mentioned in our last issue.

The schooner Maid of Brazil, which sailed from Cape Breton recently with coal, was reported to have put into Cherbourg, France, Sept. 13, with fire in her cargo. She was bound for Rotterdam.

Canadian Pacific Ocean Services' s.s. Tunisian, which was damaged in a collision with Manchester Liner's s.s. Manchester Division, in the River St. Lawrence, near Quebec, Aug. 8, has been repaired, and returned to service, Sept. 17.

Canadian Pacific Ocean Services' s.s. Empress of Britain arrived at Quebec, Sept. 8, on her maiden trip, after having been reconditioned and refitted on the conclusion of her war service. As stated in a previous issue, she has been changed to burn fuel oil, and is thus the first oil burning passenger steamship to come up the St. Lawrence. The voyage from Liverpool to Quebec was made in 5 days, 22 hr., 20 min., an average speed of 18.5 knots an hour. She brought 1,282 passengers.

White Star-Dominion Line's s.s. Regina, which is under construction at Belfast, Ireland, is expected to be ready to reopen that company's St. Lawrence season in May, 1921. She is of the single cabin type, approximately 16,000 tons. A sister ship, the s.s. Calgary, is also under construction at Belfast, and is expected to be ready for service during 1921. The company's s.s. Rimouski, which was used for transport purposes during the war, and afterwards as a cargo ship, is being fitted up at Belfast for passenger service.

The Admiralty Court at Halifax, N.S., delivered judgment Aug. 27 in the case of the Nova Scotia schooner Frances A. against the Ulster Steamship Co.'s s.s. Downshire Head for damages for the sinking of the schooner in collision off Yarmouth, N.S., in 1919. The judgment awarded $21,681 to the owner of the schooner and a similar amount to the widow of the captain, who was drowned in the collision. The balance of $70,000, which was the total of the damages, is being paid as compensation to relatives and other members of the crew who lost their lives and to survivors for the loss of their effects.

Canadian Robert Dollar Co. has issued a schedule of its steamship sailings for the winter of 1920-21, from New York, Vancouver, Karatsu, Shanghai, Hong Kong and Singapore, for the steamships Grace Dollar, M. S. Dollar, Melville Dollar, Harold Dollar, Bessie Dollar and Esther Dollar. The last named ship was purchased in Great Britain recently, and was formerly named Parisian. She is being operated on the company's general route between New York and the Orient, via the Panama Canal and Vancouver, B.C. The dimensions of the Esther Dollar are,—length 483½ ft., beam 57 ft., tonnage 7,548 gross, 4,648 net, 11,544 deadweight. She has a speed of 11 knots an hour, with a cubic capacity of 707,328 cu. ft., and fuel capacity of 13,400 barrels of oil. She is fitted with Marconi wireless telegraph equipment.

## Maritime Provinces and Newfoundland.

The Lunenburg schooner Charles A. Ritcey, while bound from France to Lunenburg, struck on Rose Point, near the entrance to Lunenburg harbor, Sept. 14, and sank, the captain being drowned.

The s.s. Sebastapool is to be placed on the Newfoundland northwest coast route, replacing the s.s. Meigle. It is announced that the Newfoundland Government will place a second steamship on the same route during October.

A St. John, N.B., press report states that a contract for dredging the deep water berths at West St. John, approximately 22,100 cu. ft., scow measure, of sand, gravel and clay, has been awarded to J. A. Gregory, West St. John, at 32c. a cu. ft.

The Dominion Government s.s. Aranmore, which went ashore on the west coast of Newfoundland in Dec., 1919, while on her way to lighthouse stations along the coast, with supplies, has been refloated. She was released by her own power, and proceeded, under her own steam, to Quebec.

The schooner Mary L. Oxner, 200 tons register, which was launched by Chester Basin Shipbuilding Co., Chester Basin, N.S., at the end of June, for W. Duff, M.P., Lunenburg, N.S., and which sailed from Lunenburg for St. John's, Nfld., July 29, was wrecked and became a total loss at Silver Cays, Sept. 13.

The suction dredge Toronto, which was towed from Norfolk, Va., for use in the Courtenay Bay development work, and which arrived at St. John, N.B., Aug. 4, as stated in Canadian Railway and Marine World for September, was built in Toronto by Polson Iron Works, and was bought recently by the St. John Drydock & Shipbuilding Co. from the Canadian Stewart Co.

The Nova Scotia Registrar of Joint Stock Companies has given notice that he has revoked the registration of the following companies, at their own request:—Colchester Steamship Co., Stella Maris Steamship Co., Argus Steamship Co., McKenzie Shipping Co., Yarmouth Shipbuilding Co., Schooner Lavonia Ltd., Relwood Shipping Corporation, Inverness Barging Co., Westport Shipbuilding Co., Overseas Shipping Co., Hero Steamship Co., St. Lawrence Shipping Co., Halifax-Le Have Steam Packet Co., Margaree Coal & Ry. Co., Pontiac Steamship Co., Noel Shipbuilding & Transportation Co., Magdalen Island Steamship Co., Merchants Transportation Co., Fowler Head Shipbuilding Co., Halifax Graving Dock Co., Falmouth Shipbuilding & Transportation Co.

## Province of Quebec Marine.

An order in council has been passed approving regulations for ferry service across the Ottawa River between Sand Point, Ont., and Norway Bay, Que. The passenger fare each way is fixed at 25c., and for automobiles with chauffeur each way $1.25.

The River St. Lawrence, which has been exceptionally low all summer, is reported from Montreal to have reached the lowest level in four years on Sept. 25, when the 33 ft. channel gauge indicated a depth of 28 ft. 11 in., a drop of 4 ft. 1 in.

The construction of shed 19 on Victoria pier, Montreal, which commenced Aug. 18, is proceeding rapidly, and it is expected that the shed will be completed and ready for use early in October. It is 900 by 100 ft., 2 stories high, with a floor load on the first story of 600 lb. a sq. ft., and it has a flat roof, for cargo purposes, with a floor load of 250 lb. a sq. ft. It is one of three sheds, nos. 17, 18 and 19, under construction. The first two, although not yet finished, have been used during this year.

## Ontario and the Great Lakes.

The British Construction Co., which planned to build a drydock at Sault Ste. Marie, has abandoned the project, and has asked for a refund of the $25,000 which it deposited with the city as a guarantee.

Works is proceeding on the reconstruction of the pier at Cobourg, Ont., the old wooden pier being removed and replaced by a concrete one. W. B. Russell, Toronto, and H. Croft, Cobourg, are the contractors.

An Owen Sound press report states work will be commenced almost immediately on a dock on the east side of the harbor, the dock to be of concrete, approximately 1,000 ft. long, and that the contract has been let to contractors at Peterborough for approximately $89,700.

The London Railway Commission is reported to be considering the possibil-

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during August, 1920:

| Articles | | Canadian Canal | U.S. Canal | Total |
|---|---|---|---|---|
| Lumber | Eastbound M. ft. B. M. | 2,380 | 38,869 | 41,249 |
| Flour | " Barrels | 168,781 | 869,440 | 1,038,221 |
| Wheat | " Bushels | 3,381,575 | 4,130,935 | 7,512,510 |
| Grain, other than wheat | " Bushels | 994,000 | 1,321,909 | 2,315,909 |
| Copper | " Short tons | 3,736 | 8,275 | 12,011 |
| Iron Ore | " Short tons | 171,086 | 8,613,735 | 8,784,821 |
| Pig Iron | " Short tons | 117 | ..... | 117 |
| Stone | " Short tons | 7,350 | 3,200 | 10,550 |
| General Merchandise | " Short tons | 1,337 | 5,608 | 6,945 |
| Passengers | " Number | 7,949 | 4,739 | 12,688 |
| Coal, soft | Westbound Short tons | 31,846 | 2,501,768 | 2,533,614 |
| Coal, hard | " Short tons | ..... | 341,690 | 341,690 |
| Iron Ore | " Short tons | ..... | 24,640 | 24,640 |
| Manufactured Iron and Steel | " Short tons | 1,021 | 6,293 | 7,314 |
| Salt | " Short tons | 1,799 | 14,593 | 16,392 |
| Oil | " Short tons | ..... | 60,256 | 60,256 |
| Stone | " Short tons | ..... | 89,913 | 89,913 |
| General Merchandise | " Short tons | 38,028 | 35,372 | 73,400 |
| Passengers | " Number | 8,323 | 5,093 | 13,416 |
| **Summary** | | | | |
| Vessel Passages | | 717 | 2,199 | 2,916 |
| Registered Tonnage | | 714,998 | 7,731,024 | 8,446,022 |
| Freight—Eastbound | | 332,903 | 8,945,168 | 9,278,071 |
| Westbound | | 72,694 | 3,074,525 | 3,147,219 |
| Total Freight | | 405,597 | 12,019,693 | 12,425,290 |

ity of establishing a steamship service between Port Stanley and Windsor, Ont., Detroit, Mich., and Buffalo, N.Y., in connection with the operation of the London & Port Stanley Ry. It is stated that a combination freight and passenger service is being considered.

The U.S. Lake Survey reports the stages of the Great Lakes for August, in feet above mean sea level, as follows:—Superior, 602.93; Michigan and Huron, 581.01; St. Clair, 575.66; Erie, 572.65; Ontario, 245.62. Compared with the average August stages for the past 10 years, Superior was 0.35 ft. above; Michigan and Huron 0.15 ft. above; Erie the same, and Ontario 0.92 ft. below.

The s.s. Keystorm, which was owned by Keystone Transportation Co., which was wrecked and sank in deep water off Grenadier Island, near Brockville, in 1913, and which was abandoned to the underwriters, will not be raised this year. Numerous attempts have been made to salvage her, but without success. Her cargo of coal was removed last year, and it has been deemed impracticable to proceed further with the recovery of the wreck this year.

The s.s. Algona, owned by W. W. Cline, Massena, N.Y., and operated for some years between Ogdensburg and down river points in the passenger and freight business, is reported to have been sold to Canadian parties. She was built at Buffalo, N.Y., in 1880, and has an oak hull with the following dimensions,—length 95 ft., breadth 18 ft., depth 5 ft., tonnage 92 gross, 63 net. She is equipped with Steeple compound engine, with cylinders 10 and 18 in. diar. by 14 in. stroke, 150 i.h.p., at 150 r.p.m., and supplied with steam by a single firebox boiler 4½ ft. diar. by 10 ft. long at 133 lb.

## British Columbia and Pacific Coast.

The Grand Trunk Pacific Coast Steamship Co. commenced its autumn and winter schedule between Vancouver, Prince Rupert and Queen Charlotte Islands, with the steamships Prince Albert and Prince John, Sept. 5. The s.s. Prince Albert is running without schedule between Vancouver and Prince Rupert, transacting such business as may be assigned her, and arriving at Prince Rupert on Wednesdays, to take up her schedule to Massett Inlet, while the s.s. Prince John has taken over the Stewart-Anyox service.

The C.P.R. s.s. Princess Sophia, which was lost in the Lynn Canal at the end of 1918, and attempts to salve which were made during the summer, has now been definitely abandoned, the only result achieved being the rescuing of the purser's safe, containing about $12,000. It is stated that, from the start, the proposal to salve the vessel was not considered feasible, and Canadian salvage companies had so decided, but the operations were undertaken by a Seattle concern which raised funds by public subscription.

Steamship Macoris Corporation Ltd., and Steamship Sagua Corporation Ltd., incorporated recently under the Dominion Companies Act, with offices at Montreal, are being organized for interests connected with the Pure Cane Molasses Co., Montreal. It is said that the steamships Macoris and Sagua, of U.S. register, have been acquired for the respective companies and that they will be transferred to Canadian register.

# Wreck Commissioners' Enquiries and Judgments.

Enquiries have been held and judgments delivered in connection with the following casualties.

### Manchester Division—Tunisian Collision.

Held at Montreal, Aug. 24, before Capt. L. A. Demers, Dominion Wreck Commission, assisted by Capts. J. B. Henry and M. H. Robertson, as nautical assessors, into the collision between Manchester Liners' s.s. Manchester Division and Canadian Pacific Ocean Services' s.s. Tunisian, near Morin shoal, in the River St. Lawrence, on Aug. 14, while the s.s. Manchester Division was at anchor. The court found that the s.s. Manchester Division could not be held to blame for the collision, but on the contrary commended the master, Capt. P. Linton, for his prompt action in slacking out the cable, which allowed his ship to give way at the time of the impact, thereby reducing the shock, and which action impressed the court most forcibly that master and officers were on the alert. The court found that the pilot, Auguste Santerre, of the s.s. Tunisian, made an excusable error of judgment in not completing the order he gave, but that order being at once countermanded by the master, the ship did not have time to evolute on the first order. The pilot was therefore cautioned. The court was of the opinion that the order, full speed astern, given by the master of the s.s. Tunisian, Capt. C. W. Hodder, was the only possible order in such a situation, and in such a short space of time, and therefore concluded that the collision was inevitable. It suggested that while a proper lookout was kept, meeting the requirements of article 29 of the Rules of the Road, perhaps a man in the crow's nest, with one on the forecastle deck, would have been more effective, but no fault was found for the two men being in the bows. The court quoted Marsden, defining an "inevitable accident" as used in Admiralty practice, as being "a collision which occures without negligence of either ship and which could not be prevented by ordinary care or skill." Ordinary skill, care and prudence were observed on both ships.

### Stranding of s.s. J. A. McKee.

Held at Montreal, Sept. 13, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and C. J. Stuart, as nautical assessors, into the stranding of the Dominion Government's s.s. J. A. McKee, on Lark reef, near the mouth of the Saguenay River, Aug. 26. The evidence of the master, Capt. J. Lintlop, showed that he placed entire confidence in the pilot, whom he thought fit to take on at Father Point, notwithstanding that his ship was exempt by the Shipping Act and by bylaws from payment of pilotage dues, and also that he himself had been several times up and down the St. Lawrence. On this point the court had no criticism to offer, but on the contrary thought that a master in such a position could, when weather conditions permitted, obtain a well deserved rest. Nevertheless it is not anticipated, nor permitted, and not usual for the master to leave full responsibility to a pilot. The master is the only individual upon whom responsibility rests. In this case the pilot elected to negotiate the northern passage from Red Island with the view of saving time, which the court considered foolhardy on his part, as the channel between Red and Green Islands is the proper one to follow, and the court failed to see any good excuse for not taking the proper channel. It could not accept his plea that he had shaped a right course, when he had not taken such observations as would have given him the exact position of his ship, and his statement that some attraction on land may have affected his compass was considered an attempt to find an excuse. The court considered that the master and pilot should have been united in ordering that the speed of the ship be reduced, that soundings be taken and that the ship come to an anchor during the fog which obtained at the time of the stranding. The court therefore found that the master, Capt. J. Lintlop, failed to exercise the judgment which his responsibility demanded and suspended his certificate for two months from Sept. 13. With respect to the pilot, E. Baquet, the court was reluctant, on principle, and on account of his youth, to suspend his license, but owing to the seriousness of the case, it did so for the remainder of the navigation season.

Thomas Robb, Manager, Shipping Federation of Canada, brought to the court's attention the fact that notwithstanding that coasting ships are exempt from payment of pilotage dues, and the taking of a pilot, yet agents, owners and masters are prohibited from engaging an individual conversant with the river, when they need one, to relieve momentarily, and enable the master to rest, unless the said individual is a licensed pilot. This matter, the court agreed, to submit to the consideration of the officer dealing with pilotage matters.

### Stranding of s.s. Tuscarora.

Held at Quebec, Que., Sept. 7, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and J. Couette, as nautical assessors, into the stranding of the U.S. Coastguard light cruiser Tuscarora, on White Island reef, in the St. Lawrence River, Aug. 31, while in tow of two tugs. The court found that the pilot, E. Pouliot, erred in judgment, in not making sufficient allowance for the strong ebb tide which he was encountering, by not steering a more northerly course till well clear of White Island. Being a young man, the court believed that the suspension of his license at this stage would be detrimental to the service, and therefore, in lieu of suspension, ordered him to pay the costs of the investigation, $150, to the Marine Department by Oct. 1. The court stated that it was not conversant with the methods of discipline followed in the U.S. Navy, but expressed the opinion that the authorities will agree that the bridge should not have been left solely in charge of a warrant officer, viz., the gunner, who was unacquainted with navigation problems, especially in strange pilotage waters, and who, prior to, and at the time of the grounding, was steering. Having no jurisdiction in the matter, the court submitted the comment for the information of the U.S. authorities.

### Stranding of s.s. Metagama.

Held at Montreal, Sept. 16, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. J. B. Henry and C. J. Stuart as nautical assessors, into the stranding of Canadian Pacific Ocean Services' s.s. Metagama in the Contrecoeur traverse, in the River St. Lawrence, while passing the s.s. Wisley at anchor, Sept. 12. The court found,

after hearing the very straightforward evidence given by all witnesses, that the pilot, W. Gauthier, in passing astern of the s.s. Wisley, followed the natural impulse and ordinary usage of taking the right hand side of the channel, thus avoiding crossing the bow of an anchored vessel when there was a possibility of fouling her cable, hence failing to recognize in time that he was taking a more limited space, and thus committed, in the court's opinion, an excusable error of judgment. The master of the s.s. Metagama, Capt. J. B. Turnbull, and his officers on duty, were exonerated from all glame, and pilot J. B. Angers and Capt. T. S. Bowen of the s.s. Wisley were also held blameless. The court could not criticize their action in anchoring at the place they did, but recommended to all pilots that whenever possible they should anchor in such a place where passing ships will be free from any apprehension as to which side would be the best to select. The evidence showed that all lights and aids to navigation were in order.

## St. John, N.B., Pilotage District Regulations.

A Dominion order in council was passed Aug. 25, confirming bylaws recommended by the Minister of Marine for the pilotage district of St. John, N.B., which is now under his control at pilotage authority. The limits of the pilotage district are Musquash Point light, bearing N.W. magnetic, Cape Spencer E. by N. magnetic, distance 8 miles from Partridge Island.

Pilotage dues are provided for allships not exempt under the Canadian Shipping Act, as follows:—

Steamships, inward and outward, $3 a foot draft; if a pilot is required to go down the Bay of Fundy, an additional $2.75 a foot draft with reasonable travelling expenses;

Sailing ships, inward $2 a foot draft, outward $1.50 foot draft; if a pilot is required to go down the Bay of Fundy, an additional $2 a foot draft, with reasonable travelling expenses;

If detention of ship at quarantine exceeds 3 hours, an additional $5 for the next 24 hours or fraction thereof;

If a pilot is required to go outside of the district, the Superintendent may issue a permit in writing, upon application, naming the pilot, and the ship to be piloted, and the ship engaging such a pilot shall pay in addition to the regular dues and reasonable travelling and other expenses;

Ships under 1,000 tons shall not be required to pay movage dues, but if a pilot be employed, $5 a move;

All ships of 1,000 and under 4,000 tons, movage dues, $10; 4,000 tons and over, $15;

Pilotage charges while compasses are adjusted, $10; trial trips, $15, and trial trips, where compasses are adjusted at the same time, $20, in addition to a charge for movage; if compass adjustment and trial trips are carried out beyond pilotage limits, and exceeding over 6 hours, $25, and an extra $10 for every additional 6 hours or part thereof.

Pilotage dues collected must be entered in a cash book provided by the Marine Department and deposited in an authorized bank, and receipts forwarded to the Marine Department's accountant, with a detailed statement of the dues collected. Pilotage dues must not be collected by pilots without authority.

Each pilot, under 70 years of age, at present holding a license, and in active service, shall be examined for eyesight and hearing, and on passing such examination, shall be granted a license, but no license shall be granted to any pilot of 70 years or over, and any such pilot shall be retired and his present license cancelled. Every person desiring to become an indentured apprentice pilot shall make application in his own writing, and shall be a British subject not less than 16 years old, with the rudiments of an English education and good moral character, and with a medical certificate of physical fitness; on approval he shall be indentured to serve on pilot boats for five years, after which he shall make ocean going voyages as an articled seaman, and shall produce certificates from the master of ships in which he sails as to his capabilities and character; he shall then appear for examination, and, if successful, a license may be issued to him to act as a pilot. Every person, not an apprentice, desiring to have examination for a pilot's license must apply in his own writing, enclosing a certificate as master of a British sea going vessel, or master in the coasting passenger trade of Canada, and certificate from last employer as to character and habits, and certificate of health from a satisfactory physician. Such applicants must be British subjects, not less than 30 and not more than 50 years old.

The board of examination shall be composed of the Superintendent of Pilots as chairman, an examiner of masters and mates, a member of the pilots' committee, and such other persons as the Minister of Marine may appoint.

When a licensed pilot attains the age of 65, if he is found competent to continue, he may be granted a new license for one year and from year to year so long as he is found competent, until he reaches 70, but such license shall be cancelled upon his failure to pass an examination at least twice in each year.

Temporary pilots may be appointed at a stated sum per day.

Provision is also made for the management of the superannuation fund, under the administration of the Minister of Marine, and penalties are provided for breaches of the bylaws by pilots.

## Ships Registered in Canada During June, 1920.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons register.

### STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|
| 141,761 | Canadian Observer* | Montreal | Collingwood, Ont. 1920 | 251.0 | 43.6 | 23.6 | 2410 | 1460 | 124 Sc. | Minister of Marine and Fisheries, Ottawa. |
| 141,729 | Canadian Prospector* | Vancouver, B.C. | Vancouver, B.C. 1920 | 400.0 | 52.4 | 28.8 | 5492 | 3380 | 266 Sc. | Minister of Marine and Fisheries, Ottawa. |
| 141,759 | Dougaldmac(1) | Montreal | Cleveland, O. 1881 | 344.9 | 36.6 | 18.4 | 1457 | 883 | 98 Sc. | Sincennes McNaughton Line, Ltd., Montreal. |
| 141,758 | John F. Morrow | " | Toledo, O. 1890 | 246.0 | 40.6 | 20.7 | 1850 | 1160 | 105 Sc. | George Hall Coal Co. of Canada, Ltd., Montreal. |
| 141,768 | Maplecourt(2) | " | Cleveland, O. 1894<br>Lauzon, Que. 1920 | 365.4 | 44.8 | 23.4 | 3388 | 2010 | 144 Sc. | Davie Shipbuilding & Repairing Co., Montreal. |
| 141,762 | Mapledene | " | Lauzon, Que. 1919 | 219.2 | 36.9 | 19.3 | 1445 | 876 | 92 Sc. | Davie Shipbuilding & Repairing Co., Montreal. |
| 141,803 | Margaret Coughlan* | Vancouver, B.C. | Vancouver, B.C. 1920 | 411.5 | 54.1 | 27.5 | 5704 | 3531 | 266½ Sc. | Canadian Western Steamships Ltd., Vancouver, B.C. |
| 141,757 | St. Lawrence | Montreal | Clayton, N.Y. 1884<br>Picton, Ont. 1915 | 154.2 | 26.0 | 7.2 | 275 | 95 | 34 Sc. | Kingston Navigation Co., Kingston, Ont. |
| 141,756 | Thousand Islander | " | Toledo, O. 1912 | 166.4 | 31.9 | 8.3 | 587 | 206 | 75 Sc. | Canada Steamship Lines, Ltd., Montreal. |
| 141,663 | Torontonian* | Toronto | Toronto 1920 | 251.0 | 43.6 | 20.7 | 2239 | 1349 | 1250 Sc. | Dominion Shipbuilding & Repair Co., Toronto. |
| 141,764 | W. J. Carter | Montreal | Milwaukee, Wis. 1886 | 122.0 | 27.8 | 9.6 | 317 | 170 | 36 Sc. | W. L. McDougald, Montreal. |

(1) Formerly Columbia. (2) Formerly Northwest. *Equipped with wireless.

### SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Tons Reg. | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141,692 | F. S. Burgoyne | Lunenburg, N.S. | Schr. | Mahone Bay, N.S. 1920 | 130.5 | 28.3 | 10.0 | 179 | 143 | Ernst Shipbuilding Co., Mahone Bay, N.S. |
| 141,624 | Frederick H. | Parrsboro, N.S. | " | Port Greville, N.S. 1920 | 148.0 | 34.5 | 12.3 | 466 | 426 | K. J. Cochrane, Port Greville, N.S. |
| 141,540 | J. C. 27 | New Westminster | Scow. | New Westminster, B.C. 1920 | 76.3 | 28.0 | 7.1 | 129 | 129 | J. Crane, New Westminster, B.C. |
| 141,641 | Olive Moore | Liverpool, N.S. | Schr. | Liverpool, N.S. 1920 | 120.0 | 25.8 | 11.6 | 190 | 158 | J. Moore, St. John's, Nfld. |
| 141,640 | W. H. Eastwood | La Have, N.S. | Schr. | Liverpool, N.S. 1919 | 153.8 | 27.0 | 12.4 | 400 | 357 | F. Gray, La Have, N.S. |

## Canal Statistics for August.

The Dominion Bureau of Statistics, Transportation Division, has issued the following particulars of traffic through canals during August:—The number of ships passing through all Canadian canals was 4,892, with a net tonnage of 1,928,260, an increase of 45,200 tons over Aug., 1919. Passengers carried were 81,567, against 90,770. Cargoes, 1,459,032 tons, against 1,224,110 in Aug., 1919. To these totals should be added the traffic through the U.S. locks at Sault Ste. Marie as follows:—Ships, 2,199, net tonnage 7,731,024; passengers, 9,832; cargoes, 12,019,693 tons.

Sault Ste. Marie Canal.—The total number of ships through both Canadian and U.S. locks was 2,915, net tonnage 8,446,022; cargoes, 12,425,372 tons, against 2,103 ships, 5,138,200 net tonnage; 6,609,961 tons cargoes in Aug., 1919. Through the Canadian lock.—Ships, 716; net tonnage, 715,583; passengers, 16,275; cargoes, 405,679 tons. There was a big increase in the down traffic through the Canadian and American locks over Aug., 1919. Total down, Aug., 1920, 9,279,286 tons; Aug., 1919, 6,609,961 tons. The increases were chiefly 4,056,827 tons of iron ore and 6,025,292 bush. of wheat.

For the season there has been 33,573,707 tons of iron ore against 29,407,053 tons down in 1919, an increase of 4,166,654 tons and 39,099,711 bush. of wheat against 56,106,225 bush. in 1919. The ore shipments in 1919 were affected by the strikes. The decrease in the wheat shipments is partially explained by an increase of 5,765,000 bush. by rail east from Fort William and Port Arthur to July 31 over last year. The August shipments by rail and the rail shipments through from the west are not yet available.

There was an increase in the up traffic of 1,617,909 tons, principally in soft coal. Soft coal up, Aug. 1920, 2,533,614 tons; Aug., 1919, 1,189,558 tons. The total soft coal shipments for the season are 5,376,364 tons, against 8,149,369 tons in 1919. The hard coal shipments for the season are 1,124,860 tons, against 1,148,176 tons in 1919.

There is one lock on the Canadian side of the river and four on the U.S. side, two of which are larger than the Canadian lock. The fourth lock was opened Sept., 1919. This explains the great difference in traffic through the Canadian and U.S. locks.

The total freight through the Welland Canal was 346,976 tons down, 22,744 tons up, total 369,720 tons, against 336,337 in Aug., 1919, and 362,626 in July, 1920. Compared with 1919 there were decreases in grain, oil and steel, but an increase of 126,770 tons in soft coal. For the season there has been a net decrease up and down of 95,926 tons, made up chiefly by decrease of 4,695,500 bush. of grain, 59,711 tons of oils, and 14,373 tons of steel, and an increase of 120,555 tons of soft coal. There was an increase of 39,202 tons of soft coal in August over July going down.

On the St. Lawrence Canals there was a decrease from July of 99 ship passages, but an increase of 3,666 passengers and 40,920 tons of freight. Compared with Aug., 1919, there was a decrease of 4,204 passengers and an increase of 87,731 tons of freight. The totals are, passengers up, 5,872; freight, 100,759 tons; down, passengers, 16,441, freight, 430,703 tons. Compared with Aug., 1919, there was a decrease down of 125,900 bush. of barley, 11,090 tons of oil, and an increase of 108,917 tons of soft coal. The coal shipments were: August 256,916 tons, July 232,995 tons, Aug., 1919, 147,999 tons. For the season there have been 543,500 tons of soft coal (mostly all down), against 579,840 tons in 1919.

Ottawa Canal.—241 ships, cargoes up 2,815 tons, down 37,257, total 40,072 tons, against 40,880 in Aug., 1919.

Chambly Canal.—280 ships, cargoes up, 40,646 tons; down, 18,009; total, 58,655 tons, against 39,963, Aug., 1919.

Trent Canal.—1,431 ships, cargoes up, 2,169 tons; down, 6,009 tons; total, 8,178 tons, against 10,205 tons, Aug., 1919.

Rideau Canal.—232 ships, cargoes up, 5,001 tons; down, 5,003 tons; total, 10,014 tons, against 17,109 tons, Aug., 1919.

Murray Canal.—200 ships, cargoes up, 24,088 tons; down, 757 tons; total, 24,845 tons, against 17,539 tons, Aug., 1919. There were 2,649 passengers, against 579 in Aug., 1919; this increase was due to excursions from off the Trent Canal.

St. Peters Canal.—184 ships, cargoes up, 1,221 tons; down, 7,956 tons; total, 9,177 tons, against 8,979 tons in Aug., 1919.

St. Andrews Canal.—31 ships, cargoes u, 1,229 tons, against 1,039 tons in Aug., 1919.

## St. John Dry Dock & Shipbuilding Co.'s Bonds.

A public offer was made recently of $884.276.50, St. John Dry Dock & Shipbuilding Co.'s 1st mortgage 5½% serial gold bonds, dated July 5, 1919, maturing serially from 1920 to 1954, interest payable half yearly, the yields ranging from 6 to 6.125%. Following are extracts from the prospectus:—"The St. John Dry Dock & Shipbuilding Co. Ltd., was organized to build, at St. John, N.B., a graving dock of the first class, together with a shipbuilding yard. The graving dock will accommodate ships of the largest size afloat, and will alone cost $5,500,000. In order to assist in the promotion and construction of this immense work the Dominion Government, under authority of The Dry Dock Subsidies Act, 1910, and The Dry Dock Amendment Act, 1917, provides a subsidy of $247,500 a year, payable half yearly. This subsidy is sufficient to meet the principal and interest on the total issue of bonds, amounting to $3,826,272.34, with interest at 5½%, of which the present issue is the first series. Work having progressed sufficiently, the company is entitled to draw a portion of this subsidy amounting to $28,599.43 half yearly. This subsidy has been absolutely assigned to the trustee, and is sufficient to meet interest and principal on bonds amounting to $884,276.50, which we are now offering and which are a part of the total authorized issue.

"The subsidy paid by the Dominion Government is irrevocable and assigned absolutely to the trustee, The Montreal Trust Co., to meet the interest and principal on these bonds, and this subsidy cannot be diverted, reduced, changed, or in any way dealt with, but is absolutely the property of the holders of these bonds. In addition, the bonds when issued are a first and only mortgage on all the company's works, plant and equipment. The following paragraph appears on the back of each bond: 'The Minister of Public Works of Canada has consented to the issue of the first series of the within bonds totalling $884,276.50, bearing interest at 5½% per annum, of which this bond is one, and has agreed to pay to Montreal Trust Co., trustee, for the benefit of the holders of the said bonds, $28,599.43 half yearly on each of the first days of January and July for 35 years hereafter, making in all 70 payments as a subsidy payable to St. John Dry Dock & Shipbuilding Co. Ltd., for work heretofore completed on its dry dock at Courtenay Bay, N.B., in respect to which this first series of bonds is issued.'

"This bond issue is purely a capitalization of a semi-annual subsidy which the Dominion of Canada covenants to pay, and therefore places this security practically on the same level as Victory Loan bonds. In the case of Victory Bonds, the Government pays interest and principal to the holders direct through the banks. In the case of the St. John Dry Dock & Shipbuilding Co., the Government pays interest and principal to the holder of the bonds through the trustee, The Montreal Trust Co., who in turn pay through the Royal Bank of Canada."

**Marine Public Works Contracts.**—The Dominion Public Works Department has awarded the following contracts:—Aug. 9, Frontenac Dredging Co., Toronto, dredging at Cobourg, and Kingston, Ont., above Cataraqui bridge and on harbor front, class B, at 50c. a cu. yd; Aug. 1, F. Cogle and H. Perryleake, Proctor, B. C., floating wharf at Kuskanook, B.C., $7,950; Aug. 21, C. S. Boone Dredging Co., Toronto, dredging at Oakville, Whitby and Bowmanville, Ont., class B, 65½c., 64½c. and 64c. a cu. yd., respectively; Aug. 23, A. Guigere, Shawinigan Falls, Que., repairs to landing pier, Pointe aux Trembles, Que., schedule of prices; Aug. 27, O. Poliquin, Portneuf, Que., repairs and reconstruction of public wharf, Ste. Famille, Que., schedule of prices; Aug. 28, Miramichi Dredging Co., dredging at Grande Anse, N.B., class B, 63½c. a cu. yd.

## Ships Added to and Deducted From the Canadian Register During June, 1920

| | Steam. | | | Sailing. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| Added. | No. | Gross. | Registered. | No. | Gross. | Reg'red |
| Built in Canada | 24 | 18,050 | 11,084 | 11 | 1,552 | 1,401 |
| Purchased from foreigners | 6 | 7,874 | 4,524 | .... | ..... | ..... |
| Transferred from British Possessions | 4 | 207 | 176 | .... | ..... | ..... |
| Totals | 34 | 26,131 | 15,784 | 11 | 1,552 | 1,401 |
| Deducted. | | | | | | |
| Wrecked or otherwise lost | 1 | 379 | 239 | 5 | 881 | 839 |
| Broken up or unfit for use | 6 | 147 | 101 | 8 | 743 | 712 |
| Transferred from British Possessions | 1 | 26 | 25 | 12 | 2,141 | 1,792 |
| New registers | .... | ..... | ..... | 5 | 236 | 225 |
| Other vessels | .... | ..... | ..... | 1 | 11 | 11 |
| Totals | 8 | 552 | 365 | 31 | 3,985 | 3,579 |

# Speeches on the Shipbuilding Industry, Cost of Operation of Steamships etc.

Canadian Railway and Marine World for September contained an account of the launching at Govan, Scotland, on Aug. 17, of the Canadian Pacific Ry.'s s.s. Empress of Canada, which is to be operated on the Pacific Ocean under the Canadian Pacific Ocean Services management. We have since received fuller reports of the speeches at the luncheon which followed the launching, and which are reproduced below, as they contain a large amount of valuable information in regard to the shipbuilding industry, cost of operation of steamships, etc.:—

R. A. Workman, Chairman, Fairfield Shipbuilding & Engineering Co., said that a wide conception and anxious thought by the owners had resulted in the largest liner yet built by the Fairfield Co. being launched that afternoon, a ship whose size was probably not exceeded by any other passenger ship at present building in Great Britain, and whose launching weight was about 12,000 tons. Her gross tonnage was expected to be about 22,000 tons, and her dimensions were 653 ft. length, 77¾ ft. breadth and depth to bridge deck 53½ ft., and her speed at sea 18 knots. She would carry a crew of 550, and would have accommodation for 500 first class passengers, 100 second class, and 240 third class, and in addition would be able to carry 930 Asiatic steerage passengers. The engines are two sets of Brown-Curtis turbines driving twin screws through double reduction gearing—the double reduction gearing being the largest which had so far been constructed. In every way the vessel is a credit to the skill and enterprise in design of Hugh Macdonald, naval architect to the C.P.O.S. Had the Chairman of the C.P.O.S. (G. M. Bosworth) been present, he would have reminded him of a conversation he had with him before the war, when they were discussing the uses of oil fuel. He admitted that the time would come when large passenger vessels would be driven by internal combustion engines, but not in their lifetime. The Empress of Canada would be fitted with boilers designed to burn oil fuel, which was a step superseding coal, and he was not so sure that the day was so very far distant when internal combustion engines would be fitted in ocean liners.

Commander Sir Thos. Fisher, R.N., General Manager, C.P.O.S., said Mr. Workman had referred to the expansion of the C.P.R.'s Pacific fleet. He thought it might interest some of those present to hear a little of its history. Almost coincident with the completion of the railway the C.P.R. chartered a sailing vessel which left Shanghai for Vancouver with a cargo of tea. He believed her name was the W. B. Flint; that was in 1886, and it was astonishing to think that in such a short time the service had developed to enable the company to build a steamer of the class of the Empress of Canada. He thought it spoke volumes for the enterprise and energy of the C. P.R. as to justify its building of the largest steamship at present being built in any British yard. The service developed a great deal after the W. B. Flint, for he believed the company chartered three steamships, the Batavia, Parthead, and Abyssinian. For some short time the service was run by these ships, and they then laid down three ships which were without equal, and one of these is still running, the famous Empress boats. These ships entered the service in 1891, and one of them, the Empress of Japan, is still running with the same boilers that she had when she was built, which, he thought, spoke volumes for British shipbuilding, and he only hoped the Empress of Canada would have an equally long and prosperous life. The service was continued for many years by these three ships. In 1906 it was found necessary to add a fourth ship, the Monteagle. Later it was decided by the directors, on the advice of G. M. Bosworth, who had been director for many years of the company's steamship interests, to lay down two other ships, and the Empress of Russia and Empress of Asia were built in that year, and they have proved themelves very successful. They are the finest ships on the Pacific, and they would only be excelled by the ship just launched. The Empress of Russia still held the record for the Pacific. She made the voyage across in 9 days 10½ hours, and he believed that record was not likely to be excelled by the Empress of Canada. The trans-Pacific route was of great interest to business men in Great Britain, because it afforded by far the most rapid means for reaching the far east. He understood under ordinary circumstances they could reach Yokohama in 28 days across Canada, thanks to the C.P.R.'s enterprise in putting on a trans-continental train. It was 28 days, against which it took 55 days to reach Yokohama via the Suez Canal and the eastern route.

One of the directors of the Fairfield Co. had said it was a pity that they were not building another ship similar to the Empress of Canada. He agreed and he was quite sure if the thing were at all possible the C.P.R. would lay down such a ship, but under present conditions it was absolutely unthinkable to lay down a ship of that class today. He had a few figures drawn out to show the difficulties under which shipowners and liner companies labored. The public generally did not realize how great those difficulties were. Some years before the war the Fairfield Co. built a fine steamship for the Atlantic trade. Her cost was £550,000. He believed the cost of the Empress of Canada would run into £1,700,000. That was a very serious difference, but it was still more serious looking at it from the point of view of maintenance than it was of capital. He estimated that to cover the difference between these two ships running in the North Atlantic — one built today and one built before the war—insurance, depreciation and interest on capital, would involve a charge on every voyage made across the Atlantic and back of £20,000. The difference between the pre-war and the present day ship running expenses were even more serious. Taking a ship of the type of the Calgarian, coal before the war was about £4,500, now it was £24,000. Repairs for a round voyage would be £1,700 and now it would be £7,700; provisions before the war were £3,000 and now they cost £8,000. Wages before the war were £2,500 and now they were £9,000. That was not the whole rise in wages. There was another allowance to be made, which was the accommodation taken from passengers for the greater comfort of the crew. In the Empress of France, a sister ship of the Calgarian, they had had to give up 266 berths from the earning power of the ship to hand them over for the well-being of the crew. Assuming those berths were only full on one-half of the voyage the ship made, it meant a further loss of £5,000. The net effect of these charges meant that the ship now built would cost £60,000 a round voyage more than a similar ship runing and built before the war. All that money had to be recovered from the passengers, because freight was infinitesimal in comparison with the passengers.

He had heard a great deal of grumbling about the high cost of trans-Atlantic travel at the present time. He said quite frankly that the cost was not half as high as it ought to be in relation to the expenses of the operations and the capital cost of shipping. The Calgarian type of ship passenger rates were today, he believed, first class, £50 10s.; second class before the war, £11, was now £28; third class before the war, £6 10s., now £19. He gave those figures with all reserve, but they gave a fair and general statement of the situation at the present time. The passenger rates had not increased by more than 180%, whereas the cost of operations, allowing the capital cost involved, had certainly not been less than 350%. That, honestly, was a position that could not be expected to continue for an indefinite period, and the result would be that a very large number of fast ships would necessarily be laid up. One might say, "Well, the shipowner could get it back by raising the fares." When they considered what it meant to pay £50 for a first class passage to get one berth in a three-berth room, the ordinary minimum rate of £50 to cross and £50 to come back and £28 for the second class, it was very serious, but it was far more serious to pay £19 for a steerage. He could not conceive anything astrous. He could not conceive anything worse than to charge these immense sums for a man and his family going to Canada or the United States £19 per person, and yet he had shown this was not sufficient. It meant in the first place that the communication between the different parts of the Empire would be seriously impeded, together with that good feeling that came of knowledge of other people. While the increase in the cost of ocean travel, if it was not stopped,would mean the disintegration of the Empire, it meant there must be fewer emigrants, and if there were fewer emigrants to Canada the tendency would be for them to cross the border rather than to go from the United Kingdom, which, he thought, would be a very disastrous thing for the Empire. Moreover, they could not be spared across the border, and he could not see how it could be filled up from the continent. There would not be sufficient labor to cultivate the fields for the population of Europe to be fed; therefore it seemed to him essential that shipbuilders and shipowners should adopt some means of getting back to less extravagant prices for ocean travel. It was essential for this country.

He was convinced that some economy could be effected in shipbuilding by better organization, and combinations which had been brought about recently in the shipbuilding world; by improved methods of standardization, and possibly by some reduction in profits. At any rate he commended to shipbuilders the necessity for reducing costs. For his own part he did not believe that any directors would lay down ships unless they knew what they were going to cost, and he thought the first thing was for shipbuilders to so stabilize the building that the

owners would know what it would cost. He believed the C.P.R. had adopted the most enlightened policy of any shipping company at the present time. By this policy they had a programme of two intermediate ships to be built at Clydebank and two passenger ships at Fairfield. Mr. Bosworth came over to Great Britain two years ago and sized up the position very carefully. He replaced an order for two first class ships with these other ships. The economies which could be effected in substituting a smaller class of ship for the costly ship they had launched that day was very great. The principal economy was in speed. Speed in ships was, without doubt, the most costly single item. They knocked four knots off an Atlantic liner and it meant 24 hours in getting to the other side, but the 16 knot ship was more economical than not travelling at all. That was the policy of the company as laid down by its Chairman, and he believed it was a very sound one.

Mention had been made by the chairman of the internal combustion engine. It had made immense strides, and he had no hesitation in saying that within five years they would be having a similar gathering to that one to celebrate the launching of a passenger liner driven by internal combustion engines. They halved the fuel bill by reducing to 16 knots, and they halved it again by the conversion from coal to oil fuel. He thought if they adopted these economies, a smaller ship, a slower one, and a ship driven by internal combustion engines, they would be able to get back nearer to the pre-war position, and he was quite sure the Fairfield Co. would be ready to co-operate to bring it about.

**The s.s. Empress of Britain.**

Subsequently, on board the re-conditioned s.s. Empress of Britain, on her trip from Glasgow to Liverpool, Sir Thos. Fisher proposed the health of the guests, and, in the course of his remarks, said there had been a great deal of work done on that ship and a very large sum of money had been expended. Four times the work had been done on that ship as on other ships which had been re-conditioned. Those who remembered the Empress of Britain in days past would no doubt have affectionate recollections of her comfort and seagoing qualities, but it could not be denied that she was hardly a first class ship, according to present day standards. So far as their ships were concerned they had become accustomed to a style of decoration altogether different to the ordinary ship. He felt they should not have been content to have a first class ship running if it was not up to their standard. An old ship had been made to look like new, and with a minimum expenditure of money. They had provided reasonable and economical accommodation in the third class, and the C.P.R. was the first of any line to introduce a proper system of spring mattress for their third class passengers, and doing away with the obsolete mattress full of straw and rubbish. The principal improvement brought about in that ship during the time she had been re-conditioned was the conversion from a coal burner to an oil burner. He was informed that when these ships were originally designed by the Fairfield Co. they were to be 50 ft. longer than at present, and the C.P.O.S. board wishing the boats to go to Montreal cut out this 50 ft. and that meant the stokehold was extremely cramped, and they, therefore, decided to convert her into an oil burner. They had had a trial on deep draft and she had done 19 knots with a horsepower of some 20,000, which his technical advisers informed him could easily be exceeded. He therefore looked forward with complete confidence to her doing a regular 18 knots across the Atlantic which, he thought, would be sufficient for all practical purposes. There was another novel feature, and that was a new system of boat davits which they had introduced. They were the invention of an Australian engineer who was seized with the idea that it was a good thing to save life at sea in the event of an accident. There were two and they would put boats into the water with a speed and certainty which was not approached by any other system of davits available. It was expensive, but it was the best they could find.

At the launching of the Empress of Canada it was not convenient for him to refer to the amount of business done by the C.P.O.S., but he was proud to do it on one of its own ships. Many of those present came from London, and they were under the impression that the C.P.O.S. was a picayune compared with the other big British lines. He could assure them that was a very big mistake. If they judged the importance by the passengers carried across the Atlantic, then this company stood second to none. Up to July 31 this year they had carried backwards and forwards no less than 100,000 people. The number of complaints was trifling, and such as they were, they related to the older ships which they had not yet had time to bring up to the standard they had set before themselves to attain. One hundred thousand passengers in the first seven months of this year. In the seven months they had landed in Canada actually more passengers than had ever been landed by any steamship organization, and of those passengers 99.1% were of British birth. They set out to carry Britons to the dominions overseas, to strengthen the Empire and ensure the food supply for this country. It was well known to all the steamship trade that the foundation of the business was the third class, and excluding the Mediterranean traffic, they had carried within 350 of the total carried by all the other British lines together. It might, perhaps, be said it was pure luck, but that was not so. The fact was, a great many ships had been leaving this country partially filled, and the fact that they had been able to carry this large number, almost a majority, was due to the great efficiency of their passenger department under Wm. Baird, and he took that opportunity of congratulating Mr. Baird. They had many interests represented on board the ship, including the Board of Trade, and he did not think it would have been possible to have installed the davits on board had it not been for the co-operation and assistance of the Board of Trade officials. It was quite an erroneous view to think that the work of the Board of Trade was destructive. It did its duty with a view to seeing that the ships were efficient and life was made secure at sea, and he was proud to testify that they had had nothing but assistance from the Board of Trade in introducing these davits.

**Sir E. Mackay Edgar**, one of the Fairfield Co.'s directors, said that Sir Thos. Fisher had referred to the cost of shipbuilding, and remarked that they should endeaver to persuade shipbuilders that they must bring down their costs in order to enable the owners to successfully operate the ships. He could assure Sir Thomas that their group of Fairfield shipbuilding yards endeavored every day to find means to make it possible to do this, and he could assure them that his associates were going to no end of expense, trouble, and energy to further the internal combustion engine for ship transport which, he was perfectly satisfield, was a solution of the future of the shipbuilding industry.

**Alex. M. Kennedy**, Managing Director of the Fairfield Co., said that the time occupied in building the Empress of Canada had been longer than anticipated, but they had been, and still were, passing through trying times. The position of the shipbuilding and engineering industry, after so many years of war, was not what they would like, nor was it what it should or could be. Advantage was not being taken of the splendid opportunities which the termination of hostilities made possible, and unless something was done to put a stop to the increase in the cost of production they might come very near to bringing ruin on their industry. Unfortunately there was a good deal of unrest in labor circles, but he believed this to be confined to a section of the workers only, and he had great hopes that before long the better side of the British working man would reassert itself and allow the industry to proceed on sound economic lines. The unrest to which he had referred was partly due to the war, but there were other disquieting influences at work, and government control had also been a contributing cause. He thought employers and employes were agreed on the last point. Recent indications on the part of labor to be freed from industrial arbitration courts and to be allowed to revert to the former method of adjusting differences direct with the employers, should help to put matters on a better footing. The workman was certainly worthy of his hire, and was entitled to a higher standard of living, and no employer would seek to deprive him of either, if only a corresponding return was assured in the way of production. Only by such means would economy be secured and more orders obtained. Shipowners, under present circumstances, were finding it hard to make ends meet, and they could not well afford to pay what builders required to keep their establishments going. The limitation of output was a fatal mistake and was bound to react on those who resorted to it. The effect of it was to increase the cost of everything. By pursuing such a policy, a condition of affairs might arise when there would be little or no work to put restrictions upon. Employers and employed were mutually dependent on each other and both were concerned in the future of the industry. Mutual trust and co-operation between the management and the men were the only sound principles by which true success could be obtained. The men must give of their very best and employers must see that every possible facility was provided to enable them to do so.

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**The Dominion Government steam yacht** Speedy II has been sold by the Marine Department to T. M. Kirkwood, Montreal, for $6,500. She was built at Leith, Scotland, in 1896, and is screw driven, by engine of 88 h.p. Her dimensions are,—length 115 ft., breadth 20.6 ft., depth 10.6 ft., tonnage 252 gross, 145 net.

**The C.G.S. Montcalm.**—We have been officially advised that the report that a contract for repairs to this ship, amounting to approximately $100,000, has been awarded to Canadian Vickers Ltd., is without foundation.

# The Dominion Shipbuilding and Repair Co's Affairs.

Osler Wade, F.C.A., interim liquidator, has made the following report on the affairs of the Dominion Shipbuilding & Repair Co. Ltd., Toronto, which went into liquidation on July 31.

Upon taking possession of the assets, I found the company had been operating upon three ships under contract, one for the Gulf Navigation Co. Inc., and two for the Dominion Marine Department. In addition to this, there was a small contract recently commenced, for a yacht for Geo. H. Gooderham, of Toronto, and two stock hulls, nos. 12 and 13, upon which also only a small amount of work had been done.

The contract with the Gulf Navigation Co. contained a penalty clause, providing for $1,000 a day upon default, and, on July 31, $46,000 of penalties had accrued and been deducted from payments on account. To complete this contract would have involved a loss of at least $60,000 to the ordinary creditors, apart from the question of further penalties, and to complete the contract with the Marine Department would have involved a loss of at least $200,000 to the ordinary creditors. This loss would have been taken out of dividends due to the unsecured creditors, for the benefit of another class of creditors, and, of necessity, the work was abandoned by the liquidator. The cash received on account of the Gulf Navigation Co. was secured by a mortgage on its ship and the material delivered and allocated to it. The owner, under power given it in its contract, is now proceeding with the completion of its ship at its own expense and under an arrangement approved of by the court. The moneys received from the Marine Department were not secured by a mortgage, but under the statutes and orders in council, the government claims ownership of the two ships and the material delivered and allocated to them. The liquidator has intimated to the Marine Department his willingness to co-operate, so that any loss sustained by the government may be reduced to the minimum, either by the liquidator continuing the work on a cost plus basis, or by permitting the government to proceed itself, all, on the understanding that the ownership of the ships and materials delivered and allocated as of July 31 is to be determined by the court. The parties interested under these two contracts may have considerable claims against the estate for damages, and this is reflected in the statement of affairs.

It will be some time before inventories of stores and material on hand are completed, and of necessity the figures reflected in the statement of affairs are taken from the costing records, but may be considered as approximately correct. The same remarks apply to the tools. No depreciation has been written off the original cost of machinery, plant and equipment and the company has never paid any dividends.

Provided the Government shops are completed at the estimates given in the statement of affairs, the contracts will represent a profit to the insolvent company of $182,000, being the difference between the monies received to date on account of same, and the charge for work done to July 31, plus the ranking liability of $237,000. This profit of $182,000 forms a part of the surplus in the statement of affairs.

Under a direction of the court, the liquidator attended at New York and interviewed Christoffer Hannevig regarding the question of his indebtedness, and as to any suggestions, or proposals, from him, regarding a settlement with the creditors and the re-opening of the plant. Mr. Hannevig informed the liquidator that he had purchased all the share capital in the Pusey Jones Co., of Wilmington, Del., for $6,000,000, which he paid in cash, and, that shortly afterwards the plant had been taken over by the United States Government; that during the interim he had not received any returns from the United States Government apart from advances of $5,000,000 for enlargements to the works, etc.; and that the U.S. Shipping Board had awarded him $2,000,000 as compensation over and above the $5,000,000 previous advanced. The whole question of this transaction is now the subject of litigation in U.S. courts, the government claiming a set off on the award of about $3,800,000. Mr. Hannevig claims to have considerable other interests, including sole ownership of Hannevig & Co., bankers, New York, N.Y., but that being tied up, he could do nothing regarding his account. Upon declaring his inability to attend this meeting and upon refusing to deliver up the monies on deposit in his bank, the court issued an order to commence proceedings for the recovery of the amounts. Mr. Hannevig stated that his reason for refusing to release the monies on deposit in his private bank was looking to the fact that he had guaranteed to the Equitable Trust Co. deliveries of steel, aggregating $110,000, and was holding the amount on deposit as a set-off against the guarantee. This excuse is remarkable, for the reason that this guarantee was arranged for the purpose of reducing Mr. Hannevig's indebtedness to the company, and the liquidation of this guarantee to the trust company on steel deliveries would have represented a total reduction of over $400,000 in his account since May 31 and left free for the purposes of the company the amount on deposit in his private bank.

In discussing an arrangement with creditors, Mr. Hannevig confined himself to reorganization on the basis of: (1) Canadian Government help for the erection of a dry dock to take care of the business on the Great Lakes. (2) Installation of paper making and pulp machinery to take care of the Canadian trade, covering which the Pusey Jones Co. held orders which he could turn over to Toronto, along with the necessary experts. (3) Discussed, as arguments in favor of reorganization, a large order to be placed by the French Government in Canada for building of some 60 ships, and orders to be placed by the Argentine Government. To these suggestions Mr. Hannevig had nothing to offer as support from his end, in the way of cash, not even the liquidation of his own account.

The immediate cause of this failure was insufficient liquid assets to retire the wage claims of some $106,000, but there were three factors which contributed to the company's failure, and if the directors' meeting is to consider the appointment of a committee to enquire into the question of reorganization, the following factors are worthy of consideration: (1) Insufficient capital. (2) Labor and management. (3) Inability to collect amounts due.

The capital invested in this business was $1,000,000, as compared with $1,600,000 invested in fixed assets for the plant, etc. It is quite obvious that, instead of having any working capital, the company has a liability to the extent of $600,000, or that the working capital was $600,000 less than nothing, making it necessary to rely upon loans and advance payments on contracts to conduct operations.

The labor and material costs per ton on hulls laid down to July 31 were as follows:—

| | Labor. | Material. |
|---|---|---|
| 1918 | $40 a ton. | $76 a ton. |
| 1919 | 49 a ton. | 116 a ton. |
| 1920 | 61 a ton. | 95 a ton. |

and on the last hull in 1920 the labor cost $73 a ton and material $94 a ton, the net result being that the last hull was laid down at a loss of $300, to which must be added penalties of $72,000, increasing the loss to $72,300.

The arrangements with labor at the time of closing down was for a 5-day week of 44 hours, with double time for Saturdays, and overtime. The management is to be congratulated for dropping ships in the water as rapidly as it did, but from the figures which are quoted it is quite apparent the policy of a closed shop has had its effect on labor costs, which were constantly increasing, while the cost of material has been decreasing since the peak last year. There may be considerable argument in favor of the closed shop theory, when conditions are universal, provided it is not in restraint of trade; but the shipbuilding industry, in so far as ocean traffic is concerned, is quite distinct from most other industrial enterprizes, for the reason that ships built at one point upon the globe, compete for freight traffic with ships built at any other point on the globe, the competition being exclusively in the charges made for carrying freight. Of necessity, the capital expenditure on ships built in any one market must be on a basis to compete with the capital expenditure of ships built in any other market. Therefore, if the shipbuilding industry in Canada is to succeed, the capital outlay in construction must be on a competitive basis with the capital outlay in construction in any other markets, or failing in this, a government subsidy to equalize any differences. Shipbuilding labor appears to have overlooked this factor in Canada and the result is going to be that if the condition is not faced by labor and by management, the industry cannot succeed and compete with ships built at a lesser cost at other points. This factor, and a survey of the plant by competent experts, regarding the question of sufficiency, adaptability, etc., should be considered in any re-organization.

Without making any provision for immediate payment to the ordinary creditors, it would require at least $500,000 or $600,000 to carry out a reorganization, one-half to retire the secured and preferred claims, and the balance for working capital. If this cannot be realized from the accounts receivable, then it might be by an issue of debentures sufficient to retire these secured claims, and the balance might be raised by an issue of preferred shares. These shares could be preferred in any distribution of assets among shareholders, and issued to control management, provided the present shareholders were considered to the extent of their equities, after making proper depreciation on the plant and etc. The ordinary creditors, apart from the Marine Department, might make

some arrangements for the payment of their debts, by taking a second issue of debentures, payable over a period of time, or, in the alternative, by taking an issue of debentures for a portion of their claims and preferred shares for the balance, the preferred shares to have the same privileges as would be offered to those investing cash in the business for preferred stock. If the industry is to be continued as a going concern, all parties must combine in a spirit of give and take, otherwise it may not be possible to arrive at a scheme that is reasonable enough to save a big loss, or a long delay in a tedious liquidation of the assets.

**Statement of Affairs.**

ASSETS.

| | | |
|---|---|---|
| Cash on hand | $ 1,069.20 | |
| Cash on deposit with Hannevig & Co., bankers | 12,462.27 | |
| | | $ 13,531.47 |
| Victory bonds (assigned to bank) | | 68,600.00 |
| Bills receivable | | 100,000.00 |
| Accounts receivable | | 533,874.48 |
| Stores and supplies on hand and assigned to bank under sec. 88 of Bank Act: | | |
| General supplies, estimated | 258,780.26 | |
| Work in progress (yacht) | 1,471.31 | |
| Work in progress (hulls 12 and 13) | 129,068.55 | |
| | | 389,320.12 |
| Office furniture and fittings at 50% | | 6,000.00 |
| Drafts, patterns and moulds | | 10,000.00 |
| Buildings on leasehold land (cost) | 532,624.24 | |
| Machinery (cost) | 317,907.45 | |
| Yard equipment (cost) | 615,026.99 | |
| Underground equipment (cost) | 104,591.28 | |
| | | 1,570,149.96 |
| Total assets | | $2,691,476.03 |

LIABILITIES.

| | | |
|---|---|---|
| Secured— | | |
| Bank | $158,805.22 | |
| Rent of leasehold | 15,300.00 | |
| H. W. Petrie & Co. lien | 5,299.33 | |
| Burroughs Adding Machine Co. lien | 250.00 | |
| Canadian General Electric Co. lien | 1,383.70 | |
| City of Toronto, taxes | 22,962.46 | |
| | | $204,000.71 |
| Preferred— | | |
| Workmen's compensation | $ 5,225.00 | |
| Dominion Government sale tax | 585.62 | |
| Wages | 106,252.32 | |
| | | 112,062.94 |
| Ordinary— | | |
| Creditors | $520,349.26 | |
| Gulf Navigation Co., estimated to rank for | 60,000.00 | |
| London Guarantee Co., on performance bond to Marine Department | 137,800.00 | |
| Marine Department, estimated to rank for | 100,000.00 | |
| | | 818,149.26 |
| Total liabilities | | $1,134,212.91 |
| Apparent surplus | | 1,557,263.12 |
| | | $2,691,476.03 |

Notes:— No provision has been made for government income or war profits tax. Wages have been paid on a liquidator's bond, charging all the assets as security. In preparing statement the liquidato rdoes not admit or dispute any liability. Authorized assignment dated July 31, 1920; winding up order issued Aug. 3, 1920.

Trader Steamship Co. Ltd. has been incorporated under the British Columbia Companies Act, with $25,000 authorized capital and office at Victoria, to purchase the s.s. Trader, owned formerly by the Gulf Steamship & Trading Co., Victoria, and to carry on a general lumber and steamship business. The s.s. Trader was built at Vancouver, in 1901, and is screw driven, by engine of 17 h.p. Her dimensions are,—length 101 ft., breadth 22.6 ft., depth 8.2 ft., tonnage 167 gross, 114 net.

The British Government control of shipping came to an end Aug. 31, when general licenses were issued, allowing all ships to proceed anywhere on and after Sept. 1.

## Additional Drydock for Esquimalt, B.C.

The Dominion Public Works Department has invited tenders up to Dec. 9 for the construction of a drydock in Skinner Cover, Esquimalt, B.C., a short distance from the present government drydock. It will have the following dimensions:— Length from outer caisson stop to head wall, 1,150 ft.; width of entrance, 125 ft. on sill, and 135 ft. at coping level; depth on sill at ordinary high water spring tides, 40 ft. The dock will have two inner sills located 400 ft. and 750 ft. from the entrance sill respectively. The outer and inner entrances will be closed by stop or floating caissons, two being provided.

The works to be performed by the contractor are as follows:—

Construction of a substantial cofferdam to enclose the area within which the works are to be built; the unwatering and keeping free from water of the enclosed area during the construction of the works.

Excavation, both earth and rock, over the area to be occupied by the dock, part of entrance pier and channel, the work to include excavation for pump well, drains, culverts, etc.

Dredging an entrance channel, or any other area, to a depth of 33 ft. below low water.

Construction of a dock complete, of concrete walls, provided with bollards and keel blocks, etc. Stairs are to be built in the walls of the dock, two at each end of the dock. Sixteen ladders are to be built of galvanized iron and placed on the side walls. Ladders shall also be placed in each sump.

Build two timber slides, to be built longitudinally with and at each end of the north side wall of the dock. The sliding faces shall be built of granite 18 in. thick.

Build a roadway, 50 ft. wide, on both sides of the dock and around the head.

Build elevator shaft and tunnels, furnish and install elevator and enclosed stairs. The elevator is to be of the drum type, with a capacity of 4,000 lb., or about 25 passengers.

Build landing wharf, 750 ft. long, to the west of the dock entrance, and a bulkhead, 100 ft. long, south of the entrance wall, to be built of timber cribs sheathed with reinforced concrete and filled with stone ballast, with a mass concrete superstructure.

Build a line of standard gauge railway track on each side of the dock, and along the landing wharf, to be laid with standard section, 80 lb. rails.

The contractor is to enclose the area within which the works are to be built, by a substantial cofferdam, and to unwater the site and keep it free from water during construction.

The floating caissons, all mechanical equipment, and the buildings required therefor, will form part of a separate contract.

The estimates for the year ending Mar. 31, 1921, passed at the Dominion Parliament's last session, contained an item, "New dry dock at Esquimalt, $500,000."

## Radio Direction Finding Station for St. John, N.B.

The Naval Service Department's Radiotelegraph Branch has received authority to install a radio direction finding station at the port of St. John, N.B., at an estimated cost of $25,000, to assist in the Bay of Fundy navigation, which, especially in winter, calls for great care by ship masters, and the installation will doubtless be of material assistance to them.

The station will be a duplicate of those which have proved so successful at Cape Race, Canso, and Halifax, which have a receiving range of from 500 to 600 miles and a transmitting range of 200 miles. The station will operate on a wave length of 800 meters, which is being reserved exclusively for direction finding operations. The call signal of the station when placed in operation will be V.A.R.

Tests are being made to secure a good site in the entrance to the harbor, and the station will be so arranged that ships may run up on the bearings until opposite the harbor entrance. Apparatus and materials are being assembled at St. John, and the station will be in operation in time for winter navigation.

## Grain Shipped from Fort William and Port Arthur During the Crop Year 1919-1920.

The following table, compiled by the Board of Grain Commissioners, shows the quantities of each kind of grain shipped from Fort William and Port Arthur, Ont., during the crop year 1919-1920, the ports at which they were unloaded, the quantities carried in Canadian and U.S. ships, and the quantities carried to Canadian and U.S. ports.

| | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. |
|---|---|---|---|---|---|
| To Canadian ports— | | | | | |
| Depot Harbor | 658,029-20 | ..... | ..... | ..... | ..... |
| Goderich | 9,352,622-10 | 3,038,761-00 | 348,551-44 | 81,882-08 | 120,282-29 |
| Midland | 9,038,522-10 | 2,707,634-29 | 1,912,611-32 | ..... | 675,484-52 |
| Montreal | 458,263-40 | 1,609,484-31 | 1,475,641-40 | 21,713-42 | 109,133-30 |
| Port Colborne | 19,183,544-20 | 216,556-02 | 766,405-01 | ..... | ..... |
| Port McNicoll | 29,549,167-20 | 2,713,200-14 | 1,540,091-12 | 72,822-32 | 109,427-01 |
| Tiffin | 11,196,424-30 | 730,344-11 | 24,440-03 | ..... | 54,349-07 |
| Total to Canadian ports | 79,436,573-30 | 11,015,981-19 | 6,067,741-36 | 176,418-26 | 1,068,677-07 |
| To U.S. ports— | | | | | |
| Buffalo | 300,442-40 | 4,960,937-28 | 417,162-46 | 196,409-0 | ..... |
| Chicago | 50,000-00 | 418,213-08 | 144,803-04 | 36,797-28 | ..... |
| Duluth-Superior | ..... | ..... | 40,612-19 | 323,434-23 | 121,421-27 |
| Port Huron | 1,016,943-50 | ..... | ..... | ..... | ..... |
| Toledo | ..... | ..... | ..... | ..... | 90,769-37 |
| Total to U.S. ports | 1,367,386-30 | 5,379,151-02 | 602,578-21 | 556,641-35 | 212,191-08 |
| Grand total | 80,803,960-00 | 16,395,132-21 | 6,670,320-09 | 733,060-05 | 1,280,868-15 |
| 495 cargoes in Canadian ships | 80,158,684-40 | 13,114,928-12 | 6,067,741-36 | 313,613-46 | 1,068,677-07 |
| 33 cargoes in U.S. ships | 645,275-20 | 3,280,204-09 | 602,578-21 | 419,446-15 | 212,191-08 |
| 528 cargoes | 80,803,960-00 | 16,395,132-21 | 6,670,320-09 | 733,060-05 | 1,280,868-15 |
| To Canadian ports | 79,436,573-30 | 11,015,981-19 | 6,067,741-36 | 176,418-26 | 1,068,677-07 |
| To U.S. ports | 1,367,386-30 | 5,379,151-02 | 602,578-21 | 556,641-35 | 212,191-08 |
| Total | 80,803,960-00 | 16,395,132-21 | 6,670,320-09 | 733,060-05 | 1,280,868-15 |

# Increases Authorised in Freight and Passenger Rates on Atlantic Coast, Gulf of Mexico and Great Lakes.

The United States Shipping Board gave the following decision, Aug. 24, on the application of water carriers, operating on the Atlantic coast, Gulf of Mexico and Great Lakes, for authority to increase rates:—This proceeding was instituted by the Board of its own motion, to determine the justness and reasonableness of certain proposed advances in the rates, fares and charges of water lines engaged in interstate commerce, on the Atlantic coast, Gulf of Mexico and Great Lakes. The tariffs and applications naming the rates, fares and charges in question were filed with the Board on and subsequent to Aug. 11, and were proposed to be made effective on Aug. 26, contemporaneously with the effective application of the rates, fares and charges approved by the Interstate Commerce Commission, as to rail and water traffic, in its ex parte docket 74 (See Canadian Railway and Marine World for September, pg. 478).

Sec. 18 of the Shipping Act of Sept. 7, 1916, imposed upon common carriers by water in interstate commerce, subject to the Board's jurisdiction, an obligation to give to the public and the Board 10 days notice of proposed advances. By the terms of the act such advances cannot become effective until their approval by the Board.

Prior to the expiration of the statutory period, following the receipt by the Board of the tariffs and applications here under consideration, protests against the operation of the same were lodged with the Board by shippers and commercial organizations. The Board thereupon directed that the tariffs then on file, together with those which thereafter might be filed, be suspended, and that all applications for permission to advance rates be consolidated. An order was so entered on Aug. 12, instituting a general investigation in the premises, and the matter was set down for hearing on Aug. 18. Commercial organizations, shippers, and the public were notified by telegraph, by mail, and through the press, of the time and place of the hearing, and all interested parties were given an opportunity to be fully heard. Notwithstanding the protests which had been filed with the Board in advance of the hearing, however, it developed at the hearing that there was no concerted opposition to a general increase in rates. Representatives of shippers stated frankly that they did not object to reasonable advances in rates, as they realized that carriers had been and were confronted with increases in the cost of operations, including labor, materials and other items; and they recognized the fact that in many, if not in most, instances, some increases should be made in the rates, in order that the carrier's revenues might be fairly remunerative. Most of the testimony on behalf of shippers was directed towards specific situations, which they conceived to be discriminatory, or detrimental to their respective interests. It will be recognized, of course, that howsoever important these matters may be to individual shippers, such evidence is not illuminative in determining whether or not the proposed advances in rates as a whole are reasonable and will yield a fair return, or more than a fair return, upon the value of the property of the carriers devoted to the public service.

**Atlantic Coast and Gulf Lines.** — The general advances proposed by the lines operating between Atlantic Coast and Gulf ports were as follows:

| | Freight. | Passenger. |
|---|---|---|
| Between ports on Atlantic Coast north of Norfolk, Virginia .. | 40% | 20% |
| Between Norfolk and New Orleans, La. . | 25% | 20% |
| Between New Orleans and the Mexican border . . | 35% | 20% |

These applicants seek to justify the proposed advances, on the ground that the present rates are not sufficiently remunerative, in view of the prevailing high operating costs, and that the rates should be advanced to enable them to earn a reasonable return upon the value of their property devoted to the public service. Inasmuch as the Board is not empowered to prescribe accounting rules and systems to be observed by the carriers subject to its jurisdiction, the financial and statistical data submitted in support of the proposed advances were in varied and dissimilar form, not susceptible of reduction to a common basis. It has, therefore, been necessary to consider such data by individual carriers rather than en bloc. The operating results reflected by these varied statistics are substantially identical, however, and may be illustrated by the following summaries:—

An examination of the exhibits and testimony submitted by the Merchants & Miners Transportation Co. shows that on June 30 the book value of its property devoted to the public service, including floating equipment, wharves, and other necessary terminal property, was $3,842,-419.56; that for the six months ended June 30 its total operating revenues were $3,021,971.31, and that its total operating expenses during the same period were $3,574,972.46, leaving an operating deficit for the six months of $553,001.15. After making allowances for miscellaneous income and expenses, this deficit was increased to $694,196.25. Figures submitted by this carrier showed an insured valuation of the above described property of more than $6,000,000.00, which it was stated represent only 80% of its actual value. The advances proposed by the Merchants & Miners Transportation Co., in addition to those allowed that carrier by the Interstate Commerce Commission, assuming that the volume of traffic to be handled by it does not diminish, were estimated to yield, for six months, increased revenues of $1,019,051.95, practically all of which it was anticipated will be absorbed by operating expenses. It was asserted that the Merchants & Miners Transportation Co.'s revenue requirements, as a matter of fact, necessitate a larger increase than that petitioned for, but that any greater increase would seriously disturb existing rate relationships and thereby retard the movement of traffic. The six months covered by the above statistics were represented as comprehending a period when the company was operating at maximum capacity; and it was stated that the volume of traffic handled at any other period would not be nearly so heavy. It was testified that the costs of operation resulting from increases in the cost of materials, fuel, supplies, labor and every other element of transportation, were abnormally heavy and that there was no present indication that they would decline to any great extent in the very near future.

Conditions governing the operations of other Atlantic coast and Gulf lines are substantially similar to those above set forth, except that at some ports not served by the Merchants & Miners Transportation Co. conditions are even more unfavorable. The record shows that for the period ended June 30, 1920, the Eastern Steamship Lines, Inc., sustained a loss of $539,831.07, and that for the year ended Dec. 31, 1919, the operating deficit of the Clyde Steamship Co. was $1,357,-953.00, and of the Mallory Steamship Co. $643,165.00. Applications and data submitted by certain carriers in respect of water line operations between New York, on the one hand, and the Canal Zone, the Virgin Islands and Porto Rico on the other hand, reflect the operating conditions shown above, including unprecedented costs and inadequate returns with resultant losses.

**Great Lakes Lines.**—The advances proposed by the Great Lakes carriers approximate 40% on freight and 20% on passenger traffic. It appears from the record that expenses incident to the operation of vessels on the Great Lakes have increased substantially to the same extent as on the Atlantic coast. For example, it was shown that the carriers are now paying for bunker coal approximately 100% more than they paid in 1919, and they claim to be receiving a poorer quality than was then available. These carriers also claim that they are paying 60% more for materials and supplies, and 40% more for labor, than they paid in 1919. A situation existing on the Great Lakes which does not confront the carriers operating on the Atlantic and Gulf coasts, is that the Great Lakes operations are seasonal, and during several months of the year some of the carriers are obliged to discontinue operations on account of weather conditions. During this non-operating period the overhead and fixed charges of the carriers remain fairly constant.

Some stress was laid by shippers upon the fact that the past performances of a few of the Great Lakes Lines had shown substantial returns on their property. It must be borne in mind, however, that we are dealing with present conditions, and, whatever those statistics may show for past years, they cannot be said to reflect the results of operations under the high costs and other unfavorable conditions existing at the present time. The book value of the terminal facilities and fleet operated by the Great Lakes Transit Corporation is $4,087,887.00, according to the record. For the six months ended June 30, its gross revenue was $1,077,295.00, and its operating expenses were $1,194,411.38, a deficit of $117,-116.38. It was claimed that the market value of the company's property is $10,-000,000. The Cleveland & Buffalo Transit Co. showed a net loss to June 30 of $193,115.89. The Goodrich Transit Co. sustained a net loss of $77,905.83, for the year ended June 30. These figures fairly represent the results attained by other Great Lakes carriers in the operation of their respective lines. There is ample evidence of record to support the claims of the Atlantic, Gulf, Great Lakes and territorial lines, regarding the increased costs of their operations, and their need for additional revenue; and the increases for which they have respectively applied will produce not more, and

in all probability less, than a reasonable return upon the value of their properties devoted to the public service.

**Port-to-Port and Proportional Rates.**—We are urged to allow the proposed advances to become effective on Aug. 26, contemporaneously with the increased rates authorized by the Interstate Commerce Commission in its ex parte docket 74 (58 ICC 220); this, it is claimed, being necessary to preserve proper rate relationships. If the instant increases should be denied, the carriers would, of course, be confronted with the unnatural and objectionable situation of having port-to-port rates which would be lower than their proportional water rates, between the same ports on traffic handled in connection with rail lines. It was also indicated that such a state of affairs would permit shippers so to handle their freight as to avail themselves of the preferential port-to-port rates, instead of paying the higher proportionel rates, thereby tending to deplete the revenues which should properly accrue to the carriers from through rail and water business. As against this situation it is shown that the cost of handling port-to-port traffic is generally in excess of the cost of handling through traffic.

**Shippers' Complaints.**—Some evidence was introduced by shippers tending to show that the lines in certain instances have not given to commercial organizations and to shippers sufficient notice of proposed embargoes, and that the carriers' equipment has been inadequate to handle the traffic offered. It is, of course, desirable that close co-operation be maintained between the carriers and the shippers, with a view, at all times, to acquainting the latter with the fact of proposed embargoes, as in this way only is it possible to prevent unnecessary movement of freight to wharves and terminals. It is also important that carriers shall exert every effort to provide a transportation service that will fully meet the needs of the shipping public. In this connection, representatives of several of the carriers expressed themselves as willing to improve their facilities, if it should hereafter develop that their financial condition will so warrant.

**Decision.**—After careful consideration of the applications, and supporting statements, and all the facts and evidence of record in the instant case, the Board concludes and decides that, to the extent hereinafter indicated, the advances proposed to be made have been shown to be just, reasonable and necessary. The rates, fares and charges of the water carriers operating in the sections involved may be increased as follows:

| | Freight. | Passenger. |
|---|---|---|
| Between Norfolk, Virginia and ports on the Atlantic cost north thereof . | 40% | 20% |
| Between Norfolk and New Orleans, Louisiana . | 25% | 20% |
| Between New Orleans and the Mexican border . . | 35% | 20% |
| Between ports on the Great Lakes . . | 40% | 20% |
| Between New York and the Canal Zone . . | 10% | 33 1/3% |
| Between New York and the Virgin Islands . . (No freight rates involved) | | 33 1/3% |
| Between New York and Porto Rico. . | 20% | 20% |

The increases authorized on freight traffic may be made applicable to weighing, lighterage, storage, floating, transfer, diversion, reconsignment, switching, and transit services; and the passenger fares increases authorized may be applied also to excess baggage.

On the Atlantic and Gulf Coasts the through rates between ports located in different coastal sections, which are made on a combination basis, should be increased by applying to each factor of the through rates its respective percentage.

Local or joint through rates between ports in one coastal section and ports in any other coastal sections should be increased 33 1/3%.

For rate making purposes, Norfolk, Virginia, will be considered in the Norfolk-North Atlantic section, to and from ports in said section; and in the Norfolk-New Orleans section, to and from ports within the latter section; New Orleans, Louisiana, will be considered in the Norfolk-New Orleans section to and from ports within said section and within the New Orleans-Mexican border section to and from ports within the latter section.

With regard to increases in terminal charges, Norfolk will be considered in the Norfolk-North Atlantic section, and New Orleans will be considered in the New Orleans-Mexican border section.

The increases in rates, fares and charges herein authorized may be made effective not later than Jan. 1, 1921, on one day notice to the public and the Board. An order will be entered accordingly.

The Quebec Steamship Co. was represented at the hearing by A. J. Outerbridge.

## New Marine Oil Engine.

A new type of marine engine has been introduced in Great Britain. The ordinary type of oil engine has a single piston in each cylinder, this piston compresses a mixture of air and oil vapor against the end of the cylinder and the consequent ignition forces the piston outward and thus provides the driving power of the engine. In this new type the ignition takes places between two pistons in one cylinder, forcing the pistons apart. Each piston is connected to the crankshaft—an arrangement which gives a very even-turning movement to the shaft. Other advantages are claimed, including a very marked saving in space, which is very important on board ship, and improved "scavenging" (clearing the products of combustion out of the cylinder). The design lends itself to the replacement of steam engines in ships without alterations of the shafts or propellers, as the double piston arrangement gives the low propeller speed of 110 revolutions a minute with an actual piston speed of 450 ft. a minute, equivalent to 900 ft. a minute in the ordinary type of oil engine. Two 1,000 h.p. engines of the new type are being built.

Canadian Defence Device. — London, Eng., cablegram, Sept. 13.—To H. A. Clift, a Canadian engineer, is given the credit for the construction of two "mystery towers," built to the order of the British Admiralty for defence purposes during the war, and one of which was towed yesterday from Shoreham to Portsmouth. It will be used there chiefly as a mark for navigation, but originally, it is said, it was one of 16 between which anti-submarine nets were to have been spread, and which were to be crowned with powerful searchlights. These towers are erected on ships of 10,000 tons each, but after being floated to their new positions, their air spaces will be filed with concrete and they will be allowed to settle on the bed of the ocean.

Germany will, it is said, after delivering up the ships required by the peace treaty, have a total of 501,910 tons, compared with 5,108,600 in August.

## Dockyard Foremen's Positions.

The Civil Service Commission gave notice recently that applications would be received from persons qualified to fill the positions of dockyard foremen at an initial salary of $2,400 a year, which will be increased, upon recommendation for efficient service, at the rate of $120 a year until a maximum of $2,760 has been reached. This initial salary will be supplemented by the bonus provided by law for the present fiscal year.

Duties.—Under direction of the Chief Engineer (Dockyard) to have charge of the work performed in the shops and yard of a government dockyard; to supervise construction of and repairs to ships; and to perform other related work as required.

Qualifications. — Education equivalent to high school graduation; either graduation in engineering from a school of applied science of recognized standing, with at least three years of experience in naval dockyard work, or a complete term of apprecenticeship with a large well established engineering firm and at least five years experience in charge of engineering, construction, and repairing ships in a dockyard; preferably training in naval work and procedure; thorough knowledge of hull and machinery construction and repairs, and the construction and repairs of yard equipment; ability to handle and direct men, and to organize and execute dockyard work; tact and good judgment.

Examination.—Subjects and weights as follows: education and experience, 3; oral interview, if necessary in the Commission's opinion, 2.

A list of eligibles will be established for vacancies in the above class throughout the Dominion, but the only vacancy required to be filled at present is that of Dockyard Foreman, Halifax Dockyard, N.S., Naval Service Department. In the case of this position, preference will be given to residents of Nova Scotia.

The U.S. Shipping Board has adopted a resolution providing, under the Merchant Marine Act, that steamship owners may be relieved from war and excess profits taxes under certain conditions; that all departments, bureaus, boards and commissions of the U.S. Government are directed to recognize the American Bureau of Shipping as their agency for classification of ships owned by such bureaus, and for such other purposes in connection therewith as are proper functions of a classification bureau; that in all cases the Board's approval of type and kind of ship shall be on condition that said ships shall be constructed in accordance with the American Bureau of Shipping's rules.

Canada Steamship Lines' s.s. T. P. Phalen, which was sunk near Iroquois Point in the St. Lawrence River during August, and which was abandoned to the underwriters, has been finally given up as a total loss. Of her cargo of 64,000 bushels of wheat about 22,000 bus. of dry grain were saved and a considerable quantity of wet wheat. The equipment and fittings have been removed as far as possible, and further attempts at saving the hull have been given up. It is stated that there was $200,000 insurance on the whole, $40,000 disbursement insurance and $7,500 trip freight insurance.

The name of the s.s. Captain Hemans, owned by A. Sutherland, Port Arthur, Ont., has been changed to A. B. Sutherland.

## Transportation Conventions in 1920

Oct. 5-7—Maintenance of Way Master Painters' Association, Detroit, Mich.
Oct. 11 to 15.—American Electric Railway Accountants Association, Atlantic City, N.J.
Oct. 11 to 15.—American Electric Railway Engineering Association, Atlantic City, N.J.
Oct. 11 to 15.—American Electric Railway Transportation and Traffic Association, Atlantic City, N.J.
Oct. 14, 15.—American Association of Passenger Traffic Officers, Chicago, Ill.
Oct. 19-21—American Railway Bridge and Building Association, Atlanta, Ga.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.
Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.
Canada Freight Association (Eastern lines)—G. C. Ransom, 909 Shaughnessy Bldg., Montreal.
Canadian Freight Association (Western Lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.
Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.
Niagara Frontier Summer Rate Committtee—James Morrison, Montreal.
Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.
Railway Association of Canada—C. P. Riddell, Montreal.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.
Transportation Club of Vancouver.—C. E. Blaney, Travelling Passenger Agent, Canadian Pacific Ocean Services Ltd., Vancouver, B.C.

The Robert Hicks Coal & Towing Co. Ltd. has been incorporated under the Dominion Companies Act with authorized capital of $25,000, and office at Cobourg, Ont., to deal in coal and other fuels, to own and operate ships, docks and wharves, and to engage in general towing, salvaging and wrecking.

Canadian Pacific Ocean Services' s.s. Metagama, inward bound from Liverpool, Eng., Sept. 12, grounded on a sandbank about 25 miles from Montreal during a heavy fog, and was released the following morning without any apparent damage. The majority of passengers had disembarked at Quebec.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Canadian Locomotive Co., Kingston, Ont., made a profit of $367,969.02 for the year ended June 30. Its highest profits were $892,976.33, in 1918-19, and the lowest $134,613.89, in 1914-15, the average from 1912-13 to 1919-20 being $492,698.51 a year. The annual report states that the strike of 1919 extended into 1920, completely cutting off production for the first three months, which, together with the great difficulty in securing materials owing to the strike and embargoes on U.S. railways, affected the company's output very materially. Sufficient contracts are on hand to keep the works going up to Jan. 1, 1921, before which time undoubtedly further contracts will be closed. The directors for this year are: F. G. Wallace, President; J. L. Whiting, K.C., Vice President; Aemilius Jarvis, Chairman of the Board; W. Casey, General Manager; Jas. Carruthers; M. J. Haney; W. Harty, Jr.; Robt. Hobson, W. Y. Soper.

**Flannery Bolt Co.**, Vanadium Building, Pittsburg, Pa., has issued a catalogue of the F.B.C. welded flexible staybolts, and tools for installation.

**Franklin Railway Supply Co. of Canada**, Transportation Building, Montreal, has issued Bulletin 975, describing and illustrating the locomotive booster.

**The Holden Co. Ltd.**, Montreal, railway supplies, etc., has appointed D. M. Brown, manager for Ontario, with office at 342 Adelaide St. West, Toronto.

**The Superheater Co.**, Transportation Building, Montreal, has issued a set of bulletins, dealing with stationary and marine superheaters, as follows:—Superheater on small locomotive; superheater for stationary power plants; advantages of the Elesco method of superheating; advantages of superheated steam; results from superheating a power plant on the Nickle Plate; fire tube marine superheaters, steamship Pearl Shell; marine pyrometers; higher superheated


# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

ADVERTISING RATES.

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c. per word.
Equipment for Sale advertisements, 4c. per word.
Allow five words where replies are to be sent to a box number. Minimum order—$1.
Rates under other headings and for display advertisements on application.

## FOR SALE

Three steam tugs and one stern wheeler, about September 1st, now plying on the Saskatchewan River, between The Pas and Sturgeon Landing.

S.s. "Minasin," length 60 ft., width 13.2 ft., registered tonnage, 26.16, n.h.p., 6, speed about 9 miles, screw propelled.

S.s. Sam Brisbin, screw propelled, length 47.5 ft., width 11 ft., n.h.p. 4.2, registered tonnage 7.48, speed about 7 miles.

S.s. Notin, screw propelled, length 48 ft., width 10 ft., registered tonnage 12.56, n.h.p. 4.13, speed 8 miles.

S.s. City of Prince Albert, stern wheeler, length 96 ft., width 20 ft., registered tonnage 88.92, n.h.p. 6.6, speed 8 miles an hour.

Any further information as to price, or further description, of these boats will be furnished on application to the Mandy Mining Company, G. R. Bancroft, Superintendent, The Pas, Manitoba.

## FOR SALE
### At a Bargain

Steam screw wood steamer of 64.73 registered tonnage.

Built in 1890 in New York. Length 115.8', breadth 23.9'.

Two covered decks and one awning deck. Compound engine 12½" x 24" x 17" of 150 I. H. P., built by Monterief McLay Company in 1890.

Horizontal Internal Marine Boiler, diameter 90", length 11'—3½", 115 pounds working pressure. Built by Robb Engineering Company in 1906.

Engine, shafting and pumps in good condition.

Boiler needs a few repairs. Last test 115 pounds—two years ago.

Hull not in best of condition.

Address all enquiries to the

Cape Breton Electric Co., Limited, Sydney, Nova Scotia.

## Position Vacant

Wanted for a small Electric Railway in the Canadian West, a manager with all-round knowledge of electric railway work. One who can handle employes and get on well with the public. Must furnish first class references as to character, habits, etc. Please address Cunningham & Company, Booth Building, Ottawa, stating salary and if services available about November 1st.

**It Pays**

to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better

**Results**

steam in marine power plants; marine superheaters.

**Whiting Corporation.** — The Whiting Foundry Equipment Co., of Harvey, Ill., and the American Foundry Equipment Co., of New York, N.Y., have been consolidated as Whiting Corporation, with authorized capital of $5,000,000. J. H. Whiting, President, Whiting Foundry Equipment Co., becomes Chairman of the Board, and V. E. Minich, President, American Foundry Equipment Co., Sand Mixing Machine Co., and Foundry Equipment Manufacturers Association, becomes President. As the lines of manufacture of the component companies do not overlap, it is the intention to maintain all present manufacturing facilities. The Whiting plant at Harvey will retain the manufacture of cranes, cupolas, hoists, tumbling mills, core ovens and all other items of the Whiting line, together with sand blast equipment and dust arresters. Sand cutting machines, charging trucks, core machines and steel flasks will comprise the bulk of work at the new American Co.'s plant at 2935 West 47th St., Chicago, under the direction of E. A. Rich, Jr. Moulding machines, jolts, flask specialties and pattern mounting materials will continue to be manufactured at the American Co.'s plant at York, Pa., in charge of R. S. Buch. The plans include maintaining and enlarging the present offices of the American Foundry Equipment Co., 366 Madison Ave., New York, as the eastern sales and export office of the combined lines.

**Wilt Twist Drill Co. of Canada,** Walkerville, Ont., has published an elaborate catalogue of drills, reamers. and cutters, giving descriptions of the different styles and types, with suggestions for their proper uses.


# Taylor & Arnold Engineering Company, Ltd.

AGENTS FOR

Farnley Stay-Bolt Iron
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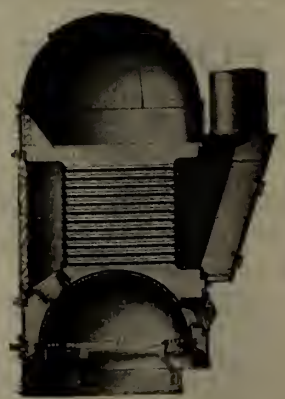
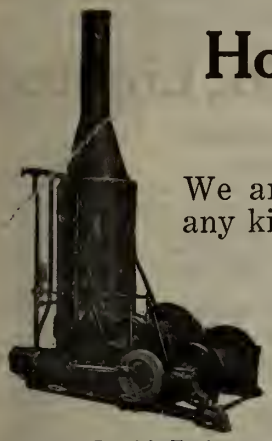
**Loveridge Marine Equipment.**
**Frameless Wooden Ship Construction.**
**Fleming & Ferguson, Ltd., Dredgers**
**Cochran Boilers.**

**FOR SALE — Twin Screw Steel Tug, 500 H.P., with Passenger Accommodation, $100,000.**

**Single Screw Wood Tug, 200 H.P., $17,000.**



**The Cochran Donkey Boiler, Coal or Oil Fired.**



Standard Derrick Engine, made in 7 sizes, from 10 to 50 Horse Power.

# Hoisting Machinery

**Built to Suit You and Your Work**

We are prepared to supply you with any kind of a Hoist you need, large or small, up to 50 H.P., and specially designed, if necessary, for your particular work, whatever that work may be.

*We also make:*

**Derricks** **Stone Skips**
**Steel Buckets** **Boilers**
**Travelling Derricks** **Hand Winches**

## Rail Laying Cars

Specially made for the quick laying of rails. A labor-saving tool that soon pays for itself. Strongly made to withstand hard usage.

*We make many other types of cars of interest to Railway Builders.*

*Let us tender on your next order.*

**MARSH ENGINEERING WORKS, LIMITED** Established 1846 **Belleville, Ontario**

**General Sales Agents: MUSSENS LIMITED, Montreal, Winnipeg and Vancouver**

# CARTER'S

## Satisfactory Hull Protection at Little Cost

Carter's Genuine Dry Red Lead furnishes genuine and lasting protection for steel and wooden ship bottoms. Its preservative properties make up for defects which are sometimes present in the wood or metal of the hull itself.

Carter's is the one Dry Lead to use for the first coat of paint. Mixed with pure Linseed Oil it has great covering capacity.

Get our prices. We also make Carter's Genuine Dry White Lead, Genuine Orange Lead and Litharge.

**The CARTER WHITE LEAD Co., of Canada, Limited, 91 Delorimier Ave., Montreal**

# Midland Shipbuilding Company, Limited

JAMES WILKINSON, Manager

Builders of STEEL TUGS, SCOWS and DREDGE HULLS

Special Attention Given to all Kinds of Hull Repairing.

Steel and Wood Plant Operated by Hydro Electric Power. Always Ready.

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**Night Telephone 254 and 348.**

**Midland, Ont.**

## General Railway Signal Company of Canada, Limited

**Consulting Railway Operating Engineers**

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ENGINEERS—CONSTRUCTORS.
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REPORTS, DESIGN AND CONSTRUCTION
Complete Railway Shop and Terminal Properties—
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OUR EXPERIENCE COVERS THIRTY-FIVE PLANTS
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*Railway Contractor*
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**Chemists and Metallurgists**

Expert examination and tests of all steel and metal products; Bridges, Buildings, Cement; Electrical and Mechanical Plant Equipment; Rails and Fastenings; Cars; Locomotives; Pipe; Castings; Forgings; Lumber; Paving Materials.

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in Quality, Finish and Service is built into each and every tool

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Gear, Plain Milling, Side Milling, Step Stocking CUTTERS, Metal, Slitting and Screw Slotting Saws, Slitting Discs.

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**Rock Island, Que.**

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LIMITED
LEVIS QUEBEC
SPECIAL ATTENTION TO RECONSTRUCTION WORK AND REPAIRS OF ALL KINDS TO STEEL HULLS, ENGINES AND MACHINERY. EQUIPPED WITH MARINE RAILWAY.

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ECONOMICAL—SYSTEMS OF MERIT—WILL NOT FREEZE
Vapor Systems, Pressure Systems, Vapor and Pressure Systems, Hot Water Systems, Electric Systems
Automatic Heat Control for all Systems—Ventilators
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**DOMINION TOWING & WRECKING CO., LIMITED**
Tug Strathmore
" Strathbell
**Harbour Tug Service**
Lighter Strathbuoy—Capacity, 700 tons.
Equipped for all kinds of Towing, Wrecking, Etc.
Sand and Gravel supplied for Concrete Work, Rock and Soil Filling for Cribwork.
Dock Telephone, South 184; Head Office, South 2383. JOHN BELL, General Manager, 509 Grain Exchange, Fort William, Ont.

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Carpet.
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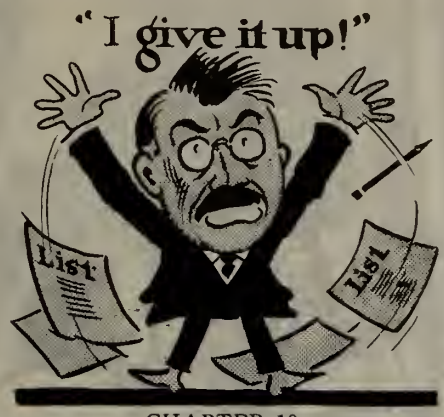
Car movers.
Cars, passenger, sleeping, freight, etc.
Cars, hand and push.
" dump.
Castings (brass, grey iron, malleable and steel).
Cement.
Chain.
Charcoal.
Cotton.
Coal.
Coke.
Couplers and parts.
Cranes.
Culverts.
Curtains.
Ditchers.
Door checks.
Drills of various kinds.
Drugs and disinfectants.
Dynamite.
Dynamos.
Emery wheels.
" powder and paper.
Fence posts.
Fencing.
Ferrules.
Files.
Fire brick and clay.
" extinguishers.
Forges.
Foundry supplies.
Furniture.
Fusees.
Gaskets.
Gauges.
Generators.
Grain doors.
Grindstones.
Gasoline engines.
Hammers.
Headlights.
Hose and rubber goods.
Injectors.
Interlocking and signal apparatus.
Iron (bars).
" (staybolt).
" (pig).
Jacks.
Journal boxes.
" bearings.
Ladders.
Lamps.




CHAPTER 10.

## WHAT CANADIAN RAILWAYS BUY

An industrious man of an inquiring mind once set himself to the task of making a tabulated list of the different things that a Canadian steam railway purchasing agent has to buy.

When he got to the sixty thousandeth item he gave it up, feeling that he had made only a beginning!

Just glance down the list of groups of things the R. P. A. has to buy and let your imagination conjure up, if it can, some few things that he does **not** have to buy!

**Question:** What is the right way to sell to a Canadian railway?

**Answer:** Give information, information and yet more information.

**Question:** Yes, but to whom?

**Answer:** To everybody, from the section foreman up to the President.

**Question:** How?

**Answer:** By descriptive, information-giving advertising, carried on unceasingly, in

### Canadian Railway and Marine World

Tell only one story at a time, for two reasons:

First, because the human mind, however highly trained, finds it difficult to grasp and hold more than one concept at a time.

Second, so that your ads may be clipped by officials interested and filed or pasted in books under their proper classifications.

But, by all means, tell the truth; tell it simply, without abusing your competitors, and keep on telling your business stories, one by one, knowing that the men you are most eager to reach are the very men who will be most eager to read and preserve every item that will make them better posted men in this field of work.

**CANADIAN RAILWAY AND MARINE WORLD**
**Toronto** **Canada**

Lamp burners.
Leather.
Locks.
Locomotive and parts.
Lumber.
Lubricators.
Machine tools.
Motors.
Nails.
Nuts (iron and steel).
Oil storage equipment.
Oils (various kinds).
Packings.
Paints.
Paper "
Photo supplies.
Patterns.
Picks.
Pile drivers.
Pipe
" fittings.
" covering.
Plaster.
Pulleys.
Punches.
Pumps.
Putty.
Radiators.
Rails.
Rail braces.
Reamers.
Rivets.
Roofing.
Rope.
Sand.
Salt.
Saws.
Seals.
Screws.
Shafting.
Shovels.
Snow ploughs.
Spikes.
Springs.
Stationery.
Staybolts.
Steam shovels.
Steel and iron sheets and plate.
Spring steel.
Tool steel.
Structural steel.
Stocks and dies.
Stoves.
Stove pipe.
Superheaters.
Switches.
Tanks.
Telegraph and electrical supplies.
Tinware.
Tie plates.
Ties.
Tin plate.
Tires.
Torches.
Torpedoes.
Track tools.
" drills.
Transfer tables.
Turntables.
Trucks.
Tubes and tubing.
Tube expanders.
Typewriters.
Upholsterers' supplies.
Uniforms.
Valves.
Vises.
Washers.
Waste.
Weeders.
Wheels.
Wire (various kinds).
Wrenches.
Welding material.

ILL
AST AD.

# Hose Which Resists Wear

WE have records of Goodyear Air Drill Hose giving from 18 months' to 2 years' service--though the life of most air drill and pneumatic tool hose is comparatively short.

Dragged over rocks and steel girders, beaten by ore and building materials, the cover on air drill or pneumatic tool hose is greatly responsible for the life of the hose.

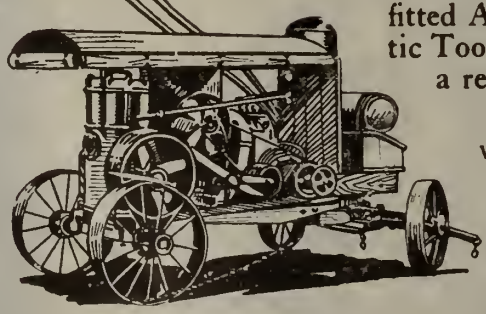
The extra heavy cover of white rubber, tough as a tire tread, with which Goodyear has fitted Air Drill and Pneumatic Tool Hose resists wear to a remarkable degree.

Inside this hard-wearing cover is a special, oil-resisting inner tube, and a fabric of such strength that Goodyear Hose is very much lighter than ordinary hose of the same strength.

In the same painstaking way, Goodyear has solved each individual hose problem—whether for steam, water, air, acids, or other substances. The creation of hose which would successfully withstand the strain of *present* industrial conditions was the task Goodyear scientists faced and solved. The hose problems in your plant can be greatly reduced with the help of Goodyear data and a Goodyear trained man. This service is without charge. Just phone, wire or write the nearest branch or Goodyear Mechanical Goods Service Station.

**The Goodyear Tire & Rubber Co. of Canada, Limited**

*Branches—Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver.*



GOODYEAR

MADE IN CANADA

INDUSTRIAL HOSE

# A Simple Way to Cut the Cost of Traveling Salesmen

The salesmen who are compelled to fertilize, plough, sow, harrow and cultivate their fields, cannot compete with the salesmen who spend the bulk of their time harvesting.

To keep a good salesman on the road today, costs more than ever before, and to deprive him of the advantage of Business Paper advertising is equivalent to demanding that he walk from city to city to save car fare. It's a net loss in either case.

There is a Business Paper in each field of trade and industry which can do the preparatory work of cultivation more quickly, and at less cost than salesmen, thus multiplying the efficiency of the salesmen by permitting them to confine their efforts to harvesting.

There is no guesswork or theory about this—thousands of concerns are daily demonstrating its truth.

Business Paper advertising calls on the real buyers in your field and **your field only.** It is assured of an audience because it is contained in a paper edited wholly in the buyer's interest, which he needs, wants and pays for.

You who have discovered the benefits of specialization in production and in personal selling, need no argument to appreciate the opportunity for Specialized Advertising afforded by Business Papers.

**What "A B P" Means to Advertisers**

Only papers subscribing to the A B P Standards of Practice are admitted to membership. These standards are unsurpassed in any field and cover every department of publishing in addition to certified circulation.

**A National Information Bureau**

Furnishing accurate data on papers, fields covered and general advertising counsel. No interest in sale of space. Sole purpose to help assure results. No charge or obligation. Your inquiries welcome.

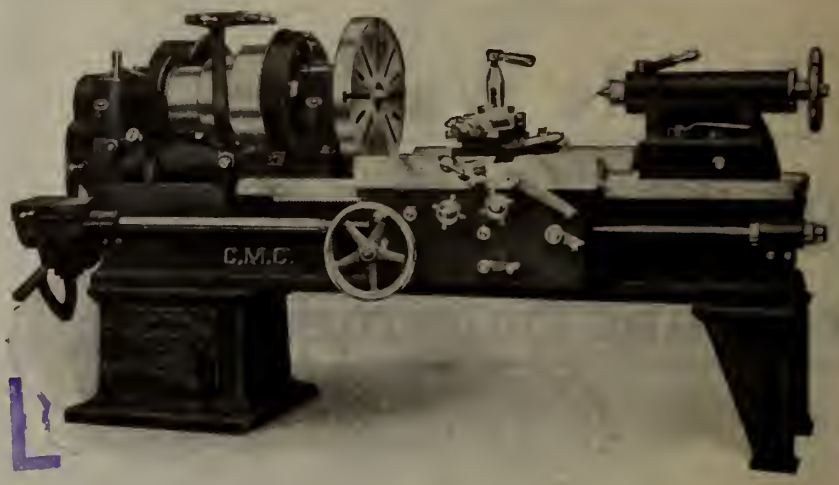
## THE ASSOCIATED BUSINESS PAPERS, Inc.

*The National Association of Trade and Technical Papers*

**Headquarters, 220 W. 42nd Street, New York**

C.M.C.

# LATHES




Engine lathes
14" to 42" Swing

KILL
LAST AD.

*WE MANUFACTURE A FULL LINE*—Engine lathes with quick change gears and double back gears, triple geared to face plate drive lathes, gap lathes with quick change or plain change gears, face lathes, break lathes, extension bed lathes, etc.

**CANADA MACHINERY CORPORATION, GALT, ONTARIO**
LIMITED
Toronto Office and Warerooms, Brock Avenue Subway.

**MINER**
**FRICTION DRAFT GEAR**

CLASS
A-18-S

THE
PERFECT
DRAFT GEAR

**MINER**
**BALANCED**
**SIDE BEARING**

SAVES RAILS
WHEELS
AND COAL

**CANUCK SUPPLY CO., LTD.**
MONTREAL

W. H. MINER
CHICAGO

View of Whiting Locomotive Hoist in operation, removing one pair of wheels.

# *Remove all Drivers or only one pair as desired*

The Whiting Locomotive Hoist can be used with equal advantage to renew one pair of drivers for minor repairs or all of them for a complete change of wheels.

It handles all types of engines in a fraction of the time required by a drop pit and without the risk. Absolutely safe.

Let us send you our illustrated railroad book containing full description of this time- and labor-saving hoist.

*Ask for Catalog No. 145*

**WHITING FOUNDRY EQUIPMENT CO.**

**Harvey (Chicago Suburb), ILL.**

Built under U.S. Patents 1085734 and 1314557.
We are sole owners of these patents.

**Coach Hoists — Transfer Tables — Turntable Tractors**

# WHITING

**CRANES OF ALL TYPES / FOUNDRIES EQUIPPED COMPLETE**

# $95 an Hour!

"Every hour I spent on my I. C. S. Course has been worth $95 to me! My position, my $5,000 a year income, my home, my family's happiness—I owe it all to my spare time training with the International Correspondence Schools!"

Every mail brings letters from some of the two million I. C. S. students telling of promotions or increases in salary as the rewards of spare time study.

What are you doing with the hours after supper? Can you afford to let them slip by unimproved when you can easily make them mean so much? One hour a day spent with the I. C. S. will prepare you for the position you want in the work you like best.

Yes, it will! Two million have proved it. For 29 years men in offices, stores, shops, factories, mines, railroads—in every line of technical and commercial work—have been winning promotion and increased salaries through the I. C. S. More than 110,000 men and women are getting ready *right now* with I. C. S. help for the bigger jobs ahead.

**Your Chance Is Here!**

No matter where you live, the I. C. S. will come to you. No matter what your handicaps, or how small your means, we have a plan to meet your circumstances. No matter how limited your previous education, the simply written, wonderfully illustrated I. C. S. textbooks make it easy to learn. No matter what career you may choose, some one of the 280 I. C. S. Courses will surely suit your needs.

When everything has been made easy for you—when one hour a day spent with the I. C. S. in the quiet of your own home will bring you a bigger income, more comforts, more pleasures, all that success means—can you let another single priceless hour of spare time go to waste? Make your start right now! This is all we ask: Without cost, without obligating yourself in any way, put it up to us to prove how we can help you. Just mark and mail this coupon.

TEAR OUT HERE

**INTERNATIONAL CORRESPONDENCE SCHOOLS**

Dept. 8417, 745 St. Catherine St., W., Montreal, Canada

Explain, without obligating me, how I can qualify for the position, or in the subject, before which I mark X.

| | |
|---|---|
| ☐ LOCOMOTIVE ENGINEER | ☐ BUSINESS MANAGEMENT |
| ☐ Locomotive Fireman | ☐ Private Secretary |
| ☐ Traveling Engineer | ☐ TRAFFIC MANAGER |
| ☐ Traveling Fireman | ☐ BOOKKEEPER |
| ☐ Air Brake Inspector | ☐ R. R. Agency Accounting |
| ☐ Air Brake Repairman | ☐ R. R. Gen'l Office Acc'ting |
| ☐ Round House Foreman | ☐ Higher Accounting |
| ☐ Trainmen and Carmen | ☐ Stenographer and Typist |
| ☐ Railway Conductor | ☐ Mathematics |
| ☐ MECHANICAL ENGINEER | ☐ SALESMANSHIP |
| ☐ Mechanical Draftsman | ☐ ADVERTISING |
| ☐ Toolmaker | ☐ ELECTRICAL ENGINEER |
| ☐ Machine Shop Practice | ☐ Electrician |
| ☐ Boiler Maker or Designer | ☐ Electric Wiring |
| ☐ Stationary Engineer | ☐ Electric Lighting |
| ☐ Marine Engineer | ☐ Electric Railways |
| ☐ Gas Engine Operating | ☐ Telegraph Engineer |
| ☐ CIVIL ENGINEER | ☐ Telephone Work |
| ☐ Surveying and Mapping | ☐ MINE FOREMAN OR ENG'R |
| ☐ R. R. Constructing | ☐ CHEMIST |
| ☐ Bridge Engineer | ☐ Metallurgist or Prospector |
| ☐ ARCHITECT | ☐ AUTOMOBILE OPERATING |
| ☐ Architectural Draftsman | ☐ Auto Repairing |
| ☐ Contractor and Builder | ☐ Good English ☐ Spanish |
| ☐ Structural Engineer | ☐ AGRICULTURE ☐ French |
| ☐ Concrete Builder | ☐ Poultry Raising ☐ Italian |

Name_____

Occupation & Employer_____ 7-26-19

Street and No._____

City_____ Prov._____

# RAILWAY EQUIPMENT

Locomotive and Car Castings

Cast Steel Couplers

(Type "D" and "Penn.")

Cast Steel Truck Bolsters and Side Frames

Tender Truck and Car Axles

Forging Billets

Car Plates

# MARINE EQUIPMENT

Stern and Rudder Frames

Marine Engine and Deck Castings

## DOMINION FOUNDRIES AND STEEL, Limited

**Hamilton - Canada**

"MEAD-MORRISON"

CANADIAN MM ©

## *Electric Car Puller*

Don't wait for the switching locomotive or a gang of men.

The CAR PULLER requires only ONE MAN.

**CAPACITY**

**5000 lbs. at 20 feet a minute**
**2000 lbs. at 55 feet a minute**

***Entirely Weather Proof***

AGENTS:

| | |
|---|---|
| Harvard Turnbull & Co. - - - | Toronto |
| Kelly Powell Ltd. - - - | Winnipeg |
| Robert Hamilton - - - | Vancouver |

CANADIAN MEAD-MORRISON CO LIMITED
285 BEAVER HALL HILL MONTREAL
WORKS WELLAND ONT.

# The Collingwood Shipbuilding Co.

**Limited**

COLLINGWOOD—ONTARIO and KINGSTON—ONTARIO—CANADA

**Steel Ships, Engines, Boilers, Castings, and Forgings**

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK

S.S. CANADIAN WARRIOR

Two Dry Docks
and
Shops
EQUIPPED TO
OPERATE
Day or Night
on
Repairs

# McAvity

BRASS AND IRON PRODUCTS

## "WORLD" BRASS VALVES

A worthy product of one of the great engineering plants in Canada.

The workmanship is of the high order that has made the name "McAvity" synonomous with absolute reliability, in the engineering world.

ANGLE VALVE

**T. McAVITY & SONS, LIMITED**

St. John, N. B.

WINNIPEG, MONTREAL, VANCOUVER, TORONTO.

GLOBE VALVE

*Made in Canada*

# Way Out on the Hand Holds

KILL LAST AD.

Yes—You have swung way out on the hand holds when a boiler flue "let go" and filled the cab with scalding water and steam. You were lucky if you got out there quickly enough.

But the Franklin Butterfly Firedoor makes the cab itself safe in such a case.

It shuts automatically when the fireman's foot turns away from the pedal and it shuts instantly—sending the scalding water down on the fire.

Franklin Railway Supply Co. of Canada
Limited

Transportation Bldg. - Montreal

GRAND TRUNK RAILWAY SYSTEM

# Hunt This Fall in Real Haunts of Red Deer

## THE HIGHLANDS OF ONTARIO

Maganatewan River, French River, Muskoka, Georgian Bay, Lake of Bays, Timagami and other Famous Regions.

## OPEN SEASONS

Moose, Deer, Reindeer or Caribou
Nov. 5th to Nov. 20th, both days inclusive.

In some of the Northern Districts of Ontario, including Timagami, the open season is from October 25th to November 30th, both days inclusive.

*Write to any Agent, Grand Trunk System, for full information, or to:—*

**E. C. ELLIOTT,**
**District Passenger Agent,**
**Montreal, Que.**

**C. E. HORNING,**
**District Passenger Agent,**
**Toronto, Ont.**

# Robb Engineering Works, Limited

40" Stroke Engine Built for Imperial Munitions Board.

BUILDERS OF

Marine Engines
Scotch Boilers
Water Tube Boilers
Lighting Sets

**Works - Amherst, N. S.**

**Montreal Office, 16 Cathcart Street**

THERMIT WELDING

Testimonial No. 10,004.

**from the Kansas City Southern Railway Pittsburgh, Kans.**

The illustration shows a Mallet engine of the Kansas City Southern Railway, Pittsburgh, Kans., on which two frame crossties were Thermit welded to their side frames, requiring 16 welds. This engine has been in service for about one year and is giving no trouble. Previous to using Thermit for this class of work, it was found impossible to hold the crossties tight to the frame by bolts. It is now their practice to weld all crossties with Thermit.

Send for Pamphlet No. 2144.

THERMIT

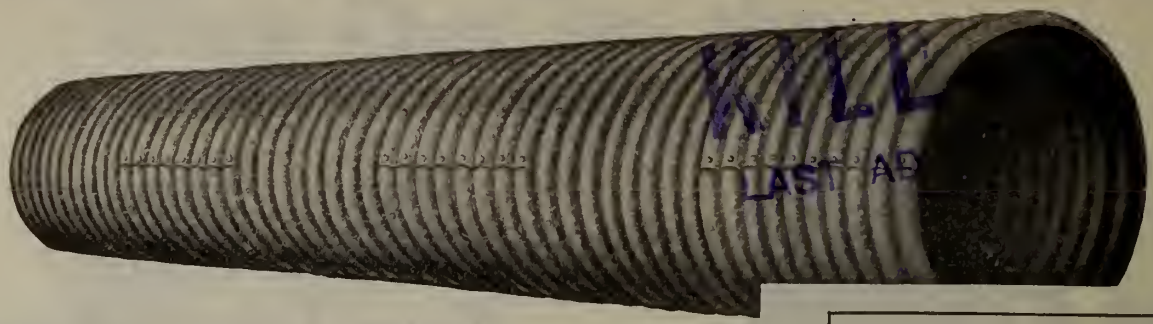
**METAL & THERMIT CORPORATION**

**15 Emily Street, Toronto, Ontario**

Chicago—7300 So. Chicago Ave.
San Francisco—329-333 Folsom St.
Pittsburgh—1427-1429 Western Ave.
New York—120 Broadway

THERMIT

# PEDLAR'S "PERFECT" TONCAN METAL CULVERTS



LENGTHS UP TO 40 FEET
COUPLING BANDS FOR LONGER LENGTHS
DIAMETERS 8 TO 84 INCHES

THE narrow and deep corrugations which are the essential feature of the Pedlar Culvert, give the maximum strength with the minimum weight. This great strength enables the Culvert to withstand tremendous external stresses from various types of rolling loads. It also gives it the power to resist great internal stresses from frost and ice. The enormous strength of Pedlar Culverts, combined with their ease of installation, makes them the first choice of engineers who go deeply into the study of road-building economy.

Write for Culvert Booklet R.M.

*for*
STRENGTH
DURABILITY
ECONOMY

## THE PEDLAR PEOPLE, LIMITED

Established 1861

*Executive Office and Factories:* OSHAWA, ONT.

Branches: Montreal Quebec Halifax St. John Ottawa Toronto Winnipeg Calgary Vancouver

# DOMINION BRIDGE COMPANY
## LIMITED,
## MONTREAL, P.Q. CANADA

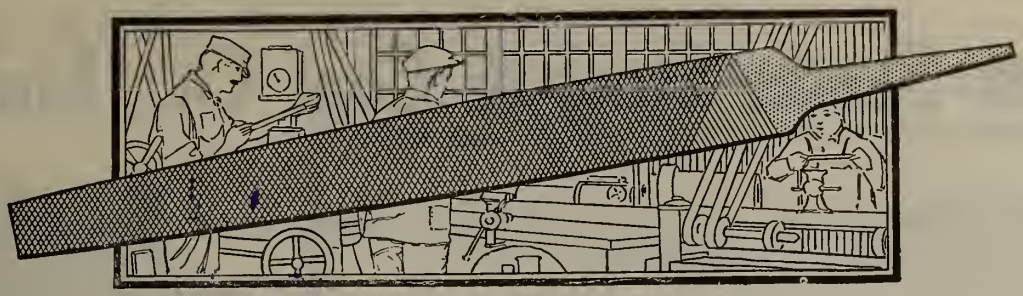
**Engineers, Manufacturers and Erectors of Steel Structures.**

Railway and Highway Bridges; Swing and Bascule Spans; Buildings of all kinds; Hemispherical Bottom and other Tanks; Transmission Poles and Towers; Riveted Pipe; Caissons; Barges; Turntables; Electric and Hand Power Cranes; Hoisting Appliances; Lift Locks; Hydraulic Regulating Gates, Etc. Gear Cutting and General Machine Work.

**Main Office and Works:**
**LACHINE LOCKS, P.Q. P.O. Address—MONTREAL**
**Cable Address "DOMINION"**

BRANCH WORKS:
Toronto, Ont. Winnipeg, Man.
Ottawa, Ont.

SALES OFFICES:
Montreal, P.Q. Toronto, Ont. Winnipeg, Man.
Ottawa, Ont., Regina, Sask., Edmonton. Alta.
Vancouver, B.C.



# Dull Files Mean Poor Work

As soon as a file has lost its original sharpness, it is an inefficient file.

Every hour you keep a file in use after this keen edge is gone, means that much poorer work.

It will pay you to discard a file as soon as it begins to get dull, and buy a new one.
If you get Famous Five Files, you can be sure of getting long efficient service.

They are specially fabricated, cut and hardened. They are the standard of file quality.

Specify them when ordering:

**KEARNEY & FOOT GREAT WESTERN**
**AMERICAN ARCADE**
**GLOBE**

*Made in Canada by:*

## Nicholson File Company

PORT HOPE, ONTARIO

KILL
LAST AD

# Canada's Premier Machinery House

NEW AND REBUILT

Ironworking and Woodworking Machinery
Engines, Boilers, Motors, Contractors' Equipment

We carry a large stock of New and Used Belting, Pulleys, Shafting, Hangers, Pipe and Fittings, Machinist's, Millmen's and Engineer's Supplies of every description.

## H. W. PETRIE, LIMITED

**131-147 FRONT STREET WEST TORONTO**

**HAMILTON OFFICE—4 KING STREET WEST**

# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

*For prices and particulars write to*

**Head Office - - New Glasgow, Nova Scotia**

**Western Sales Office, Room 14, Windsor Hotel, Montreal**

# Kalamazoo Motor Cars

Kalamazoo No. 16 Motor Car

A light sturdy car, particularly adapted for use of Roadmasters, Signalmen and Inspectors. Has through running axles, with four wheels of equal diameter and motor and seat in center of track. Equipped with magneto ignition and free engine clutch with step starting device, features which are very desirable for easy starting of motor.

All Kalamazoo Motor Cars equipped with Hyatt Roller Bearings throughout.

Write us for bulletins and specifications of our various cars.

## Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

Canadian Representatives: Kelly Powell Co., Ltd., Winnipeg.
Wonham, Bates & Goode Trading Corp., Montreal.

# THE REILLY MULTI-SCREEN FEED-WATER FILTER

The hot distilled water secured from marine power plants, operating condensing, is ideal for boiler feed after the oil which it contains has been removed.

The Reilly Multiscreen Feed Water Filter and Grease Extractor efficiently removes this oil from the water. It is also suitable for the removal of mud or sand from lake or river water when used for boiler feed.

The area of the filtering surface is 500 times the area of the water inlet passage, far exceeding that of any other filter regularly manufactured, thus insuring a slow and efficient rate of filtration through the filtering cloths.

By-pass valves, allowing the uninterrupted flow of water to the boiler, and a standard manhole in the top of each filter for the removal of the cartridges, make cleaning a very easy operation.

MADE IN CANADA BY

## THE MASON REGULATOR & ENGINEERING COY., LIMITED

MONTREAL TORONTO

# MARINE REFRIGERATION

ANHYDROUS AMMONIA ($N.H_3$.) COLD AIR MACHINERY CARBONIC ANHYDRIDE ($C.O_2$.)

Improved Ethyl Chloride Systems

(MADE IN CANADA)

SOLE BRITISH LICENSEES AND MANUFACTURERS OF

"Viking" Rotary Pump Rotary Air Pumps and Blowers

(MADE IN CANADA)

SOLE AGENTS IN CANADA FOR

THE STEAM FITTINGS COMPANY, LIMITED

Automatic Steam Traps Thermostatic Control Valves and Fittings Automatic Regulators

CANADIAN AGENTS OF:

UNION ANTI-FOULING COMPOSITION CO. LTD., GLASGOW

Makers of: "Union" Anti-Fouling and Anti-Corrosive Compositions. High grade material used by the British Government, Admiralty, and other prominent leading Organizations.

Shipbuilding Machinery and Ships Auxiliaries

## A. G. KIDSTON & COMPANY

**17 St. John St. - MONTREAL**

## "Safe Railway Oil Storage Systems"

There is a Bowser system for every requirement. Our Engineers will be glad to take a survey of your needs. They are at your service.

S. F BOWSER COMPANY, Ltd.
66-68 Fraser Avenue
Toronto, - Canada

LAST AD.

BOWSER

Systems are:
Leak-proof
Evaporation-proof
Deterioration-proof
Convenient
Rapid
Highly Efficient
Conserve space and reduce fire hazard to minimum

# Halifax Shipyards Limited

## Haifax, Nova Scotia

***Steel Ship Builders and Ship Repairers***

Dry Dock, 550 feet long, 102 feet wide

Hull Repairs Electric Welding
Boiler and Machinery Repairs.

**Shipyards, Drydock and Shops - - Halifax, N. S.**
**Marine Slips and Repair Shops - Dartmouth, N.S.**

# The "F.B.C." Welded Flexible Staybolt

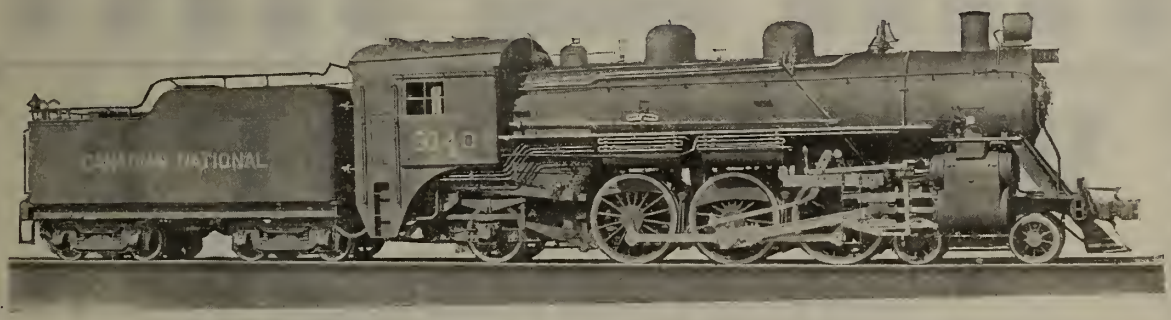
OUR LATEST ACHIEVEMENT
NON-LEAKABLE—
THREE STYLES ONLY
COST OF APPLICATION LOWERED
WRAPPER SHEET STRENGTHENED

*Specify for new equipment and use them in repairs.*

KEEP STANDING
LAST ADVERTISEMENT

THE "F. B. C." WELDED FLEXIBLE STAYBOLT IS THE RECOGNIZED SUPERIOR OF ALL THREADED SLEEVE TYPES OF FLEXIBLE STAYBOLTS

## FLANNERY BOLT COMPANY, Pittsburgh, Penna.




## 4-6-2 TYPE LOCOMOTIVE

**Built for the Canadian National Railways**

We are specialists in building locomotives.

We build all types and sizes, also all kinds of spare and repair parts for locomotives and tenders.

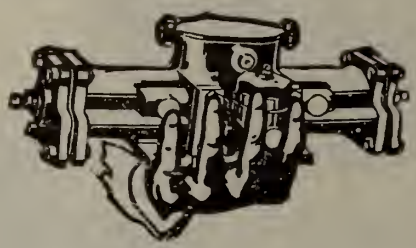
Our experience puts us in a position to give you expert advice as to what particular type and size of locomotive is best suited to your needs.

## Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

# Don't sell your big cars. Convert them to real "rushour" cars.

*Standardize!* *Pneumatize!*



There is NO REASON now why your present cars should not be transformed and standardized to give perfect platform economies and a higher rate of passenger exchange and effective fare collection than was deemed possible before the development of NATIONAL PNEUMATIC car speed up devices.

Equip these cars with Pneumatic Door and Step Control.

**National Pneumatic Company, Inc.**
50 Church St., New York Edison Bldg., Chicago
Works: Rahway, N. J.

# WIRE ROPE

WE are manufacturing Steel Wire Rope for all purposes and have in stock at each of our warehouses a good assortment of standard sizes in Siemens-Martin Steel, Crucible Cast Steel, Plough Steel and Extra Plough Steel Qualities.

We also manufacture and carry in stock all kinds of

***BARE AND INSULATED ELECTRICAL WIRE AND CABLE***

*Write nearest office for quotations*

**Canada Wire and Cable Co., Limited**

**Head Office and Works:—Leaside, Ont.**

674 Barrington Street, Halifax. 592 Notre Dame Ave., Winnipeg.
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Passenger and Freight Service. Frequent Sailings from Montreal. Further particulars upon request.

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Daily service to Niagara-on-the-Lake, Queenston and Lewiston—connecting at Lewiston and Queenston with Trolley Lines for Niagara Falls, Buffalo and U.S. points.

**SHIP YOUR FREIGHT BY WATER**

Save both Time and Money. We have excellent facilities for Handling Freight of all Kinds. Through Bills of Lading issued via all Ocean Lines, via Montreal.

## CANADA STEAMSHIP LINES, LIMITED

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# RAILWAY AND MARINE LIGHTING

Complete Equipment for Electric or Gas Lighting of Railway Passenger Cars

Complete Apparatus for Harbors and Rivers—Buoys, Beacon Towers and Lanterns

## The Safety Car Heating and Lighting Co.

**601 Drummond Bldg., Montreal**

# Buffalo Brake Beam Company

**BUFFALO BEAMS ARE BEST BEAMS**

*Offices*
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Brake Beams for all Classes of Cars, Locomotives and Electric Equipment

"IMPERIAL FOURTEEN"

AIR COMPRESSORS

***Haven't you often wished for a Small Compressor*** for Cleaning Motors and Generators, Spraying Paint or Varnish, Blowing Chips Off Lathes, Running a Sand Blast, Operating an Air Hoist or One or Two Air Tools, Raising Water From a Well or Oil, Acids, etc., in the Shop; Agitating Solutions, Blowing Oil Fired Furnaces, Tooting Whistles or a Hundred and One Other Little Jobs.

*"Imperial" Fourteens are made for just such work as this, with the same care and attention to details that have always been characteristic of compressors of our make. May we send you a copy of Bulletin 3039 describing these handy little machines?*

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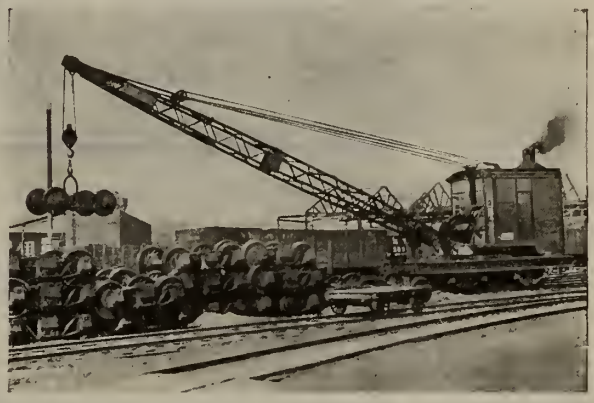
# LINK-BELT LOCOMOTIVE CRANES

A LINK-BELT LOCOMOTIVE CRANE saves $18,000 annually for the B. & O. C. T. Ry. Co. of Chicago.

They use it for cleaning out cinder pits, loading and unloading cars, making fills and roadbed for new track, handling steel rails and heavy construction work, pile driving, etc.

It is an invaluable aid, and it does the work of 25 men. In addition to this substantial financial saving, it decreases interference with train movement, and more quickly releases cars for other service.

Let us tell you more about the Link-Belt Crane. Send for catalog No. 370.



**CANADIAN LINK-BELT COMPANY, LTD.**

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# Canadian Porcelain Co.

**Limited**

**Hamilton Canada**

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Porcelain Insulators and Pole Line Hardware

# CANADIAN STEEL-TIRE AND WHEEL COMPANY, LIMITED

Locomotive and Car Wheel Tires
Steel Tired Wheels of all kinds

**Works:**
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**Office:**
**Transportation Bldg., Montreal**



Cylinder Bushing
Cylinder Packing
Valve Bushings
Valve Packing
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Pistons
Pedestal Shoes
Pedestal Wedges
Driving Boxes
Crosshead Shoes

KILL LAST AD.

# Heavy Duty Service

Pusher service is heavy duty service. It means that for a limited number of miles, every part of the locomotive is subjected to the greatest possible strain and stress.

**Hunt-Spiller Gun Iron**

combines elasticity with wear-resisting qualities which insures freedom from breakage plus long service with slight attention.

Hunt-Spiller Gun Iron is easy to machine and requires less maintenance attention—both important features in providing a dependable metal for severe service.

**Hunt-Spiller Gun Iron**

*Made only by*

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IS

Dust Proof—Oil Retaining—Strong and Light. The Pinless Lid Feature Saves Renewals.

IT IS A UNIVERSAL STANDARD BECAUSE THE MANY YEARS OF SERVICE PROVE IT TO BE PERMANENTLY GOOD.

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Railway and Steamship Lines
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WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

SHEER LEGS AND WHARFAGE AT DEEP WATER PIER

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***Rates on Application***

# Norton Jacks

For all Classes of Service

## 10 to 100 Tons Capacity

*Send for Illustrated Catalogue 1920*

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We are months behind our orders and urge you to plan your purchases of Chase "Goat Brand" Car Plush about **one year in advance.**

Although our mills are running to capacity, our production is far behind, and purchasing agents should bear this fact in mind in order to avoid disappointments in delivery service if they desire the quality represented by Chase "Goat Brand" Car Plush. Manufactured by Sanford Mills.

CHASE

GOAT BRAND
TRADE MARK
MADE BY SANFORD MILLS

MOHAIR PLUSH

## L. C. CHASE & CO., BOSTON

*Leaders in Manufacturing since 1847*

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# CASTINGS of Every Description in Brass and Bronze

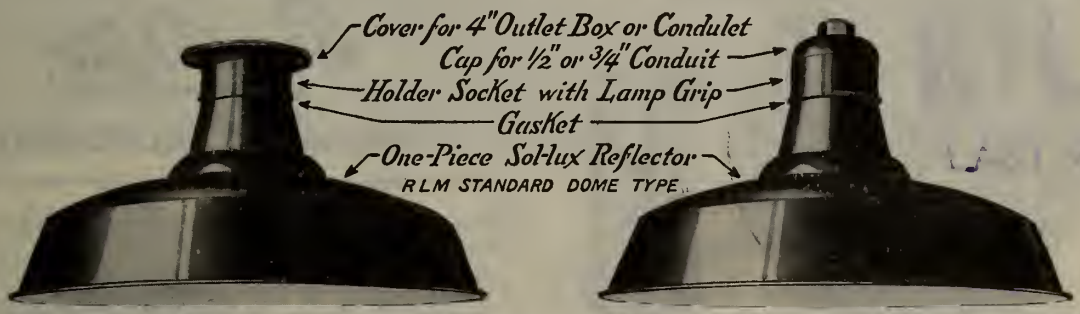
NEW BRASS FOUNDRY

Rough or Machined Complete to Specification

## Ottawa Car Manufacturing Co., Ltd.

OTTAWA - - ONTARIO

# Cutter Holder-Socket Reflectors


Cover for 4" Outlet Box or Condulet
Cap for 1/2" or 3/4" Conduit
Holder Socket with Lamp Grip
Gasket
One-Piece Sol-lux Reflector
RLM STANDARD DOME TYPE

Cutter Holder Socket Reflectors are of one-piece, porcelain enameled steel, fastened securely to the porcelain body of the holder socket. They are time-defying, weather-proof, neat in appearance, and designed by experts who have studied, for years, to devise the most desirable means of efficient lighting. We are ready to furnish you with immediate and complete information.

**Service**

**Dependable Repair Work**—and no other kind is tolerated by the cautious operator of electrical apparatus—is the natural result when performed by factory-trained experts, supported by the engineering skill and manufacturing knowledge associated with the name—

**Westinghouse**

**Prompt Repair Service** has been assured to users of Westinghouse apparatus, by establishing at convenient points repair shops operated by the Company's Service Department, where repair work is executed with all possible despatch, consistent with the care that is observed in the various processes entering into work of this character. Repair shops are located at:—

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WINNIPEG, 158 Portage Ave. E.
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# Port Arthur Shipbuilding Co., Limited

**Port Arthur, Canada**

Canadian Adventurer, launched at Port Arthur, by H.R.H. Prince of Wales, Sept. 8, 1919.

*Designers and Builders of*

Steel Ships

Boilers

Engines

Etc.

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

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## Prest-O-Lite Service Is More than a Name

Some of the most valued heating applications in industry were inspired or developed by Prest-O-Lite engineers. Their experience is rich in just such knowledge as may save you much loss through costly experiment or inefficient methods.

Prest-O-Lite Service is built upon proved ability to serve—ample plant and cylinder capacity, broad experience and a smooth-working, nation-wide organization—the fundamentals without which service is no more than a name.

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## Dissolved Acetylene

*"The Universal Gas with the Universal Service"*

has earned its place by force of organized knowledge and facilities.

If you have a metal-working problem, we are pretty certain to have a tested plan to submit—a plan that will show you just what to do and how best to do it.

Send us a sketch and data. We'll send the answer—fair and unbiased—professional rather than commercial.

Our Engineers are at your service, whether you are an active user or a potential user.

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Branches: Montreal, Toronto, Winnipeg
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In other words, what do you get when you buy "VAN DORN".

Not merely a piece of machined iron, or steel. When you buy "VAN DORN" gearing you get MAXIMUM GEAR SERVICE

which means

OPERATING EFFICIENCY, as well as DURABILITY.

## THE C. E. A. CARR COMPANY

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AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps*
*Double Shoulder Solid Bottom*
*Switch Riser Plates*

SWITCHES
FROGS AND CROSSINGS
MANGANESE TRACK WORK A SPECIALTY

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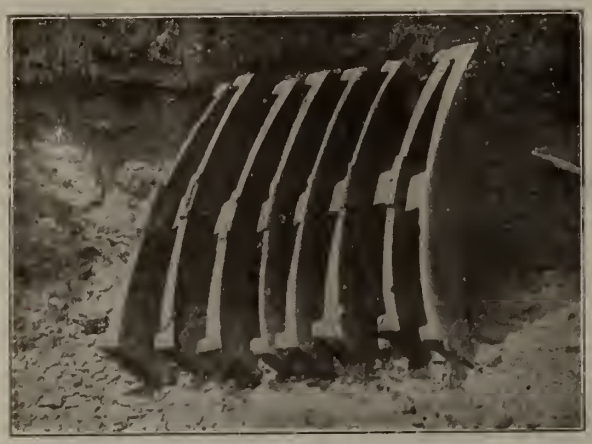
*The Luxeberry Painter Says:*

"SPARE THE VARNISH, SPOIL THE FINISH. It is said the world receives most of it's impressions through the eyes, and this means much in Railway and Marine finishing shops." "I use Berry Brothers' Varnishes, Enamels and Stains, because I can always produce with them a finish of lasting beauty."

LAST AD.

**BERRY BROTHERS** INC
Worlds Largest Makers
Varnishes and Paint Specialties

**Walkerville, Ont.**



# Reinforced Brake Shoes

wear as shown above, before they are scrapped and they wear safely, too. You get your full money's worth in satisfactory service from them always.

Reinforced Car, Coach and Driver Shoes are absolutely essential for safe and economical operation in all classes of railway service.

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350-356 St. James Street, Montreal.

The Holden Co., Limited, Agents.

**Money Saving and Efficient**
**The HOLD TITE NUT LOCK**

**STATEMENT**

Showing comparative cost using a Standard Nutlock now on the market and the HOLD TITE NUT LOCK as applied to the car body of a standard 40 ton box car.

STATEMENT was prepared from the specifications of the body of a standard box car which include the truck.

**Summary**

Total Cost using a Standard Nutlock on one Box Car Body....$3.36

Total Cost using the HOLD TITE NUT LOCK on one Box Car Body..... 1.51

Difference in Cost (per car) in favor using the HOLD TITE NUT LOCK ..... $1.85

WHAT MORE? NOTE THE SIMPLICITY—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

Why not save this Cost by always using the HOLD TITE NUT LOCK?

The cheapest device used; absolutely effective. Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

**Edward A. Robinson Co., Ltd.** 228 Craig St. West Montreal

THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF

# Canada Iron Foundries, Limited

Chilled Tread Cast Iron Car Wheels for All Services
Cast Iron Water, Gas and Culvert Pipe,
Flanged Pipe and Specials
Railway Castings

HEAD OFFICE:

**Mark Fisher Building - - - Montreal**

# Thomas Rail Anchor Tie Plate

**Chicago Malleable Castings Co., West Pullman, Chicago, Ill.**

THE RIGHT WAY—
THE TWO WAY—
THE TIGHT WAY

Rail Seat inclined and pedestaled
Hook on inside flange of Rail

MADE IN CANADA

*Canadian Representative*

**The General Supply Co. of Canada, Limited**

Ottawa, Montreal, Toronto
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The Triple - Voltage Dry Battery made especially for railway motor car ignition

Portable, high power, moisture proof, and long lived — built to resist abuse

KILL LAST AD.

# Columbia Hot Shot Battery

*"higher service—lower cost per day"*

**Canadian National Carbon Company, *Limited*, Toronto, Ontario**

# VAPOR CAR HEATING CO. of Canada, Limited

MADE IN CANADA

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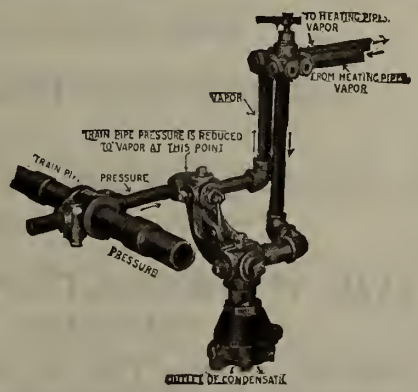


THE VAPOR SYSTEM OF CAR HEATING

**61 DALHOUSIE STREET - MONTREAL, QUEBEC**

F. A. PURDY, SALES REPRESENTATIVE.

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# Machine Shop, Foundry and Construction Supplies

Micrometers
B. & S.

"Vulcan"
Pipe Vises
and
Pipe Wrenches

In addition to the tools shown, our line includes Set Screws, Cap Screws, Machine Screws, High Speed and Carbon Drills, Files (extra large stock) and a complete line of machinists' tools (Starrett, Brown & Sharpe, etc.)

We also carry a heavy stock of Bar Iron, Sheet Iron, (black and galvanized), Machine Steel, Cast Steel, High Speed Steel, Cold Rolled Steel, etc.

Pleased to quote prices and time of delivery.

"Red Hot" Torches.

## RICE LEWIS & SON, Limited

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# Peirce Brackets
# Pole Line Hardware
# Catenary Construction Hardware
# Wire Rope Thimbles

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# THE PYLE-NATIONAL COMPANY

Type "K-2" 500 watt 32 volt
Turbo-Generator

*Manufacturers of*

Locomotive Headlights
and
Steam Turbo-Generators
of all descriptions

## THE PYLE-NATIONAL CO.
CHICAGO

*Canadian Agents*—**The Holden Co., Ltd.**
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# Johns-Manville Railroad Products

**ASBESTOS AND MAGNESIA MATERIALS**

Locomotive Lagging
Locomotive Spiral Pipe Covering
Locomotive Packings, including Air Pump, Throttle, Valve Stem, Cab Cock, Gaskets, etc.
Roofings
Mastic Flooring
Transit and Ebony Asbestos Wood
Transite Smoke Jacks
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**POWER PLANT SPECIALTIES**

Pipe Coverings for all classes of service.
High Pressure, Low Pressure and sheet Packings.
High Temperature Cements
Steam Traps
Insulating Cement
Electrical Supplies

**FOR AIR BRAKES ON LOCOMOTIVES AND CARS**

Automatic Slack Take-up.
Packing Cups and Gaskets.
Expander Rings.

JOHNS-MANVILLE SERVICE COVERS THE CONTINENT

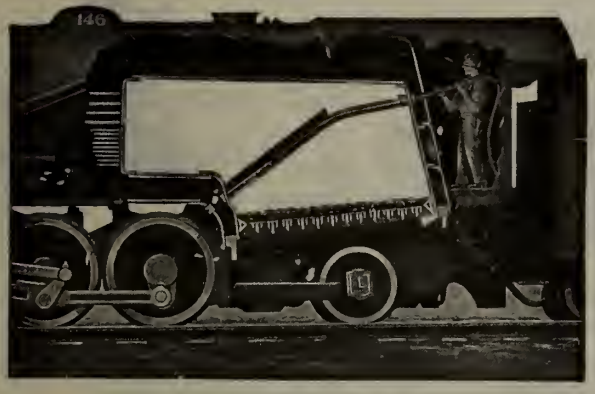
## H. W. JOHNS-MANVILLE CO.
**NEW YORK CITY**

**10 Factories—Branches in 64 Large Cities.**

For Canada, Canadian Johns-Manville Co., Ltd., Toronto.

JOHNS-MANVILLE SERVICE COVERS THE CONTINENT

Lagonda Arch Tube Cleaner



Lagonda Cleaner removing Scale from Arch Tubes.

# Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

## Babcock and Wilcox, Limited

Head Office For Canada
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**PAXTON-MITCHELL LTD.**

Piston Rod and Valve Stem Packing for Super Heat and Saturated Steam.
"Packing that Packs." Manufactured in Canada.

**DUNTLEY-DAYTON**

Pneumatic Tools. Tools that are guaranteed.
Ask for trials or tests and satisfy yourself.

**THE "IMP" DROP-FORGED RIVET SET**

Made in Canada from steel made in Canada.
Conduct Break-down test; satisfy yourself.

**"CULVER" BALL BEARING JACKS**

Once tried always used. Convince yourself—ask for trial. Apply and operate wherever Jacks can be used. Note results.

**"INTERNATIONAL" PLASTIC METALLIC PACKING**

All that its name implies. Good materials are only determined by results obtained in service. Ask about it. This is a Packing that overcomes the necessity for carrying many styles and sizes. "INTERNATIONAL" PLASTIC METALLIC conforms to all sizes and shapes of stuffing boxes.

**INTERNATIONAL "RAPID" HOSE COUPLERS**

Something simpler and better.
We carry in stock full line of Round House, Back Shop and Machine Shop Supplies.

**We are Canadian Distributors for QUAKER CITY RUBBER CO. Their complete line of Mechanical Rubber Goods Carried in Stock. WE RESPECTFULLY SOLICIT YOUR VALUED INQUIRIES.**

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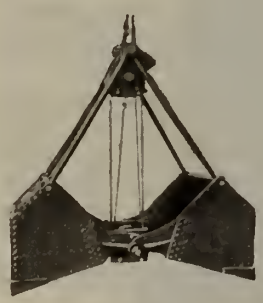
# The Rail Joint Company of Canada, Limited

**McGill Building, MONTREAL**

Makers of Base-Supported and 100% Rail Joints for Standard, Girder and Special Rail Sections. Also Joints for Frogs and Switches, Insulated Rail Joints and Step or Compromise Joints.

***PROTECTED BY PATENTS*** ***Grand Prize, San Francisco, 1915***

# BUCKETS



The engineering skill and practical experience from which Orton & Steinbrenner Buckets are built, covers a range of conditions second to none.

The material you wish to handle is best moved with Orange Peel or Clam Shell Buckets.

**O. S. Dependable Buckets**

will give a better service than is possible with the average bucket. There is a positive "bite" into the material—be it Coal, Sand, Gravel, Crushed Stone or Dirt—and every bucketful will measure up to the rated capacity of the bucket.

## ORTON & STEINBRENNER CO.

**608 So. Dearborn St., Chicago**

***Works : Huntington, Indiana***

We are making a complete line of PUMPS

## Vertical and Horizontal Steam and Power

Our lines are the result of years of careful perfecting of design, and we are using only the best labor and material available.

**Every Pump Carefully Tested Before Being Shipped.**

## The Smart-Turner Machine Co., Limited

**Hamilton, Canada**

# CANADIAN MARCONI

## Wireless Apparatus

INSTALLED — OPERATED — MAINTAINED

UNDER EQUITABLE CONTRACT RELIEVING SHIPOWNERS OF RESPONSIBILITY

(Affiliations and Maintenance Facilities all over the World)

*Communicate Your Requirements to :*

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*(Contractors to Canadian and Newfoundland Governments)*

**Head Office: 11 St. Sacrament Street, Montreal, P.Q.**

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# ALGOMA STEEL CORPORATION LIMITED

Steel Rails
Splice Bars
Steel Tie Plates

PIG IRON
BASIC & BESSEMER

MARK OF ALGOMA O.H. QUALITY
CONCRETE REINFORCING BARS

Structural Shapes
Standard Merchant Bars

BLOOMS BILLETS & SLABS

SAULT STE. MARIE, ONT. CANADA.

# B. J. Coghlin Company, Ltd.

**Founded in 1869**

**Manufacturers of**

## SPRINGS AND TRACK TOOLS

**Office and Works: Darling, Davidson and Ontario Street East**

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| **Harvard Turnbull & Co., Agents** | - | - | - | **Toronto** |
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# DOMINION IRON & STEEL CO., Limited

**Manufacturers of PIG IRONS—SAND and MACHINE CAST—FOUNDRY and BASIC**

## Basic Open Hearth Steel Products

Rails Blooms Billets Slabs Bars
Wire Rods Wire and Wire Nails

## Coke Oven By-Products

Sulphate of Ammonia Benzol Toluol Xylol
Solvent Naphtha - - - Naphthalene, Etc.

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**General Sales Office:**
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Opportunity is knocking. Heed the call. Install a

## ROAD BOSS MOTOR

and open the door for greater efficiency, more profits for your road, and greater advancement for yourself.

You cannot hope to keep an efficient and contented crew if you are using the old time "Armstrong" Pump Car. Nor can you hope to keep a crew of good men and expect them to push a motor car seven to fourteen miles per day. That is past forever. The sooner you equip your car with a dependable motor—a four cycle, free running, water cooled, reversible engine—the sooner your labor troubles will be at an end.

The Road Boss fills every need—moves your men quickly from place to place — conserves their strength and energy—enables them to carry bigger loads of supplies—makes fewer trips back—saves their time and makes them like the job.

Write and ask us about the exclusive features of the Road Boss and what practical railroad men like yourself say about its performance.

**NORTH AMERICAN ENGINE CO.**
**Algona, Iowa**

# "INSPECTORS WELL SATISFIED"

That report has been standard with us for over 35 years. Workmanship just a little better than was expected—materials selected just a little more carefully—shop methods just a little better than the average. And all this has made our percentage of repeat orders gratifyingly large.

**ENGINEERING & MACHINE WORKS OF CANADA, Limited, St. Catharines, Ont.**

Eastern Sales Office: Hall Machinery Co., Sherbrooke, Que., and Birks Bldg., Montreal

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Seamless Tubes, Sheets and
Strips in all Commercial Sizes

## Copper Products Limited

120 St. James St., MONTREAL

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COPPER PRODUCTS LIMITED

BRONZE

# PROPELLERS

SOLID and SECTIONAL

*also*

"High Grade Bronzes for Engineering Purposes"

CANADIAN REPRESENTATIVE
THOMAS JARDINE
285 BEAVER HALL HILL,
MONTREAL

*Main Office and Foundry:*

AMERICAN MANGANESE BRONZE CO.
HOLMESBURG, PHILA., PA.
U.S.A.

16'-6" diameter propeller
cast by us.

Thor

# Close Corner Air Drills

Do you remove link cradles, or do you repair them the Thor way? In these days, with labor so high and the demand on locomotives so urgent, it will pay you to consider that question.

Nos. 8 and 9 THOR
Close Corner Drills

This drill will save the delay and expense involved in removing those link cradles of yours. Repair them on the engine with Thor close quarter air drill.

## Independent Pneumatic Tool Company

*General Office:*—No. 600 West JACKSON BOULEVARD, CHICAGO

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# Joliette Castings and Forgings Limited

*Head Office:* 326 Transportation Building, Montreal.
*Works:* Joliette, Quebec.

## Steel Castings

*Quality* *Service*

# BARBER

LATERAL MOTION TRUCK DEVICE
ROLLER SIDE BEARINGS—PASSENGER, FREIGHT, LOCOMOTIVES
70-TON DOUBLE ACTION TRUCK, LATERAL AND RADIAL MOTION
SPECIAL ROLLER BEARING CENTER PLATES
LATERAL MOTION ROLLER BEARING JOURNAL BOXES
TILTING BRAKE STAFF—GIVES CLEAR DECK ON FLAT CARS

*For Detailed Information and Drawings Apply*

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1522 McCormick Building,
Chicago, Illinois.

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**CANADIAN APPLIANCE CO., LTD.**
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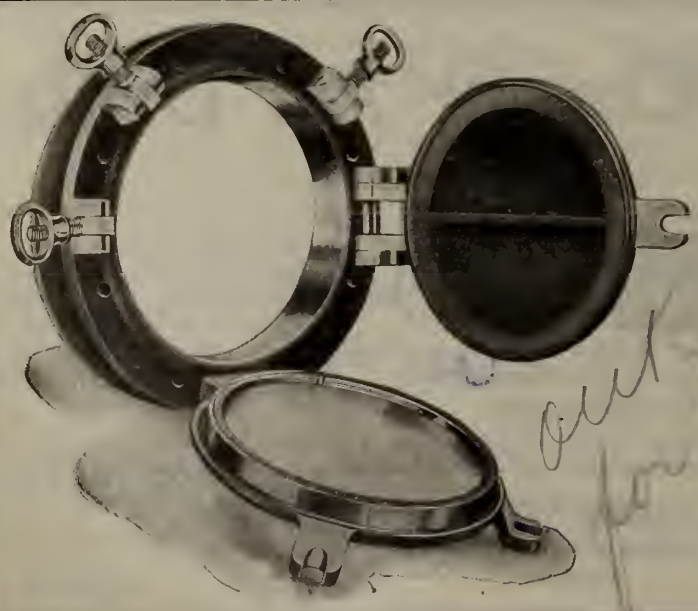

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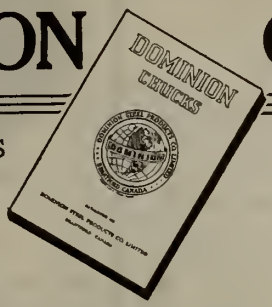


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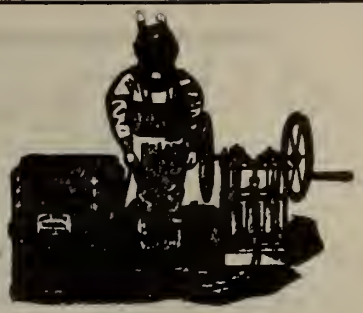

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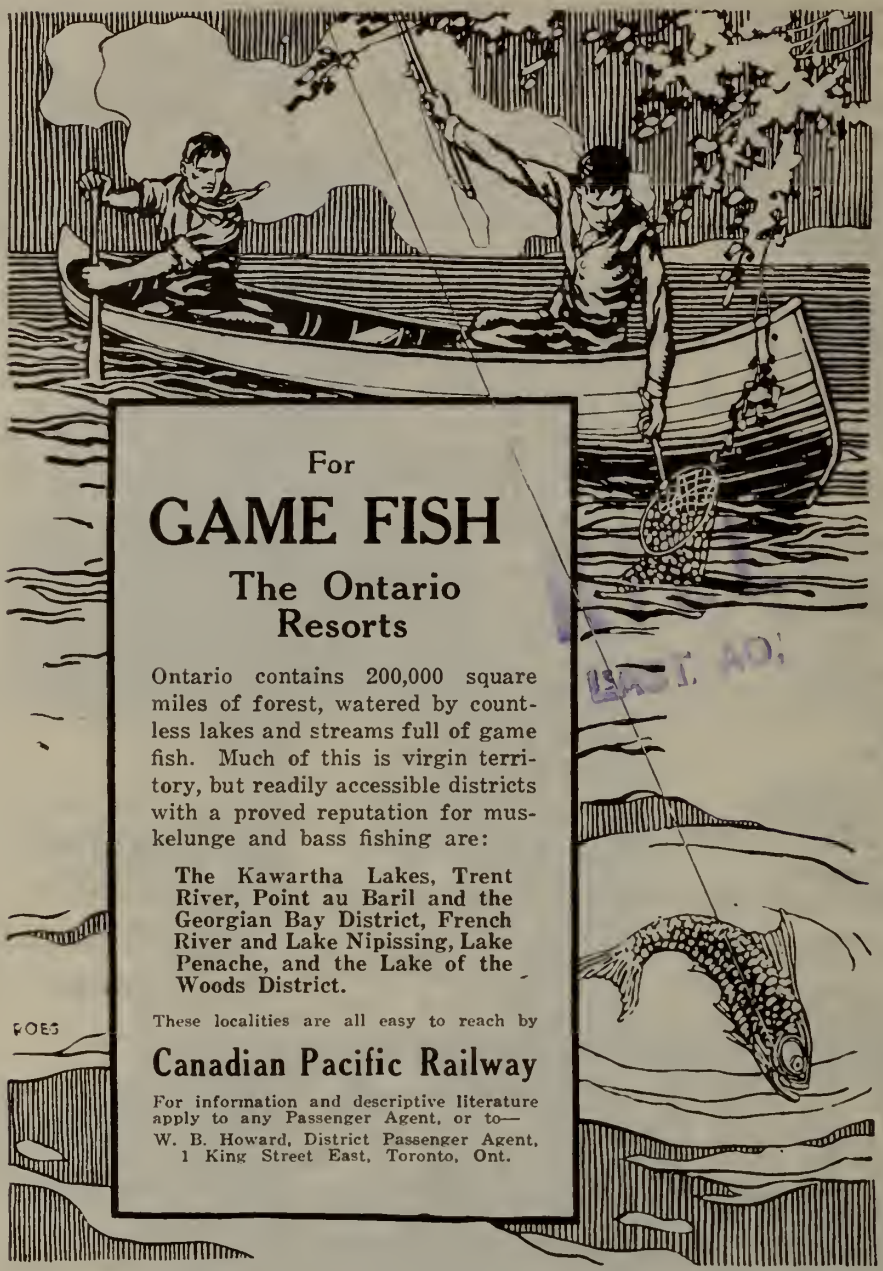

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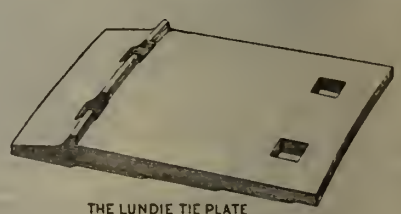

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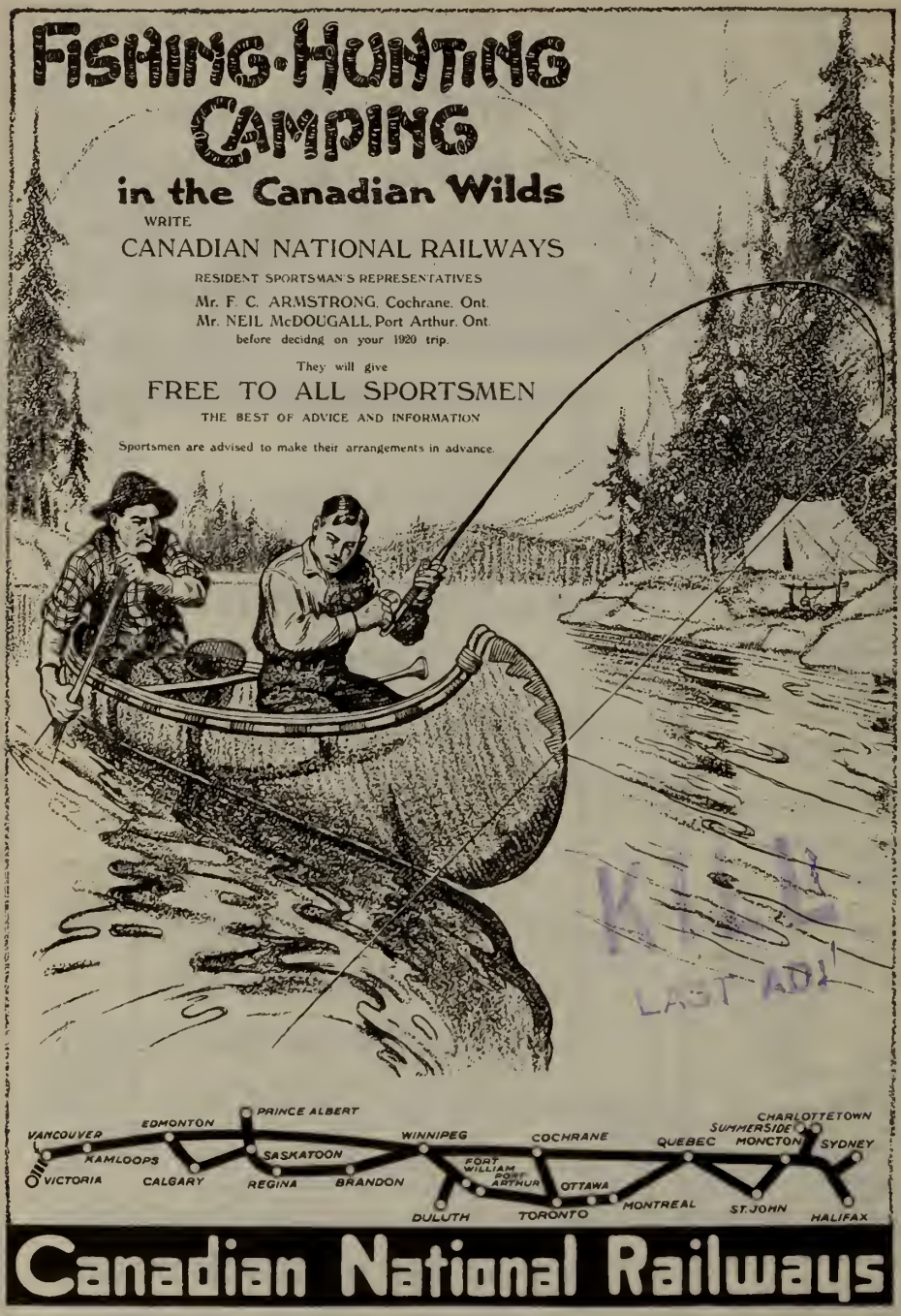


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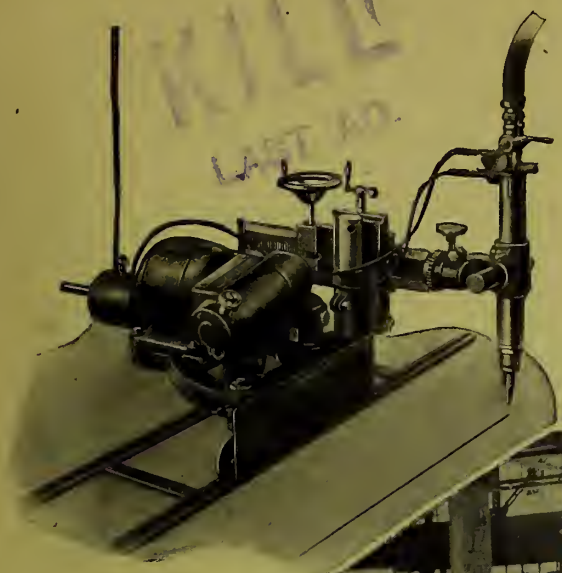

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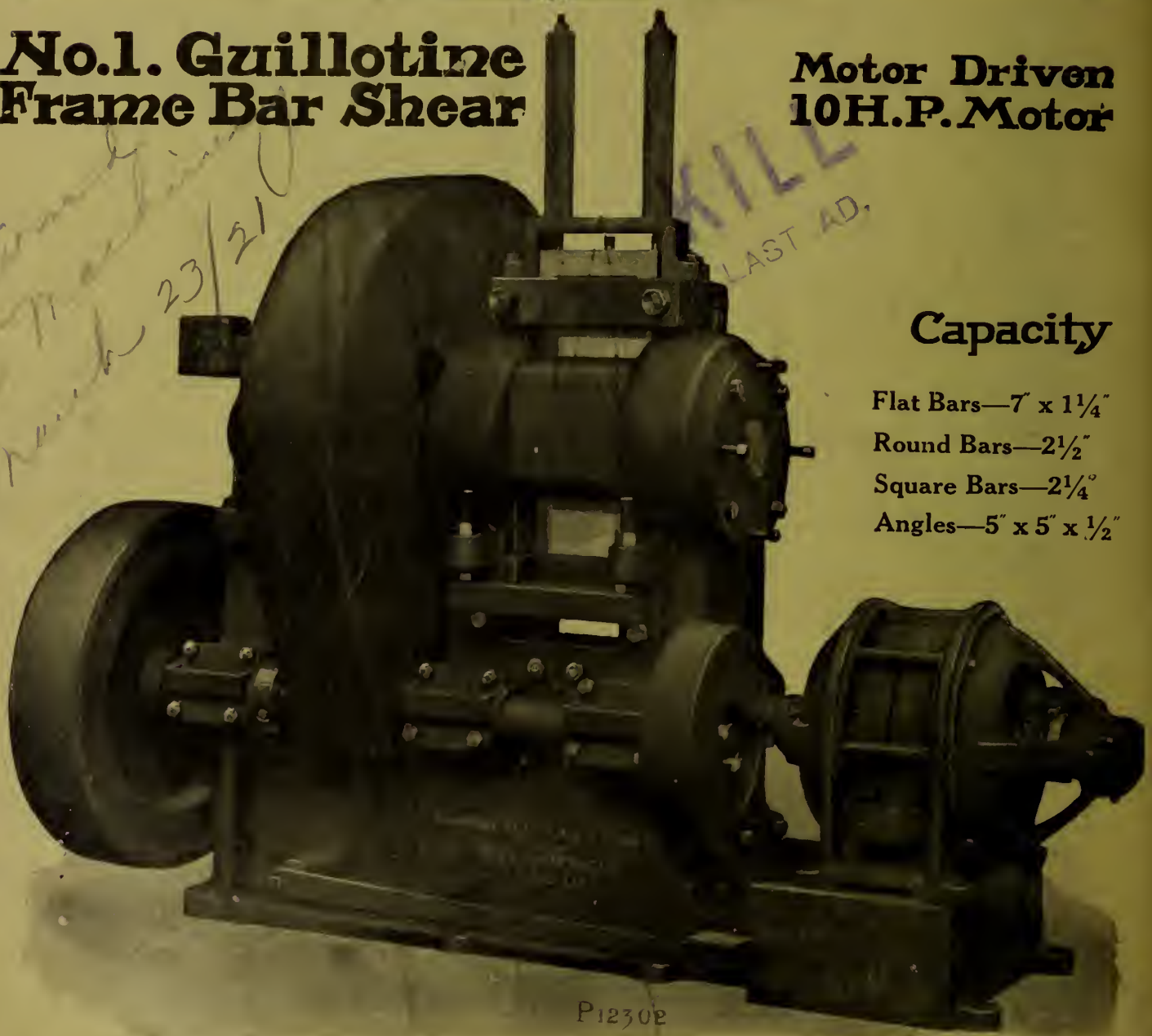

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ESTABLISHED 1898.

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Index to contents, pg. 603.

TORONTO, CANADA, NOVEMBER, 1920

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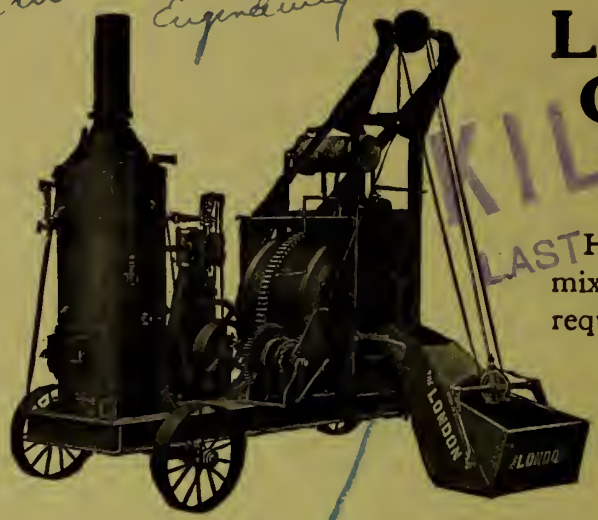


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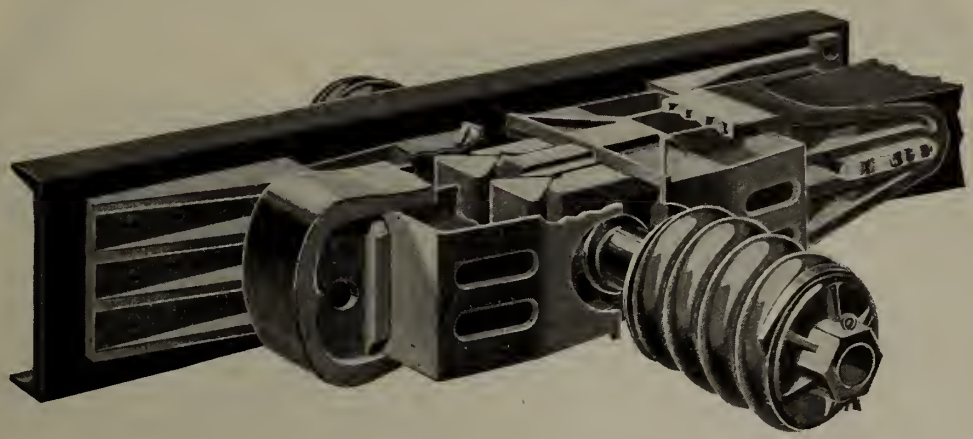

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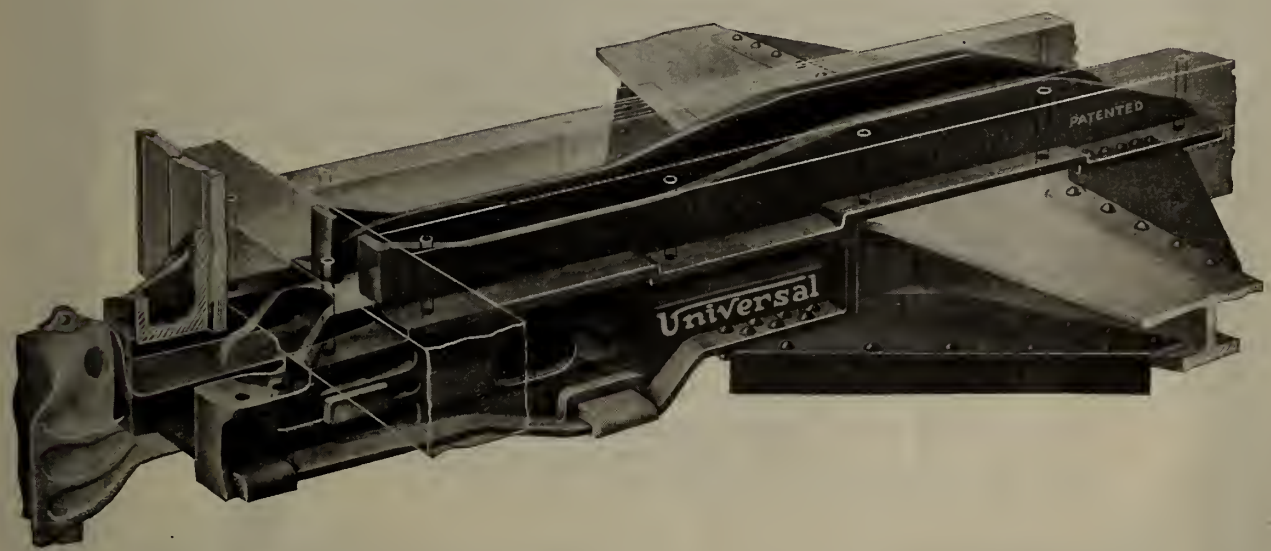


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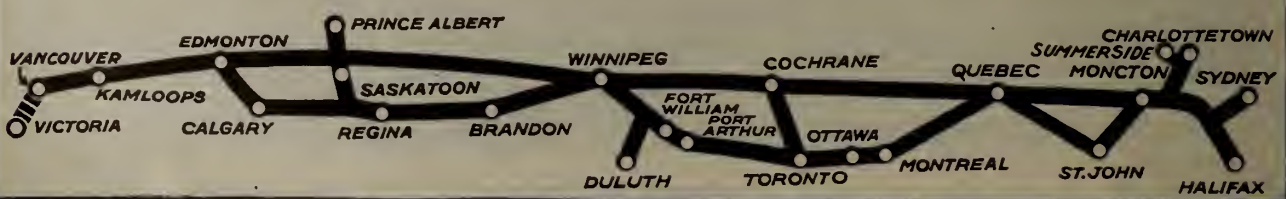


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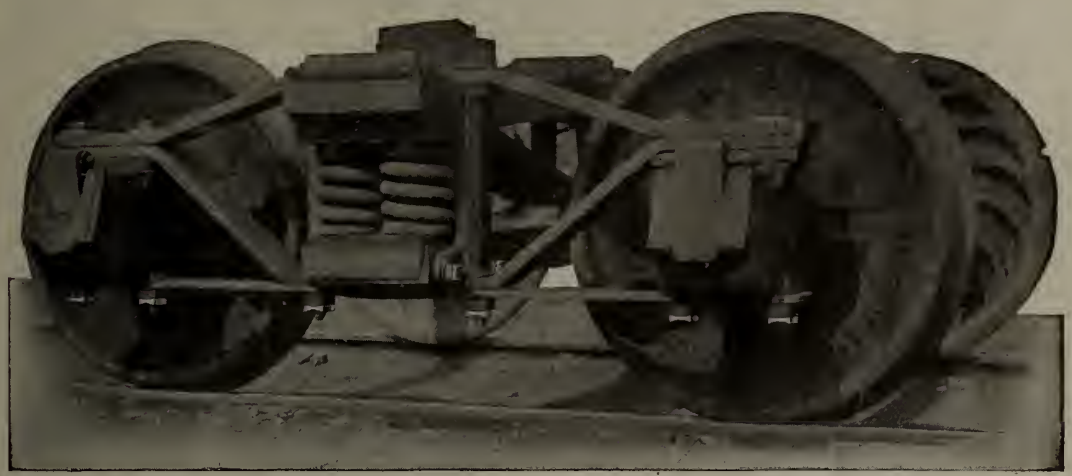

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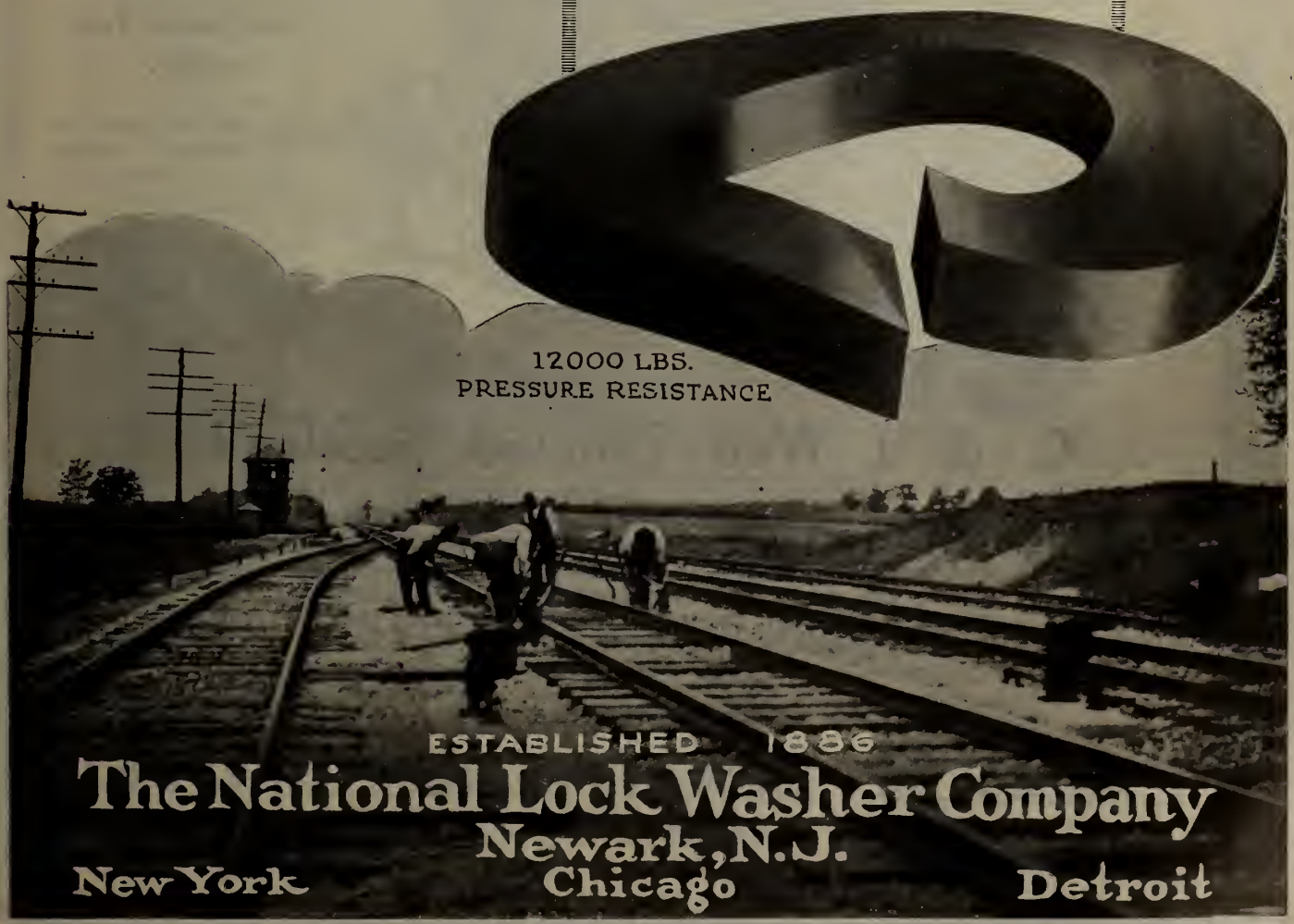

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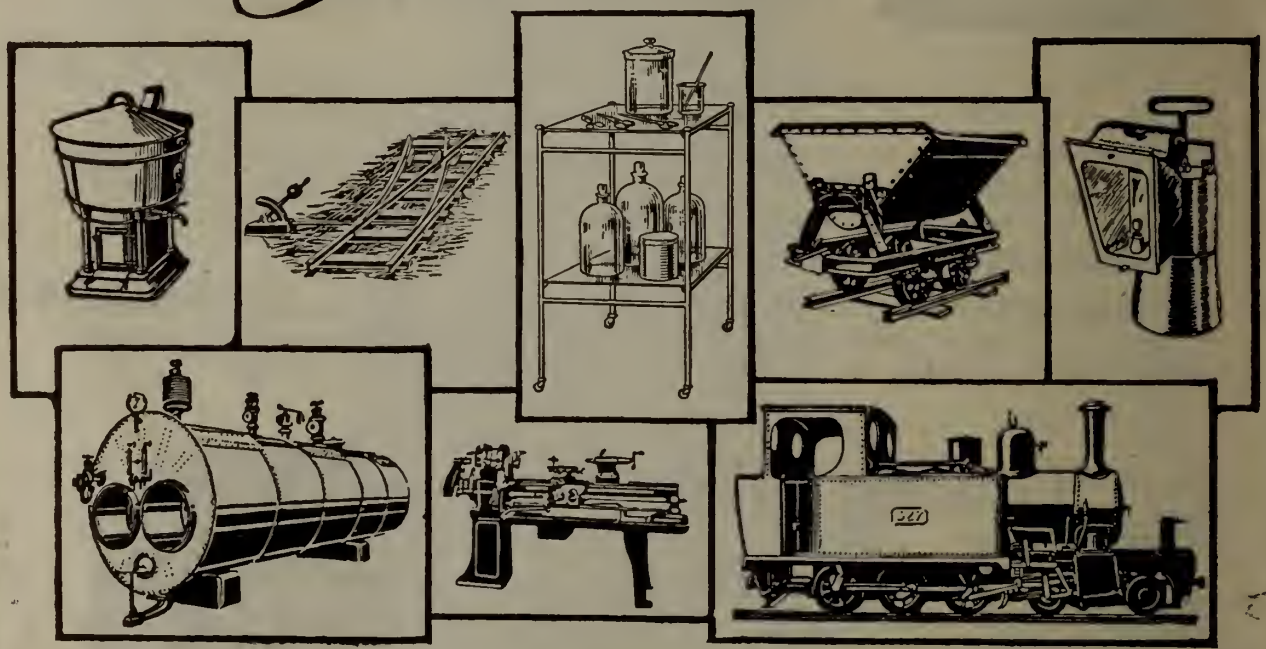

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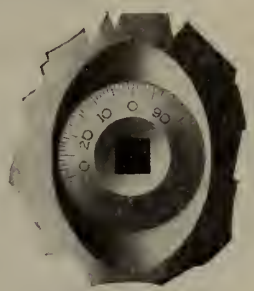

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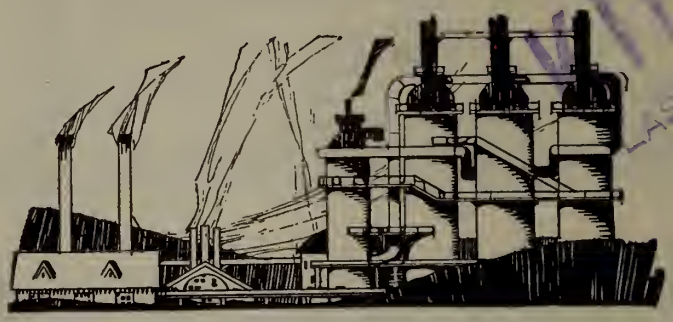
SPECIAL "TWO-IN-ONE"

REGULAR "TWO-IN-ONE"

"STANDARD"

# Davis Expansion Car Wheel Boring Tools

**CAN BE APPLIED TO ANY MAKE WHEEL BORING MACHINE**



THE Dominion Oxygen Company, Ltd., is one with the industrial future of Canada.

Founded upon an absolute trust in Canadian development, it looks forward to a far greater Dominion than has yet been conceived.

Firm in this faith, it has planned a chain of modern plants for the production of pure oxygen. Any one of the contemplated plants could adequately supply the demand of today.

Canadians, of this and future generations, may rely upon the best service from an organization whose very existence depends upon the prosperity of the Dominion.

The Dominion Oxygen Company, Ltd., will, from time to time, apprise the public of the progress of its building program and in the meantime it invites the inquiries of Canadian oxygen users as to its broad scope and liberal policy.

DOMINION OXYGEN COMPANY, LTD.
Hillcrest Park
Toronto • Ontario

D-7

# Murray Cast Steel Friction Draft Gear

KILL
LAST AD.

**MADE IN CANADA**

If the superiority of this device has never been apparent to you, it will be upon thorough investigation. For it will reveal that our claims for excellence are based on actual facts.

May be used with any draft attachment.

In use on thousands of cars, including U.S. R.A. standard cars.

**KEYOKE RAILWAY EQUIPMENT CO.**

**Chicago, Ill.**

*Canadian Agents:*

**INTERNATIONAL EQUIPMENT COMPANY, LIMITED**

**Transportation Building, Montreal, Quebec**

# FAIRBANKS-MORSE

## Building a Bigger Canada

THESE are days of progress—days when industry is leaping ahead and Canada is assuming her place in the world of commerce. Giant structures are being reared to house the machinery, men and equipment necessary to a bigger business.

Great highways are being constructed to provide for the easier transportation of Canada's products; elevators, wharves, factories, mills, mines—everywhere the hand of the contractor is set to some big task.

And wherever this construction work is going on, Fairbanks-Morse contractors' equipment is playing an important part—rendering its services as a factor in this work of progress. From the shovel to the steam and electric hoists, from the concrete mixer to the heavy road machinery, drill and jack, to truck and railway car, Fairbanks-Morse equipment is the choice of the contractor, because he knows that behind the smallest tool is the same quality guarantee and service that supports the largest unit of Fairbanks-Morse equipment.

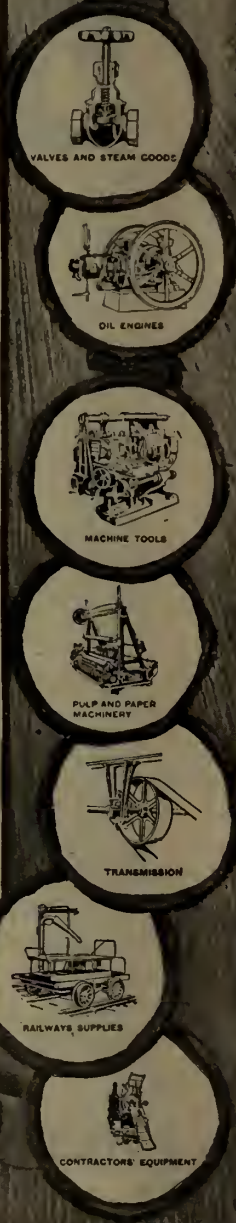
He knows that the Fairbanks-Morse 100% quality seal is the ideal of the Fairbanks-Morse institution—a standard and a guide in building a bigger Canada.

**The Canadian Fairbanks-Morse Co. Limited**

*Canada's Departmental House for Mechanical Goods*

Halifax St. John Quebec Montreal Ottawa Toronto Hamilton
St. Catharines Windsor Winnipeg Saskatoon Regina
Calgary Vancouver Victoria

11



## *Canadian Industry has awakened to the wonderful advantages of electrical heated devices in the shop.*

Typical installation of 2000 watt Soldering Iron Muffle Furnace, Catalogue No. 223434

Electric Rivet Heater, type SCH, C2, 3-75/-15440-60, Catalogue No. 223400

### Self-Regulating Melting Pot

We can hardly satisfy the demand for this product. It has proven wonderfully economical in operation.

For instance, current consumption decreases as the heat increases; when the maximum temperature is reached it remains constant.

The temperature will never reach a point where the metal will appreciably oxidize, or form the usual heavy coating of slag on the surface of the pot.

### Electric Soldering-Iron Furnace

This furnace will heat your iron without any attention from the operator. It is a proven fact that this compact, simple, efficient furnace greatly improves the working conditions in factories, as well as saves money.

### Electric Rivet Heater

No time is wasted in starting production.

Heats very rapidly—heated five hundred ½ in. x 1¼ in. rivets in one hour.

Rivet heats from inside out, giving more uniformity of heat and better upsetting conditions in the shank.

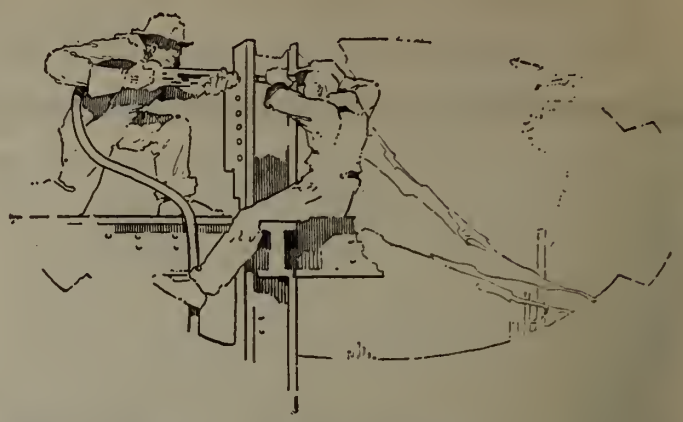
Self-regulating Melting Pot

## Canadian General Electric Company, Limited

Head Office TORONTO

Branch Offices: Montreal, Quebec, Sherbrooke, Halifax, Sydney, St. John, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Nelson, Vancouver and Victoria.

KILL
LAST AD.



# Foresight in Selecting Rubber Hose

Most buyers of rubber hose know from experience the dependability of Dominion Rubber System Hose in living up to every claim made for it.

We meet the demands of modern industrials by specializing in making over fifty types of hose to meet every condition, simple or exacting as it may be.

# Dominion Rubber System Hose for Railway and Marine Use

is made in various types, for liquids, oils, gas, acids, steam, suction, and other uses, at all practical pressures and temperatures.

With our comprehensive catalogue before you, it is an easy matter to specify the particular hose for any requirement. It pictures and describes the complete Dominion Rubber System line, and gives service conditions for which each type is designed. It also features couplings, nozzles, and reels.

For catalogue or information, write our nearest service branch.

CANADIAN CONSOLIDATED RUBBER CO. LIMITED
DOMINION RUBBER SYSTEM
AND ASSOCIATED COMPANIES

*Our Dominion Hose, Packing and Industrial Rubber Goods are all the Same High Standard as Dominion Friction Surface Belting.*

## Dominion Rubber System Service Branches

| | | | |
|---|---|---|---|
| Halifax | Toronto | Fort William | Edmonton |
| St. John | Hamilton | Winnipeg | Calgary |
| Quebec | London | Brandon | Lethbridge |
| Montreal | Kitchener | Regina | Vancouver |
| Ottawa | North Bay | Saskatoon | Victoria |

### BELTING

Transmission: "Dominion," "Keewatin," "Para."

Conveyor: "Rockproof," "Canadian," "Hiheat."

Elevator: "Dominion," "Rockproof."

Agricultural: "Lumber King," "Star."

Grain Elevator: "Metcalf Standard," "Grain King."

### HOSE

Air: "Kushion Kover," "4810 Airtite."

Steam: "Indestructible," "Rockproof," "Para."

Water: "Indestructible," "Para," "Kushion Kover."

Suction: "Para," "Star," "Trade."

Garden: "Canadian," "Dominion," "Star."

### PACKING

Sheet: "Join-Tite," "Star," "Importers."

Rod: "Cabestos," "Valve-Bestos," "Canadian."

Valves: "Montreal," "Commercial," "Canadian."

### MISCELLANEOUS

Mats, Matting and Flooring, Plumbers' Specialties, Rubber - Covered Rolls, Friction Tape, Splicing Compound, Dredging Sleeves, Hard Rubber Goods, Tubing, Rinex Soles, Catspaw Heels, Jar Rubbers, Moulded Goods.

# Fuel Conservation —A Suggestion

## ASKS SHIPPING COMPANIES TO CONSERVE FUEL

### Board Issues No Order But Makes Suggestion

### BUNKERS ONE WAY ONLY

### Coal for Return Voyages Should Be Secured on Other Side

By Canadian Press.

Ottawa, July 29.—While no order will be issued at present prohibiting the bunkering of ships at Atlantic ports with United States coal in o der to conserve the supplies of ported coal, a step that was ered possible a short ti Railway Commission number of sugges ping compani ing, whi

The necessity of conserving Canada's coal supply is urgent, and is having the attention of all Ship Owners.

An investigation of the use of highly superheated steam will disclose that superheating is a practical method whereby fuel can be conserved.

To-day over 2,000 ships are equipped with fire tube superheaters, and obtain average fuel savings of 15%.

A ship which cannot profitably remain in service on account of its cost of operation may be placed in the economical class by the application of fire tube superheaters.

Fire tube superheaters can be installed while the ship is in port without loss of revenue service. Fire tube superheaters are your opportunity to conserve your fuel.

Our engineers are at your service.

Further information and bulletins on request.

## The Superheater Co., Limited

Transportation Building, Montreal

WORKS AT SHERBROOKE, QUEBEC

*Designing Engineers and Manufacturers of Superheaters and Pipe Coils for All Classes of Service.*

M.L.L. LAST AD.

MADE IN CANADA

SUPERIOR GRAPHITE PAINT
It Prevents Rust

# Protection Demands Good Paint

It is a demonstrated fact that just mixing materials will not produce a high quality protective paint even though the pigments and oils used are of highest quality. Paint must be made right — under proven formula that will produce maximum durability.

Superior Graphite Paint has found a wide preference in the railway field because of its remarkable performance under actual service conditions. For thirty-five years it has given dependable service and it is recognized as the leader among metal protective paints.

Remember that when you specify Superior Graphite Paint you are assured of the ultimate in paint service and economy. Superior Graphite Paint is a safe investment in the long run. It is one of the Degraco line of dependable paints.

*Color Cards and Painting Specifications on Request*

**DOMINION PAINT WORKS, LIMITED**

*Makers of*

*Degraco Paints, Varnishes, Enamels.*

WALKERVILLE - - - CANADA

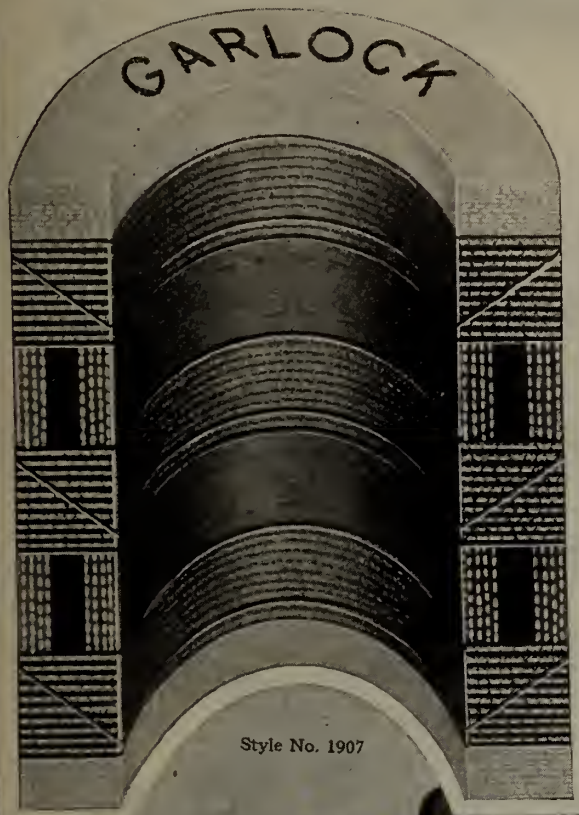
Montreal
Quebec
Toronto

Winnipeg
Sydney
Vancouver

DEGRACO

Paints - Varnishes - Enamels

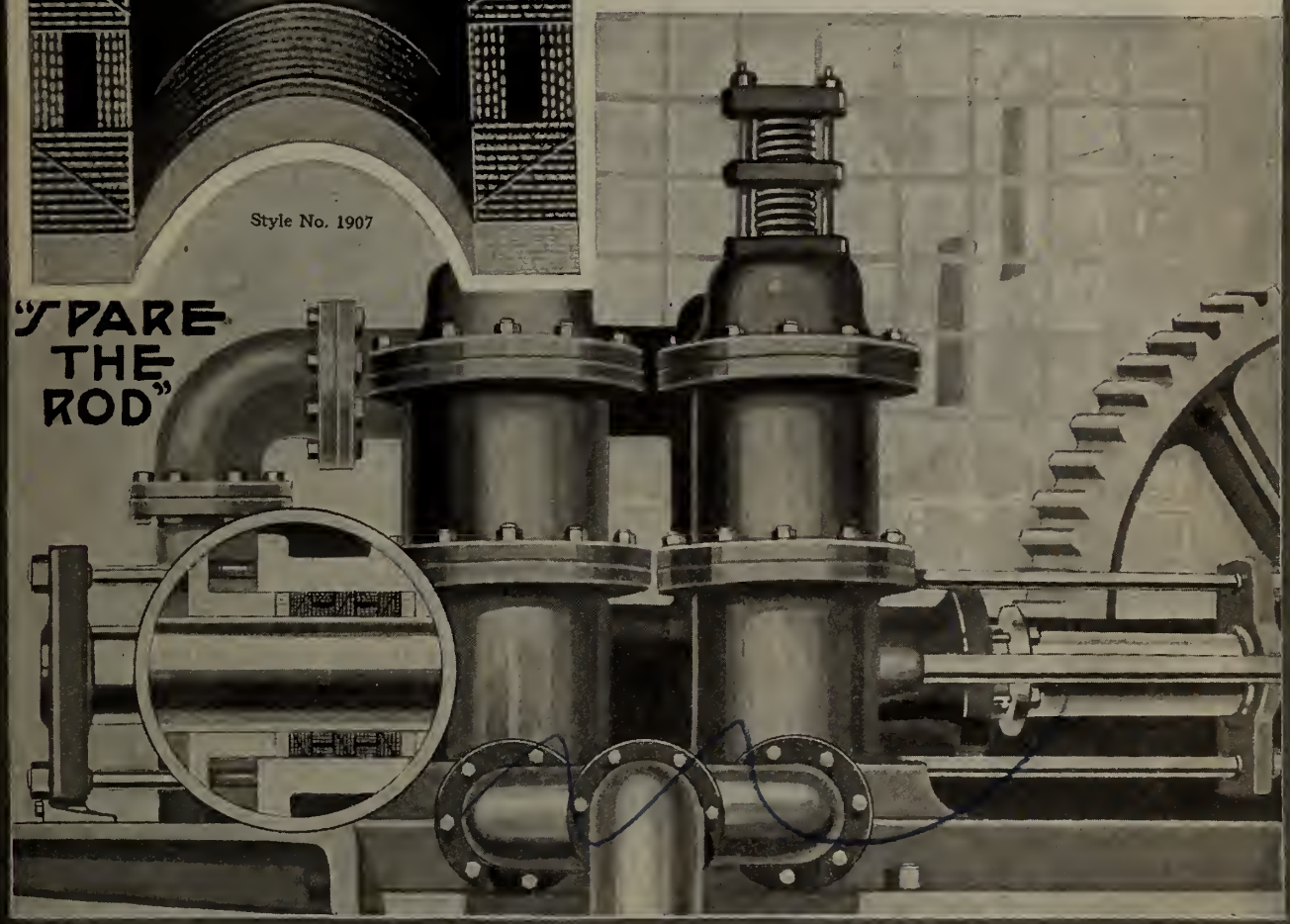
# OUTSIDE PACKED PLUNGERS




Stuffing box leakage and excessive friction on rods and plungers of pumps handling boiler feed are of vital importance at this time, when the larger part of ultimate profit must be saved out of operation.

A packing specially designed for a given service, combining the best judgment and ability of packing experts, is the logical packing to use.

Garlock Hot Water Duo (Style No. 1907) is the best known packing for service on outside packed plungers handling extremely hot water, reducing friction to a minimum and preventing leakage loss under all pressures used in feed pump service.

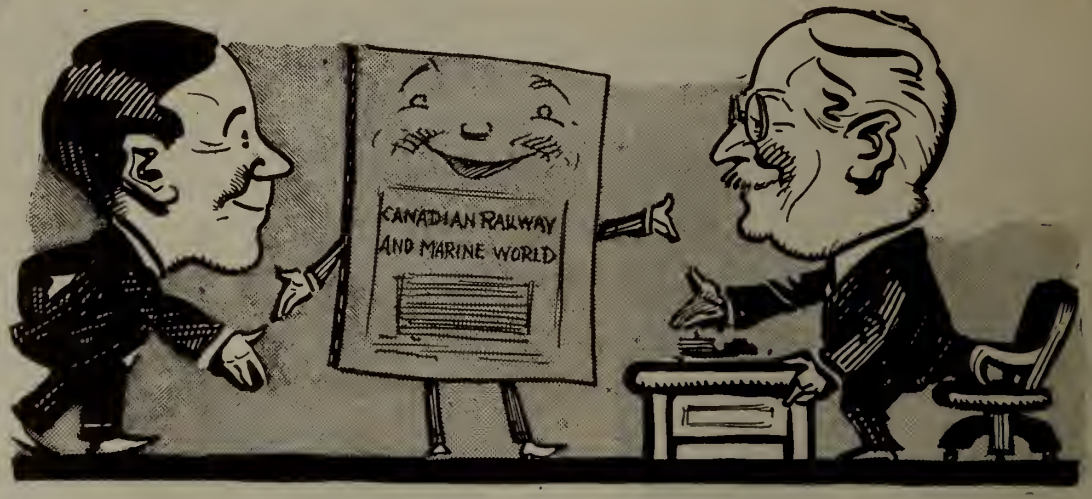



# GARLOCK PACKINGS

**The Garlock Packing Company**
HAMILTON, ONT.

Branches:

Montreal, Que. Winnipeg, Man. St. John, N.B.
Toronto, Ont. Calgary, Alta. Vancouver, B.C.




CHAPTER 11.

# Our "Introduction" is Like a Letter From a Friend

You men who sell things know how hard it is for you to get to the responsible department heads of large corporations.

Not because they are not interested in what you have to say and to sell; but because there are too many of you and too few minutes in a working day.

The result is, that they see the few whom they feel they know and can depend on, and turn away the many who have not yet "qualified."

A favorite artifice of some salesmen is to make the acquaintance of a friend of the man they wish to see, and to carry from that friend a letter of introduction that will penetrate beyond the purlieu of "his majesty the doorkeep."

But, a better plan than that, because more direct and more all-inclusive, is to carry out an intelligent, **information-giving** advertising campaign in

## CANADIAN RAILWAY AND MARINE WORLD

We say this advisedly, at the suggestion of more than one busy official; for bear in mind that the man who bears on his shoulders the responsibility of recommending, specifying or buying, equipment or materials feels the need of honest information — is hungry for **facts** and weary of time-eating interviews with salesmen.

The sort of advertising **they** want you to print in **their** paper will open the doors to your salesmen; shorten the route to distinguished preferment and fill their order books—if their goods are worthy and their prices right.

## CANADIAN RAILWAY AND MARINE WORLD

**Toronto** *Member of* **Canada**

*Audit Bureau of Circulations, Associated Business Papers, Canadian National Newspapers and Periodicals Association, Canadian Press Association.*

The **Strength** and **Toughness** of

# "DOMINION" WIRE ROPE

Make it DURABLE,
SAFE and ECONOMICAL

**THE DOMINION WIRE ROPE CO., LIMITED**

Head Office: MONTREAL Branches: TORONTO, WINNIPEG

# The Best Ballast Car Ever Built

**Canadian National Railways Standard Ballast Car**

**For Ballasting Center Dump**

**For Ballasting Side Dump**

**For Coal or General Service**

**Built of Materials Obtained in Canada**

**Built to any size or Capacity**

*Write for Booklet No. 19 for further information.*

—DESIGNED, PATENTED AND BUILT IN CANADA—

## The HART-OTIS CAR CO., Limited, MONTREAL

We carry only goods of the Highest grade, quote Lowest prices, and GIVE BEST OF SERVICE

## "MARION" Steam Shovels

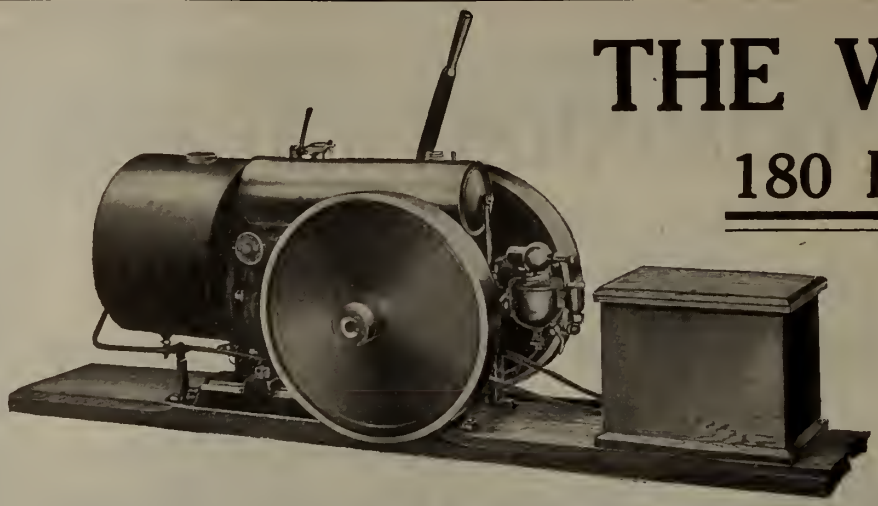
**DITCHERS—UNLOADERS**

## "Industrial Works" Pile Drivers and Cranes

**Branch:**
**108 Mail Building**
**TORONTO**

**F·H·Hopkins & Co. Limited**

**Head Office:**
**MONTREAL**



# THE WOOLERY

## 180 Lbs. 5 H. P.

**SIX EXCLUSIVE POINTS OF SUPERIORITY**

No one feature ever made a successful engine regardless of the excellence of that one. Scientific design in combination with our various patented features places the Woolery in the lead as a mechanically superior engine. New enough to be highly improved—old enough to be thoroughly tested.

*HERE ARE THE BIG SIX*

- PATENTED, SELF-ADJUSTING SLIDING BASE
- WELDED STEEL WATER JACKET—FROST PROOF
- UNIT SPEED CONTROL—ONE LEVER FOR ALL SPEEDS
- HOLLOW CRANK SHAFT, STRONG YET LIGHT
- IMPROVED SHIFTING LEVER—PRESS BUTTON TYPE
- LONG STROKE GIVING HIGH TORQUE AND LONG LIFE

YOU WANT light weight, high power, low gas consumption, durability, easy operation, dependability, A-1 service 365 days in the year and you get them all when you get a Woolery. Write for details.

*5 and 10 H. P. Reversible Railway Engines.* *Guaranteed Four Years.*

Canadian Agency—Dominion Equipment & Supply Co., Winnipeg, Man.

**WOOLERY MACHINE CO., Minneapolis, Minn., U.S.A.**

*MANUFACTURERS*

# Railway and Power Engineering Corporation Limited

# Steam and Electric Railway Supplies and Equipment

*Armature and Field Coils*
*Commutators*
*Copper Hammers*
*Soldering Coppers*
*Controller Fingers*
*Brush Holders*
*Brake Shoes*
*Trolley Poles*
*Trolley Wheels*
*Trolley Wheel Bushings*
*Trolley Catchers*
*Trolley Bases*
*Line Material*
*Sweeper Rattan*
*Jewel Car Heaters*
*H & W Electric Heaters*
*Trolley Rope*
*Gear Cases*
*Fare Boxes*
*Morganite Brushes*
*O'Bannon Fabrics*
*Steam Hose Couplers*
*High Speed Drills & Reamers*
*Railway Car Seats*
*Garland Ventilators*
*Locomotive Sanders*
*Bell & Signal Cords*
*Chausse Torches*
*Pneumatic Door & Step Control Motors*
*Generators, Etc., Etc.*

*SEND US YOUR ENQUIRIES*

**Head Office:**
133 Eastern Avenue,
TORONTO.

**Branch Offices:**
MONTREAL, WINNIPEG,
NEW GLASGOW.

# FARLOW

The Perfect Harness

## DRAFT ATTACHMENT

Furnishes the strongest connection between the draft gear and car underframe.

Service buffing and pulling shocks are transmitted to the car frame at a number of points, preventing distortion of sills, breakage of friction barrels or springs, and consequent necessity for repairs.

## The T. H. Symington Company

**New York** **Works at Rochester** **Chicago**

THE McKIM GASKET

THE McKim Gasket comprises a proper combination of soft, ductile metals and a variety of elastic packings, resulting in a gasket capable of resisting heat, pressure and chemical action of any circulation, at a minimum tension on bolts and unions.

The McKim Gasket combines all the attributes of a perfect packing, forms a natural expansion joint, will not spread, is impossible to blow out, can be used again and again, is a factor of safety, and is as good as an insurance policy.

Save 50 to 80% of Gasket Expense. Supplied to every service, in all sizes and shapes.

*Exclusive Canadian Agents*

## The Holden Co., Limited

350-356 St. James St.,
MONTREAL, QUE.

TORONTO
342 Adelaide St. W.,

WINNIPEG
150 Princess St.

VANCOUVER
81 Pender St. W.

A Great Many Large Plants Are Using

# COMMERCIAL ACETYLENE

On Small Work

Repairing a small cast iron bracket at a large shipbuilding plant. Our tanks are convenient, safe and guaranteed to hold quantity and quality gas.

MAIN OFFICE:
80 Broadway, New York
BRANCHES:
ATLANTA, GA.
AURORA, ILL.
BOSTON, MASS.
BOUND BROOK, N.J.
EAST DEERFIELD, MASS.
SAN FRANCISCO, CALIF.
MOBERLY, MO.
W. BERKELEY, CALIF.

**Commercial Acetylene Supply Company, Inc.**

18 TORONTO STREET TORONTO

# Taylor & Arnold Engineering Company, Ltd.

MANUFACTURERS OF

Detroit Lubricators Turntable Tractors
Pitt Jacks
Taynold Electric Locomotive Headlight Equipment
Bell Ringers Coupler Parts
Ships Blocks and Tackle
Ships Telegraphs, Engine Room, Docking and Steering

*Head Office:*
Bank of Toronto Bldg., MONTREAL.

*Works:*
100 Ann Street, MONTREAL.

# YARROWS LTD.

## VICTORIA, B.C., CANADA

Associated with YARROW & CO. LTD., Glasgow

SHIPBUILDERS SHIP REPAIRERS ENGINEERS

Builders of fast shallow draft vessels propelled by sternwheel or Yarrow Patent system of propellers working in tunnels. Vessels shipped in packing cases ready for re-erection.

ADDRESS FOR LETTERS
P.O. BOX, No. 1595,

| Marine Railway, 315 ft. long, 3000 tons D.W. Capacity. | Esquimalt Dry Dock, 480 ft. x 65 ft. |
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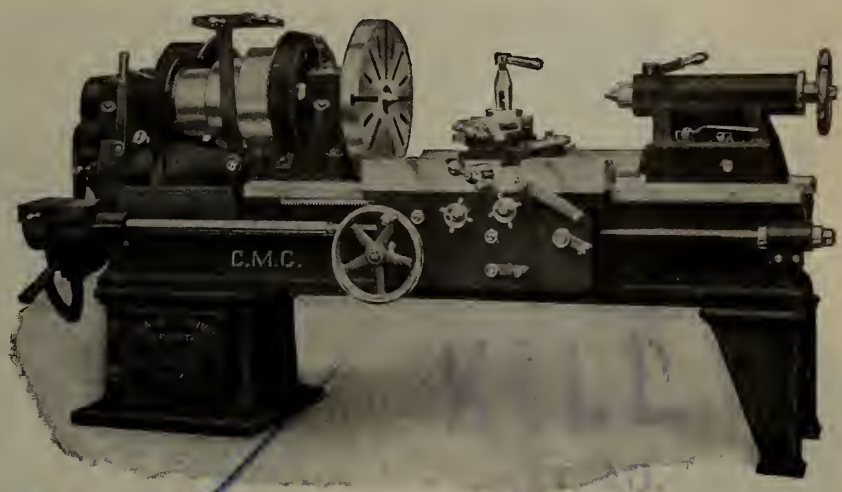
TELEGRAMS AND CABLES
"YARROWS, VICTORIA"

C.M.C.

# LATHES

Engine lathes
14" to 48" Swing




*WE MANUFACTURE A FULL LINE*—Engine lathes with quick change gears and double back gears, triple geared to face plate drive lathes, gap lathes with quick change or plain change gears, face lathes, break lathes, extension bed lathes, etc.

CANADA MACHINERY CORPORATION, GALT, ONTARIO
LIMITED

*We Can Supply*

# STEEL PLATE

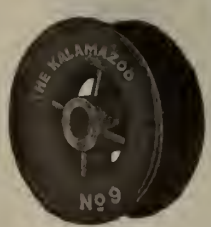
in

Universal Edge up to 40" wide.
Sheared Edge up to 60" wide.

Any thickness
Any lengths.

*Send us your enquiries*

**DOMINION FOUNDRIES & STEEL, Limited**
HAMILTON - ONTARIO




**The Star Brass Works**
*Largest Exclusive Trolley Wheel Makers in the World.*
**Kalamazoo Michigan**

**Canadian Representatives:**
**Northern Electr Company, Limited**
Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

**Dawson & Co., Limited, 148 McGill St., Montreal**
**352 Donald St., Winnipeg**

# The Collingwood Shipbuilding Co.

**Limited**

COLLINGWOOD—ONTARIO and KINGSTON—ONTARIO—CANADA

**Steel Ships, Engines, Boilers, Castings, and Forgings**

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK

S.S. CANADIAN WARRIOR

Two Dry Docks
and
Shops
EQUIPPED TO
OPERATE
Day or Night
on
Repairs

**MINER**
**FRICTION DRAFT GEAR**

**CLASS A-18-S**

**THE PERFECT DRAFT GEAR**

**MINER**
**BALANCED SIDE BEARING**

**SAVES RAILS WHEELS AND COAL**

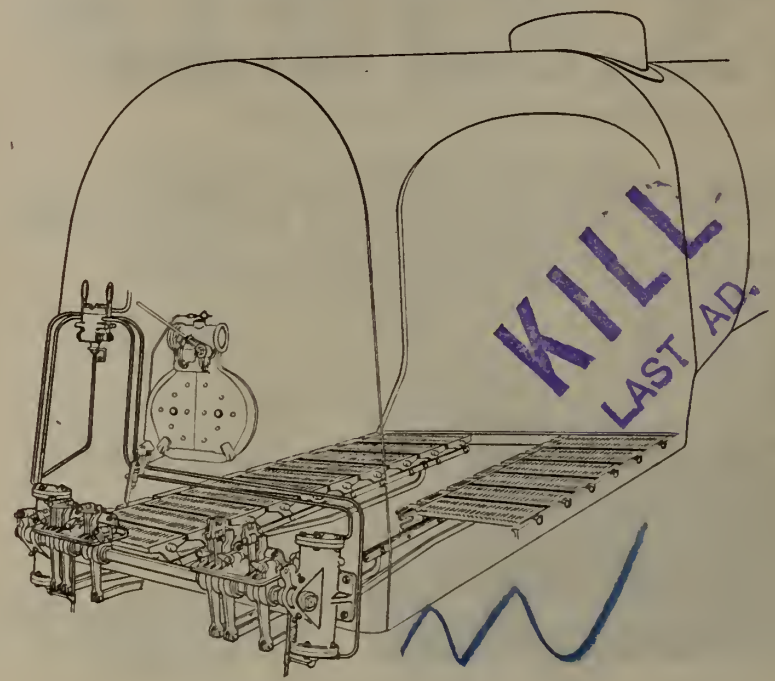
# CANUCK SUPPLY CO., LTD.

**MONTREAL**

**W. H. MINER**
**CHICAGO**

Made in Canada

# MORE MILEAGE




Franklin Steam Grate Shaker

Speeding engines over the ash pit increases the time available for hauling trains.

Franklin Steam Grate Shakers dump fires by steam power in 5 to 15 minutes.

They avoid the cumulative delay of one engine waiting on another while muscle does the work.

They help keep your power on the job.

**Franklin Railway Supply Co. of Canada, Limited**
Transportation Bldg., Montreal

PAGE-HERSEY TUBES, LIMITED

MADE IN CANADA.

P⌀H

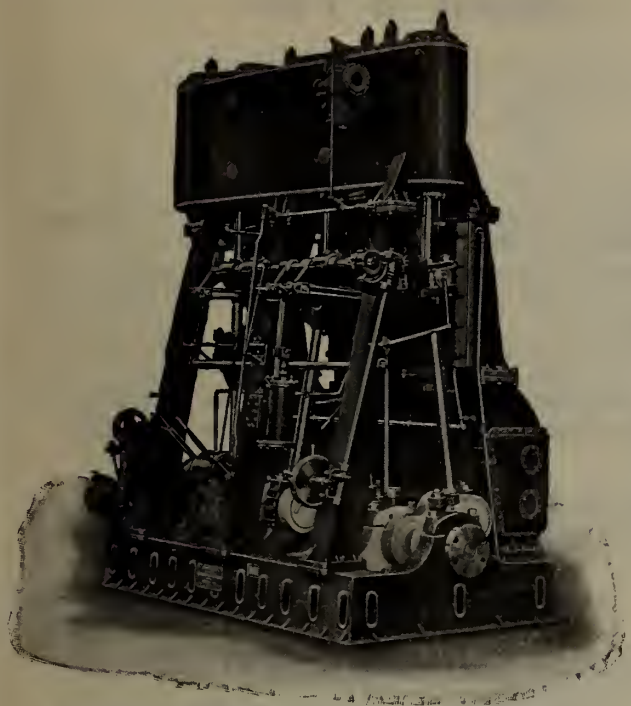
# Tubular Poles

NEAT, UNIFORM AND ORNAMENTAL
in appearance, combined with
GREAT DURABILITY, STIFFNESS AND STRENGTH
make them ideal for
ELECTRIC LIGHT AND POWER
TELEPHONE, TELEGRAPH
AND STREET RAILWAY
LINES
and also for
FLAG POLES,
all sizes and weights.

ILLUSTRATION SHOWS A LINE OF P⌀H WROUGHT TUBULAR STEEL POLES ON THE BLOOR STREET VIADUCT—TORONTO, CAN.

HEAD OFFICE:
**100 Church Street - Toronto, Can.**

# Robb Engineering Works, Limited



40" Stroke Engine Built for Imperial Munitions Board.

BUILDERS OF

Marine Engines
Scotch Boilers
Water Tube Boilers
Lighting Sets

---

**Works - Amherst, N. S.**

**Montreal Office, 16 Cathcart Street**

McAvity

BRASS AND IRON PRODUCTS

## "WORLD" BRASS VALVES

A worthy product of one of the great engineering plants in Canada.

The workmanship is of the high order that has made the name "McAvity" synonomous with absolute reliability, in the engineering world.

ANGLE VALVE

**T. McAVITY & SONS, LIMITED**

St. John, N. B.

WINNIPEG, MONTREAL, VANCOUVER, TORONTO.

GLOBE VALVE

# Important Points about a File

The most important points about a file are:

(1) Quality of steel
(2) Temper of steel
(3) Shape of teeth
(4) Balance

Famous Five Files are made of special alloy steel, tested for file purposes.

It is thoroughly hardened to endure much usage.

The teeth are cut to the proper shape for the work they have to do.

The whole is nicely balanced for ease in handling.

Attention to these points has made Famous Five Files the standard for over fifty years. The Famous Five brands are:

**KEARNEY & FOOT GREAT WESTERN**
**AMERICAN ARCADE GLOBE**

*Made in Canada by*

## Nicholson File Company

PORT HOPE - ONTARIO

GRAND TRUNK RAILWAY SYSTEM

# Hunt This Fall in Real Haunts of Red Deer

## THE HIGHLANDS OF ONTARIO

Maganatewan River, French River, Muskoka, Georgian Bay, Lake of Bays, Timagami and other Famous Regions.

## OPEN SEASONS

Moose, Deer, Reindeer or Caribou

Nov. 5th to Nov. 20th, both days inclusive.

In some of the Northern Districts of Ontario, including Timagami, the open season is from October 25th to November 30th, both days inclusive.

*Write to any Agent, Grand Trunk System, for full information, or to:—*

**E. C. ELLIOTT,**
**District Passenger Agent,**
**Montreal, Que.**

**C. E. HORNING,**
**District Passenger Agent,**
**Toronto, Ont.**

# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

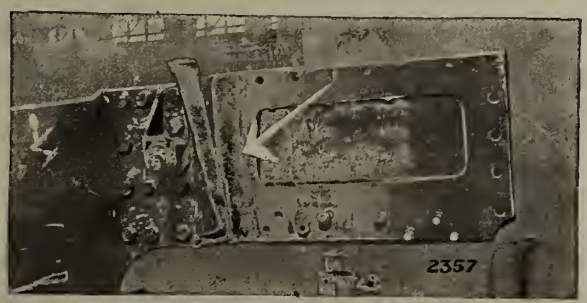
Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

***For prices and particulars write to***

**Head Office - - New Glasgow, Nova Scotia**

**Western Sales Office, Room 14, Windsor Hotel, Montreal**




KILL
LAST AD.

Testimonial THERMIT WELDING No. 10,005

**From the Southern Railroad, Knoxville, Tenn.**

"The accompanying illustration shows a Thermit repair of a cast steel cylinder saddle and frame connection to a low pressure cylinder Mallet locomotive.

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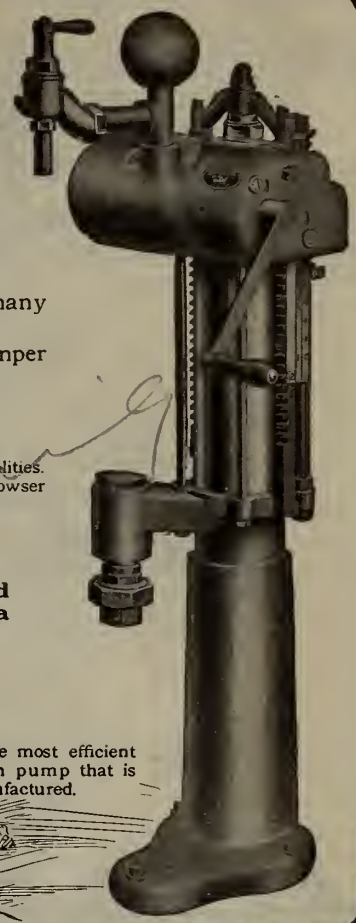

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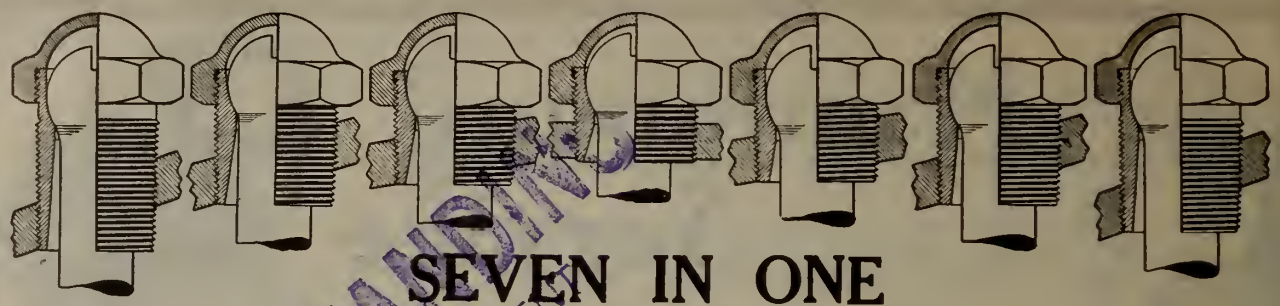

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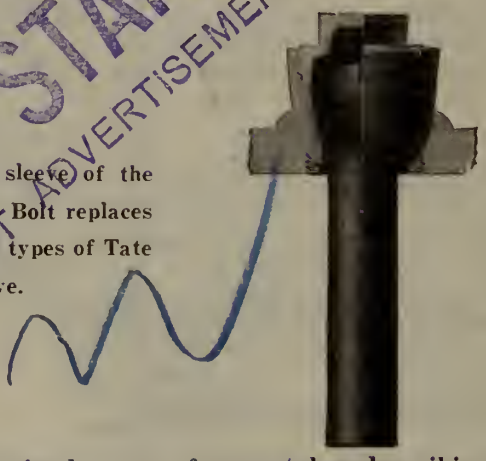

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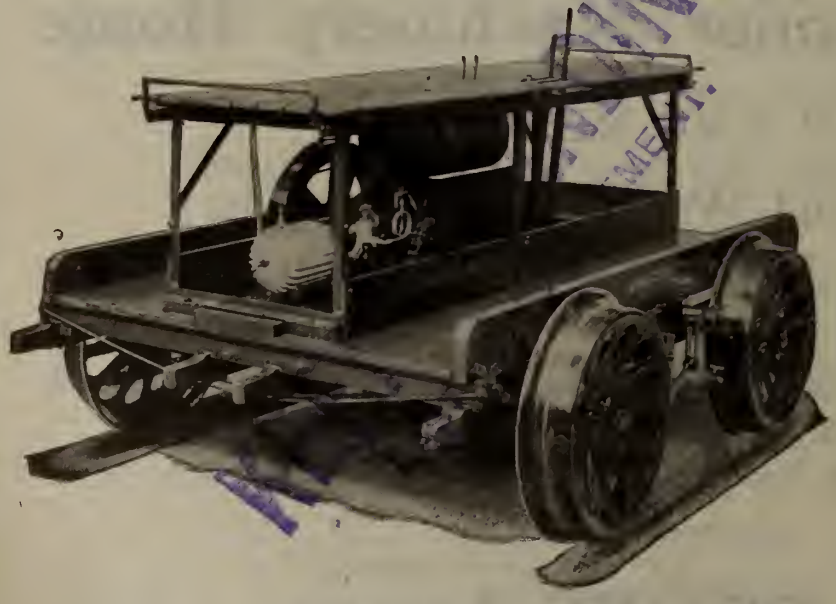

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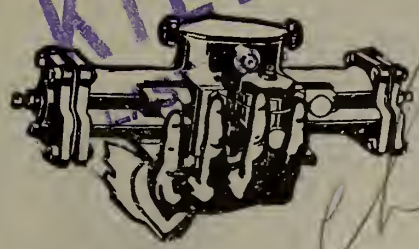

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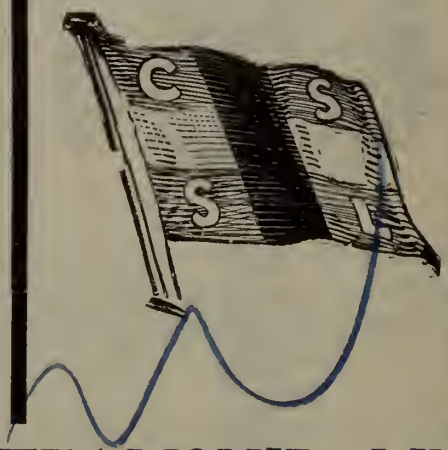


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# Canadian Railway and Marine World

November, 1920

## Snow Fighting Equipment.

By W. H. Winterrowd, Chief Mechanical Engineer, Canadian Pacific Railway.

The earlier portions of this paper were published in Canadian Railway and Marine World for September and October.

**Grand Trunk Pacific Rotary Ploughs.** Fig. 32 shows a rotary plough built by the Bucyrus Co. for the Grand Trunk Pacific Ry. As far as the writer has been able to learn, only two of these ploughs were built. The wheel is of a modified scoop type, and has 10 radial scoops, the inner ends of which are fastened to a steel casting keyed to the main shaft. The general form of the scoop is the same as in the rotaries described previously, except that the adjoining edges of the scoops are brought straight out towards the face of the wheel. The flanges of a heavy hinge casting are placed over the double edges thus formed. This casting is fastened by rivets passing through both flanges and the adjoining edges of the scoop plates. Near the outer periphery of the wheel, heavy braces or spacer bars are applied between each hinge casting. The cutting blades are double edge and made of cast steel. Each blade adjusts itself automatically and independently and no connecting links are used. The inner ends of five of the knives are carried close to the center of the wheel; the other five knives are shortened so that they will not interfere with the longer ones.

**Union Pacific Rotary.** — Four rotary snow ploughs were built by the Union Pacific Rd. The cutting wheel is built up around a cast steel center secured in the usual manner to the front end of the

Fig. 32. Grand Trunk Pacific Ry. Rotary Snow Plough.

wheel shaft. This casting is spool shaped. The front is 50 in. in diameter and contains a number of spokes. On three of these spokes the small center cutting knives are hinged. The outer ring of this center casting forms the inner ring of the wheel. The outer ring is of mild steel 1 x 4 in. section. Between the inner and outer rings are riveted two types of cast steel arms. Each alternate arm is provided with bosses for hinging knives. The front edges of the ½ in. plate partitions are riveted to the arms without bosses. The plain arms also serve as stops for the knives, which are double edged and of cast steel, and which adjust themselves independently without connecting links. These knives are hinged to the bossed steel arms by means of continuous pins. A drop nose and very substantial cutting wings are fastened to the front casing. The drop nose is operated by air and the cutting wings are heavily braced in working position. When not in use, the wings are drawn in by means of levers operated by a hand screw. The boilers on these ploughs are equipped with superheaters. The use of highly superheated steam provides a substantial increase in power and reduces the consumption of fuel and water, enabling the plough to remain out longer without running for an additional supply.

Fig. 33. Canadian Pacific Ry. Heavy Rotary Snow Plough.

**Canadian Pacific Heavy Rotary.**—The greatest test of a rotary snow plough is its ability to cut through snow slides. The plough can be subjected to no heavier service than one which is occasionally required on all roads crossing the Rocky, Cascade and Selkirk Mountains. The snow in these slides is not only packed exceedingly hard, but often contains trees and rocks. It is impossible for rotaries to overcome such obstacles. It is generally customary to probe the slide with sounding rods to locate them, and, if possible, they are removed by blasting, or by being pulled out. Sometimes, however, these obstacles are not discovered and when the plough encounters them the ordinary cutting knives are generally damaged and the plough often put out of commission. The repair of the knives is generally difficult and slow.

During the winter of 1908-09, Mr. George Bury, then General Manager, Western Lines, C.P.R., decided that a plough was needed which would not break down, and he stated that he wished a rotary plough with cutting knives of 2 in. armor plate, and the rest of the plough built in proportion. The following spring, authority was given for two such ploughs and arrangements were made with the Montreal Locomotive Works for their construction. H. H. Vaughan, then Assistant to the Vice President of the C.P.R., engaged John Player, Consulting Engineer of the American

Locomotive Co., to prepare the designs in collaboration with him. As a result it was decided to modify considerably the wheel direct in marine engine style, and that the frame of the plough should resemble a bridge girder to thoroughly

Fig. 34. Canadian Pacific Ry. Heavy Rotary Snow Plough.

Fig. 35. Front of Center Casting.

Fig. 36. Rear of Center Casting.

Fig. 37. Cast Steel Segment.

construction of existing ploughs. It was Mr. Vaughan's idea that better results could be obtained by driving the plough

Figure 39.

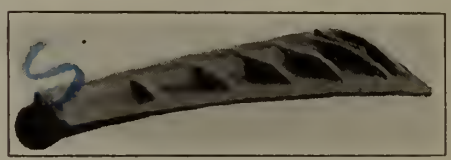


Figure 40.

Figure 41.

Figure 42.
Cutting Knives and Nose Piece.

support the casing or hood. This idea has been justified, as the ploughs operate with practically no vibration. It was decided to build the ploughs, incorporating these ideas. The finished ploughs are shown in figs. 33 and 34, and are the largest and most powerful that have ever been built.

The design of a tremendously strong and rugged wheel was one of the most important problems. To have made the cutting knives and scoops of exceedingly thick plate, and all other construction in proportion, would have resulted in a weight that was impractical. A wheel, however, was built which was quite different from any others and which was immensely strong. The wheel was made of cast steel. As no facilities were avail-

Fig. 38. Assembled Wheel, without Cutting Knives.

Fig. 43. C.P.R. Heavy Rotary Snow Plough Wheel, being balanced.

Fig. 44. Completed Wheel in Place, on C.P.R. Heavy Rotary Snow Plough.

able for machining or annealing a casting of the required size, a built-up construction was used. The center casting, the front and back of which is shown in figs. 35 and 36, was made in octagon form 80 in across the flats. Fig. 37 shows one of

the eight segments which were bolted to the faces of the center casting. These segments follow the curved form of a scoop wheel and have at the outer edges 6 in. diameter bosses for 2½ in. diameter hinge pins. The segments are bolted to the center casting with 2¼ in. diameter bolts. The adjacent segments are bolted together through flanges at their rear edges.

Fig. 38 shows the wheel assembled before the cutting knives are attached. This view shows the 1¼ in. thick by 10 in. wide band bolted to the segments, and which helps hold them in place. The band is increased in thickness to compensate for the hinge pin and bolt holes. This band is made in section with L shaped lugs on each end which fit into grooves in the segments.

Fig. 39 shows the inside of one of the massive cast steel knife blades. Figs. 40 and 41 are other views of these blades and show how they are heavily ribbed. These blades are ⅝ in. thick at the cutting edge.

Fig. 42 shows the nose piece for the center of the wheel. Fig. 43 shows the completed wheel, without the nose piece, being balanced. As shown in this view, the wheel weighed 24,000 lb. and as it was designed to run at 400 revolutions per minute it was necessary to balance it accurately.

Fig. 44 shows the finished wheel in place on the plough.

Figs. 45 and 46 show the arrangement of engine and plough. The casing is made of ¾ in. plate and tapered to eliminate any flat surfaces on which snow or ice might accumulate. The bottom of the casing is reinforced by an additional ¾ in. plate. The back of the casing consists of steel castings with flanges for attachment to supporting gusset plates. This view also shows the boiler and engines in place, as well as the taper wheel fit on the front end of the main shaft. The main shaft is 11⅛ in. in diameter and 12 ft. 2 in. long. The front bearing is 11⅛ in. in diameter by 28 in. long. Behind the front bearing is a marine type thrust bearing with 10 collars. There is a rear bearing 10 in. in diameter by 16½ in. long. The thrust bearing, which is peculiar to this plough, is intended to take up the thrust ordinarily received by the back wall of the wheel casing. It has proved of decided benefit in service. The engines are of the marine type and have cylinders 20 in. in diameter and 24 in. stroke. The steam chests are cast integral with the cylinders. The supporting columns are cast steel. As head room was limited, the connecting rods are short in proportion to the stroke, and the area of the cross-head bearing surfaces was increased accordingly. The crank pin of the engine was connected to a crank disc on the rear of the wheel shaft by means of a drag link coupling. This was used in case there should be any variation in alignment of the wheel shaft and engine crank shaft and to prevent any bending strains from being transmitted from one to the other. Duplicate reverse lever and throttle are provided so that the engine can be operated from either side.

Fig. 47 shows the main frames and gusset plates which support the casing. The frames are box girders 36 in. deep at the front end. The outside plate of the girder is ⅜ in. thick and the inner ½ in. thick. The top and bottom members are 13 in. ship channels. The boiler applied to these ploughs is similar to those of the Canadian Pacific class M-4 consolidation type locomotives. It has 2,108 sq. ft. of heating surface and 44 sq. ft. of grate surface, and is of greater capacity than any boilers that have been used for snow plough service. The trucks are of the 6-wheel type specially designed for the purpose, and have cast steel frames. The axles have 7 x 12 in. journals, and the steel tired wheels are 34 in. in diameter.

In working order, these ploughs weigh 260,000 lb. The weight is practically equal on the two trucks. The tender has a water capacity of 7,000 Imperial gallons and holds 16 tons of coal. The tender was made 32 ft. long over end frames, as, on account of bridge limitations, it was necessary to separate the weight of the plough from the weight of the pushing locomotives. The tender trucks are of the 4-wheel, equalizer pedestal type, using standard engine truck wheels and axles. An officer who has used them

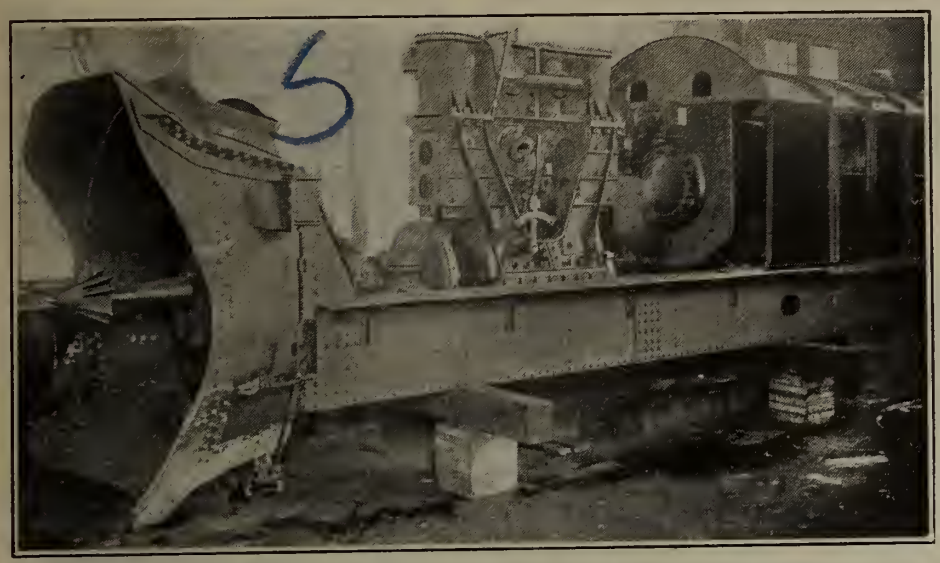


Fig. 45. Arrangement of Engine and Wheel, C.P.R. Heavy Rotary Snow Plough.

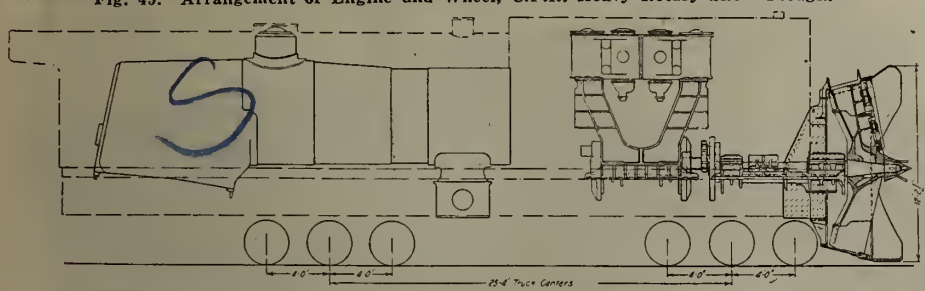


Fig. 46. Arrangement of Engine and Wheel, C.P.R. Heavy Rotary Snow Plough.

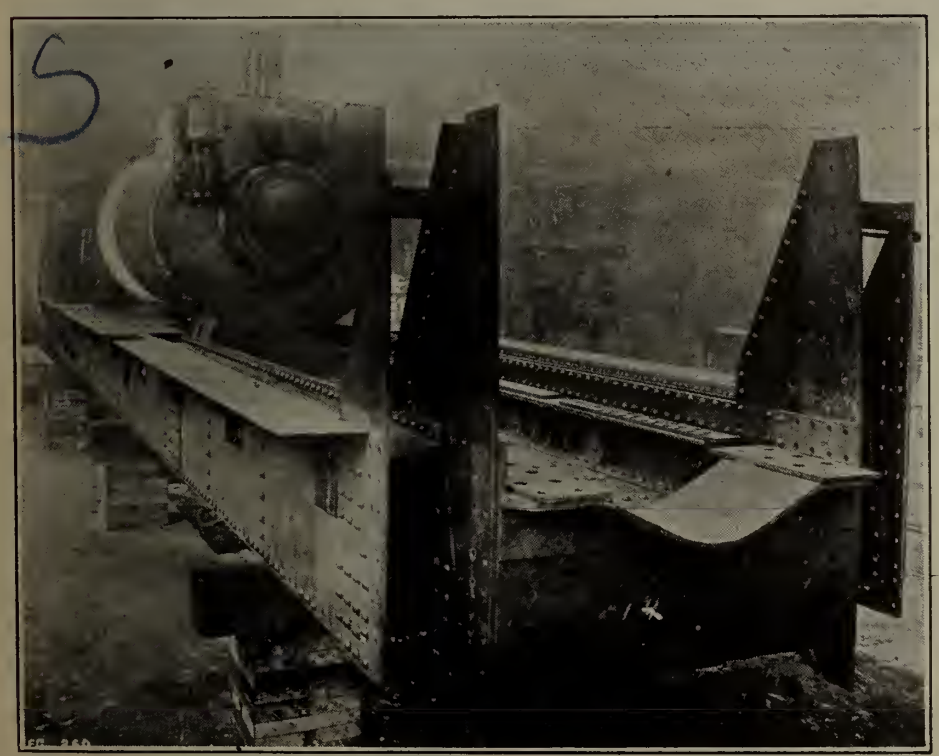


Fig. 47. Main Frames, with Gusset Plates in Position, C.P.R. Heavy Rotary Snow Plough.

states that the knives are quite sufficient for dealing with small trees. They have cut trees 4 in. in diameter. He also states that the slight angle at which the cutting knives are placed makes the

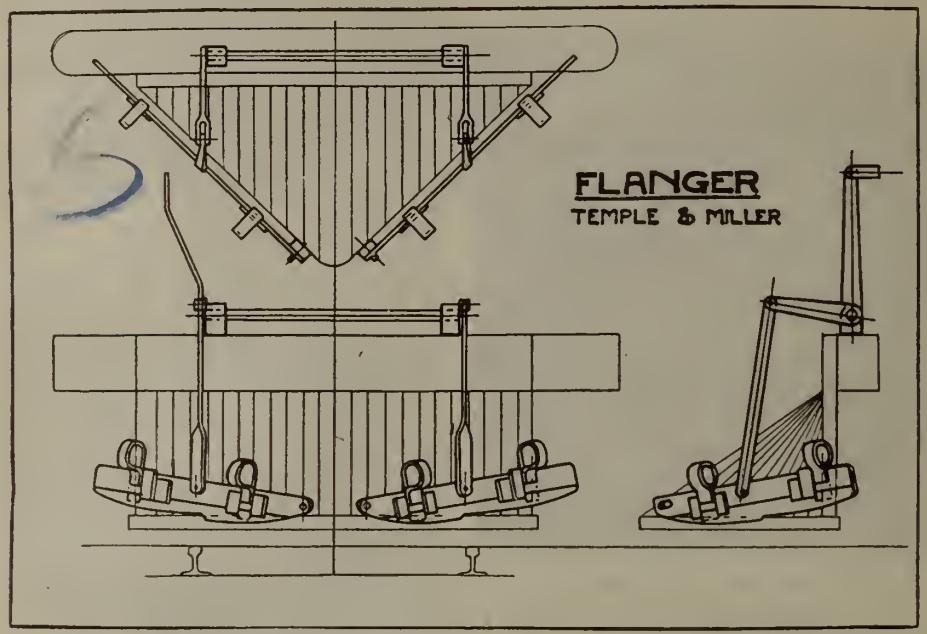



Figure 48.

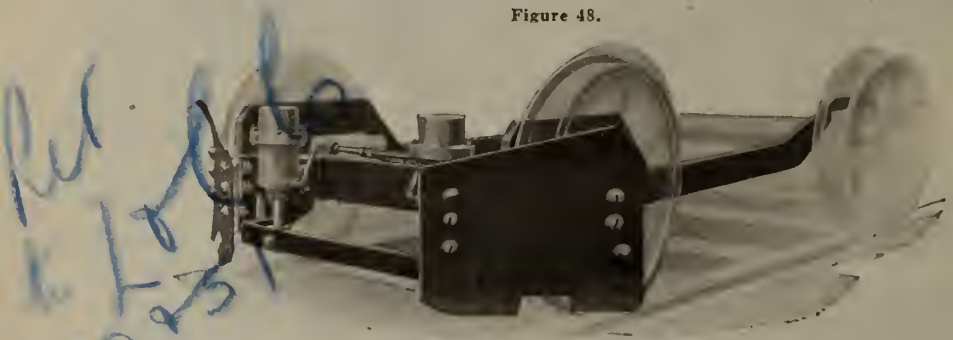


Fig. 49. The Ray Flanger.

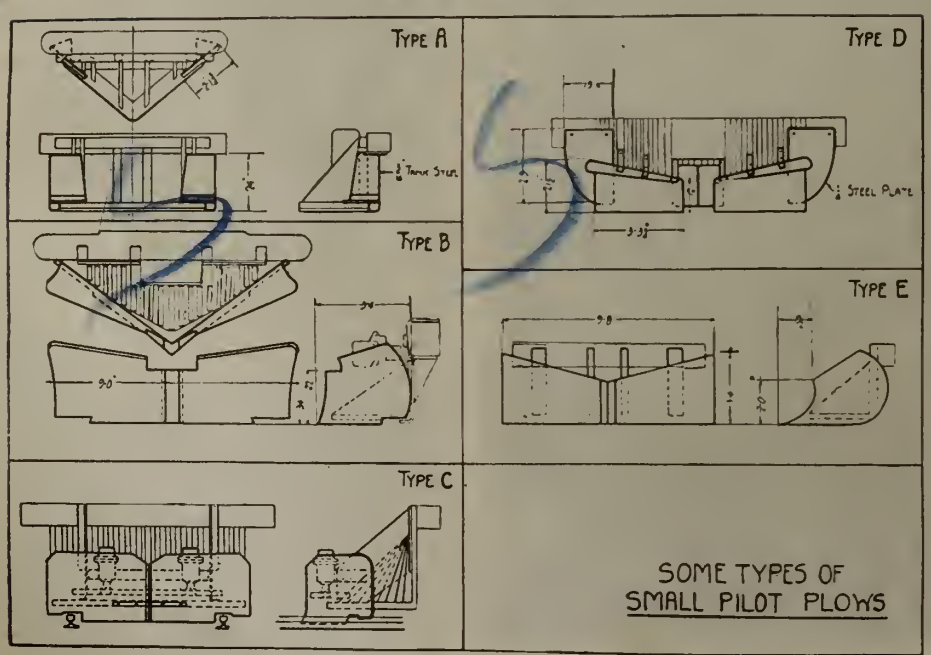



**Figure 52.**

plough somewhat slower in its progress through a slide, but the knives do not break when they strike obstructions such as rocks and trees.

**Flangers.**—In order to properly clean up the track and to clear out the space between the rails for a depth of from 2 to 4 in., flangers are generally used. Flangers are applied either to the front of the locomotive, temporarily to box cars or flat cars, or permanently to snow ploughs or flanger cars. Fig. 48 shows one of the early type of flangers used on locomotives. It was known as the Temple and Miller type. It consisted of a knife-like blade, one end of which was pivoted to the nose of the locomotive pilot. It was lowered and raised by means of lever connections from the locomotive cab, and when down in working position was practically parallel to the side of the pilot. The blade was made in two pieces. The lower one, which could readily be removed or replaced, formed the cutting plate or shoe, and was attached to the upper one by means of springs.

An improved type was known as the Priest flanger. Its general arrangement is similar to that of the Ray type described later, except that it was raised and lowered through a system of levers similar to those of the Temple and Miller flangers, the motive power being supplied by an air cylinder bolted through the running board of the locomotive. The

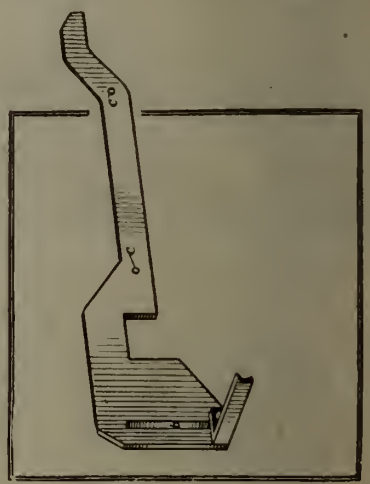


Fig. 50. The Ray Flanger.

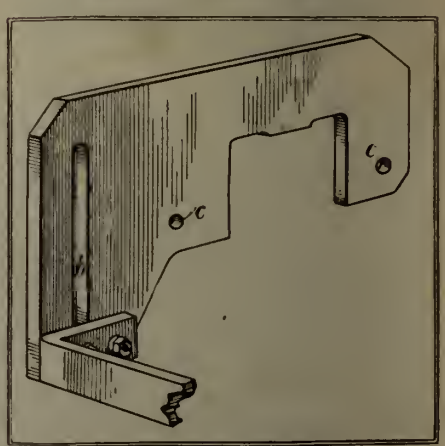


Fig. 51. The Ray Flanger.

manufacturers of the Priest flanger developed the Ray flanger. This widely used flanger is shown in figs. 49,50 & 51. These illustrations show how the air cylinders for raising and lowering the flangers are bolted to the cross tie which connects the front end of special equalizers. The flanger is held in raised position by means of a strong spring in each cylinder. The air is used only to keep the flanger down in operating position. These flangers make a cut 2 in. deep on the inside of the rail and 1 in. deep on the outside. The total width of the cut is about 20 inches. Air for the cylinders is supplied from the locomotive main reservoir, the operating valve being located in the cab within easy reach of the engineer. Ray flangers are made in different styles. By extending the inner edges of flanger blades a very useful combination snow plough and flanger is made. Such a type

is shown in fig. 52, illustrating various types of pilot ploughs. For double track operation, a single cutting plate extending the full width of the trackway is used.

As stated previously, flangers are applied to snow ploughs of various types. Sometimes flangers are attached to a special car. The smallest flanger car is practically a 4-wheel truck to which flangers have been applied. A platform is built over the truck and carries the operating mechanism as well as a load of heavy material to hold the flanger down to its work. The large flanger cars are ordinarily of the caboose type, and are usually equipped with two 4-wheeled trucks. The mechanism for lowering and raising the flanger is contained within the car. The majority of the large cars are equipped with two flangers in order that the car may be operated in either direction. On some roads the flangers are hung from the underframe of the car between the trucks. On other roads they are placed at the ends of the cars outside the trucks. Figs. 53, 54 and 55 show some different types of flanger cars.

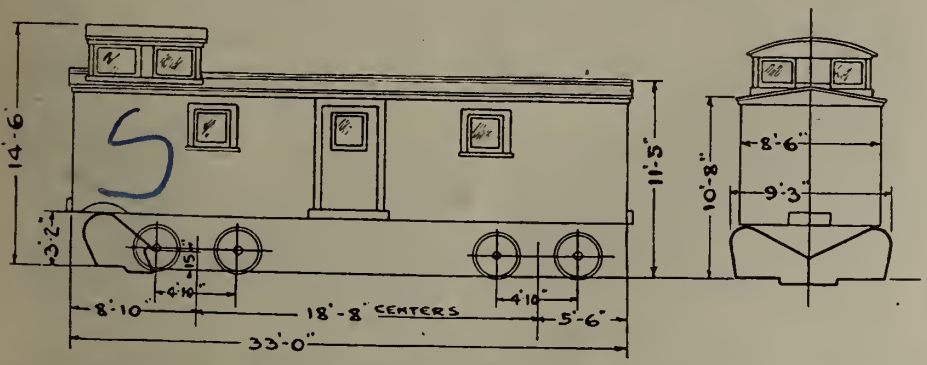



Fig. 53. Flanger Car.

Fig. 54. Flanger Car, Canadian Pacific Railway.

Fig. 55. Flanger Car, Canadian Pacific Railway.

Some of the various styles of flangers used under such cars or other equipment are shown in fig. 56.

Ice Cutters. — The formation of ice around and over tracks in yards is a cause of great delay. Removal by hand is slow and retards switching operations. To remove such ice quickly, the C.P.R. has developed and is using a type of ice cutter shown in fig. 57. This cutter is applied to the plough of a Jordan spreader car. The cutter consists of 29 2 in. square cutting tools of hardened steel, ground to a point at the bottom end. These knives are carried in a flanged channel which is fastened to the plough at the front of the spreader. This method of attachment permits the entire cutter to be raised and lowered by the existing spreader mechanism. Fig. 57 shows the cutter in working position. Figs. 58 and 59 shows the cutter entering a snow and ice covered track and leaving it in clear condition.

Sweepers. — For removing ordinary light snows in yards, a few roads have used the well known street railway type of sweeper. A sweeper of this type is shown in figs. 60 and 61. The revolving brooms at each end of the sweeper are operated by means of a single cylinder reversible steam engine located in the body of the car. This engine takes steam from the locomotive pushing the sweeper. The broom shaft is driven by means of a chain drive. The writer has been advised that these cars are very efficient in removing light snow, and particularly in cleaning up terminals and terminal yards.

**Operation of Equipment.** — All snow fighting equipment should be in good condition before the start of the snow season. This is best accomplished by means of a definite summer repair programme. Snow fighting conditions vary greatly. Some roads, in order to determine the probable weather conditions, keep in close touch with the government observatories, which advise the localities or areas in which storms exist or are probable.

Operation of equipment usually starts with the beginning of a storm. In clearing snow under ordinary conditions, pilot, push and wing plows are generally run at a good speed, in order that the snow may be thrown well clear of the track. If a good speed is maintained, the ploughs will frequently go through a cut without stalling, whereas, if the speed is slow the plough may catch or stall half way through the cut or drift, with the result that it may be stuck or buried and have to be shoveled out.

Particular care should be used upon approaching a cut, particularly one with a side drift at the entrance, as with a double track plough sufficient side pressure may develop to cause derailment. Such an approach is generally squared off before pushing the plough into it. If the snow is too deep for the plough to handle, it is leveled off by shoveling until reduced to a reasonable depth. The man in charge of the snow plough must be one with considerable initiative, as weather and snow conditions vary greatly, and situations frequently arise which call for good judgment and quick decision.

Rotary snow ploughs are handled in an entirely different manner from the push and wing ploughs. Instead of dedepnding upon speed to get through the drifts, the rotary plough approaches the drift slowly and the cutting wheel is fed into the drift instead of bucking it. A snow bank or slide is generally approach- at a speed of about 3 or 4 miles an hour with the rotary wheel revolving about 150 revolutions a minute. When coming close to the obstruction the speed of the wheel is increased, and the pusher engines keep moving just fast enough to keep the plough up against the drift. If the pusher engine crowds the rotary too much the pilot signals the locomotive

man of the rotary to increase the speed of the wheel. In case the pusher engine still crowds the rotary, the pilot should apply the air brakes to check the pusher. If the pusher cannot be checked with the brakes, the pilot should signal the locomotive man of the pusher to shut off. He should respond quickly to prevent stalling the rotary. In case the rotary is stalled the flangers are raised and the plough drawn back four or five feet from the cut.

When again ready, the wheel is started and pushed into the cut. The rotary plough should never be pushed into the bank from a distance of more than 4 or 5 feet, as failure of the rotary will result. If the wheel of the rotary becomes blocked with snow the plough should be stopped and back up a few feet. The snow can then be loosened between the

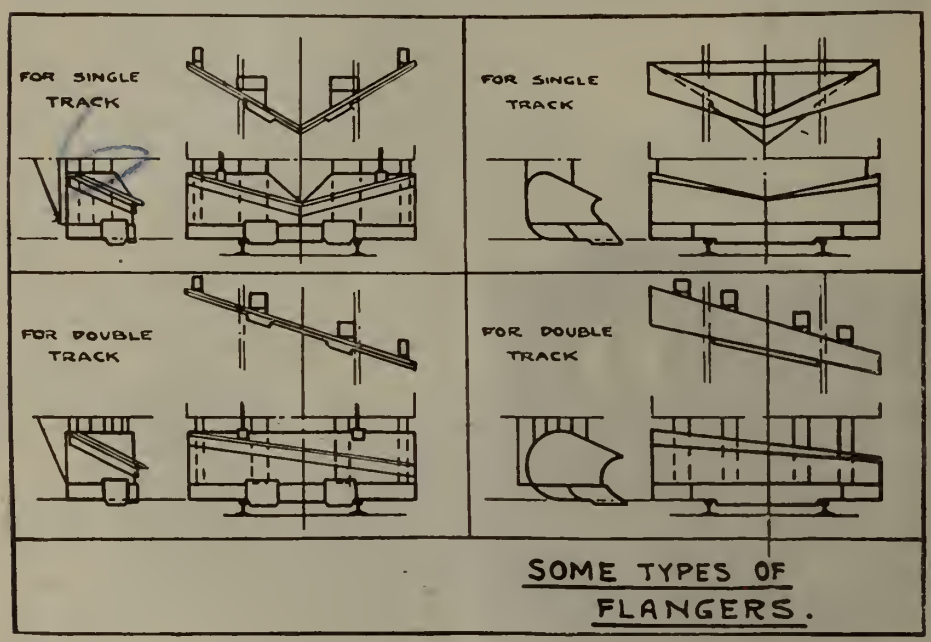



Figure 56.

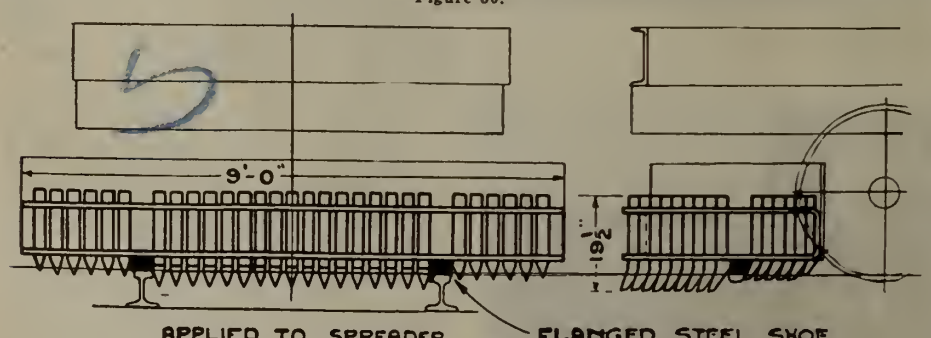



Fig. 57. Ice Cutter, Canadian Pacific Railway.

casing and the scoops, after which the wheel will clear itself. Rotary ploughs should not be forced through snow deeper than the hood. When the snow is deeper than the hood the top bank should be shoveled off. In slides or ice formations the top of the obstruction is frequently loosened by blasting.

The successful operation of the rotary depends greatly upon the manner in which it is handled, and it is highly essential that the men on both the rotary and the pusher engines should be experienced men.

Preventative Measures. — At points where it is known that snow will drift it is usual to construct snow fences; these may be either temporary or permanent. The usual temporary snow fence is about 7 ft. high, frequently of the style shown in fig. 62. The horizontal slats which are attached to the top extension of the back braces tend to throw drifting snow backward and to cause it to pile upon the outer side of the fence. Some roads use a portable fence, the alternating panels of which form an A design.

Permanent fences may be of any recognized type, but are usually of boards placed close together, although in some cases stone fences have been used. The writer has been advised that metal lath or metal fences have proved satisfactory under some conditions.

Trees.—One of the Canadian roads uses spruce hedges and finds this a very satisfactory method of forming a snow barrier. The distance at which trees or hedges are spaced or planted from the track depends entirely upon local conditions. On the C.P.R., tree planting has been done in selected localities, species native to the locality being used. Along the north shore of Lake Superior jack pine and spruce are utilized. In Quebec spruce and balsam and some cedar are used. The trees, when planted, are generally not over 30 in. high. The practice of using hedges and trees for this purpose is quite general in Europe. When properly planted, hedges and trees not only give snow protection but enhance the appearance of the right of way.

Snow Sheds.—On roads passing through mountain territory where slides are frequent, snow sheds are generally used for protection. Snow sheds are of various types and built to suit local conditions. The level fall type is of box-like section and used simply to protect the road from falling or drifting snow. The valley type shed is generally placed against an embankment in such a way that a slide will pass over the roof of the shed without falling on or damaging the track. The sheds are ordinarily braced with cribwork backed with earth or gravel. Several years ago at Rock River, the Union Pacific Rd. constructed a very interesting permanent snow shed of concrete sections fitted together. This shed covered a track which had in previous years given a very great deal of trouble on account of deep drifting snow.

The question of preventative measures is a very large one. The writer has not felt it within the scope of this description to more than make reference to the best known methods.

Conclusion.—In conclusion the writer wishes to acknowledge his very great indebtedness to J. S. Leslie, one of the Leslie Brothers, whose ingenuity and untiring efforts have made possible the operation of our railways under severe winter conditions. His assistance and collection of data and photographs were placed at the disposal of the writer and made it possible to complete the historical review of the subject. The writer also wishes to acknowledge his indebtedness to the various railway and manufacturing companies, particularly Q & C Co., and the American Locomotive Co., for information placed at his disposal. Acknowledgment is also made to H. H. Vaughan for much valuable information. Additional illustrations are shown on pages 587 and 588.

## American Railway Association's Mechanical Committees.

As stated previously in Canadian Railway and Marine World, the officers of the American Railway Association, Section 3, Mechanical, for the current year are W. J. Tollerton (Chairman), General Mechanical Superintendent, Chicago, Rock Island & Pacific Ry., Chicago; J. Coleman (Vice Chairman), Assistant to General Superintendent, Motive Power, and Car Department, G.T.R., Montreal; V. R. Hawthorne, Chicago, being Secretary. At a recent meeting of the general committee, committees were appointed to serve until June, 1921. Following is a list of the committees, with the names of their chairmen, and also names of officials of Canadian railways, allied lines, etc., who are members of the committees.

General Committee.—W. J. Tollerton (Chairman), General Mechanical Superintendent, Chicago, Rock Island & Pacific Ry., Chicago; J. Coleman (Vice Chairman), Assistant to General Superintendent, Motive Power and Car Department, G.T.R., Montreal; W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., Montreal.

Nominating.—F. W. Brazier (Chairman), Assistant to General Superintendent, Rolling Stock, New York Central Rd., New York.

Arbitration.—T. H. Goodnow (Chairman), Superintendent, Car Department, Chicago & Northwestern Ry., Chicago, Illinois; J. Coleman, Assistant to General Superintendent, Motive Power and Car Department, G.T.R., Montreal, Que.

Prices for Labor and Material.—A. E. Calkins (Chairman), Superintendent, Rolling Stock, New York Central Rd., New York; I. N. Clark, Master Car Builder, G.T.R., London, Ont.

Arrangements. — W. J. Tollerton, (Chairman), General Mechanical Superintendent, Chicago, Rock Island & Pacific Ry., Chicago; J. Coleman, Assistant

to General Superintendent, Motive Power and Car Department, G.T.R., Montreal.

**Autogenous and Electric Welding.**—J. T. Wallis (Chairman), Chief of Motive Power, Pennsylvania System, Philadelphia.

**Car Construction.**—W. F. Kiesel, Jr. (Chairman), Mechanical Engineer, Pennsylvania System, Altoona, Pa.; W. J. Robider, General Master Car Builder, C.P.R., Montreal.

Fig. 58. Ice Cutter, Canadian Pacific Railway. See page 585.

Fig. 59. Ice Cutter, Canadian Pacific Railway. See page 585.

Fig. 60. Snow Sweeper, Pennsylvania Railroad. See page 585.

**Brake Shoe and Brake Beam Equipment.** — W. J. Bohan (Chairman), Assistant to General Mechanical Superintendent, Northern Pacific Ry., St. Paul, Minn.; G. E. Smart, Mechanical Assistant, Car Department, Canadian National Rys., Toronto.

**Couplers and Draft Gears.** — R. L. Kleine (Chairman), Assistant Chief of Motive Power, Pennsylvania System, Philadelphia, Pa.; L. K. Sillcox, General Superintendent, Motive Power, Chicago, Milwaukee & St. Paul Rd., Chicago; C. Brady, General Car Construction, C.P.R., Montreal.

**Train Brake and Signal Equipment.**—T. L. Burton (Chairman), Consulting Air Brake Engineer, New York Central Rd., New York; W. J. Hatch, General Air Brake Inspector, C.P.R., Montreal.

**Car Wheels.**—W. C. A. Henry (Chairman), General Superintendent, Motive Power, Pennsylnvania System, St. Louis, Mo.; W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., Montreal; L. K. Sillcox, General Superintendent, Motive Power, Chicago, Milwaukee & St. Paul Rd., Chicago, Illinois.

**Locomotive Construction.**—H. T. Bentley (Chairman), Superintendent, Motive Power and Machinery, Chicago & Northwestern Ry., Chicago; W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., Montreal.

**Design and Maintenance of Locomotive Boilers.**—G. H. Emerson (Chairman), Chief of Motive Power and Equipment, Baltimore & Ohio Rd., Baltimore, Maryland.

**Feed Water Heaters for Locomotives.** F. M. Waring (Chairman), Engineer, Tests, Pennsylvania System, Altoona, Pa.; W. H. Sample, General Superintendent, Motive Power and Car Department, G.T.R., Montreal.

**Fuel Economy and Smoke Prevention.** William Schlafge (Chairman), Mechanical Manager, Erie Rd., New York; W. H. Sample, General Superintendent, Motive Power and Car Department, Grand Trunk Railway, Montreal.

**Mechanical Stokers.**—M. A. Kinney (Chairman), Superintendent, Motive Power, Hocking Valley Ry., Columbus, Ohio.

**Loading Rules.**—R. L. Kleine (Chairman), Assistant Chief of Motive Power, Pennsylvania System, Philadelphia, Pa.; E. J. Robertson, Superintendent, Car Department, Soo Line, Minneapolis, Minn.

**Manual.**—W. E. Dunham (Chairman), Assistant Superintendent, Motive Power and Machinery, Chicago & Northwestern Ry., Chicago; W. J. Robider, General Master Car Builder, C.P.R., Montreal.

**Safety Appliances.**—C. E. Chambers (Chairman), Superintendent, Motive Power and Equipment, Central Railroad of New Jersey, Jersey City.

**Specifications and Tests for Materials.** F. M. Waring (Chairman), Engineer, Tests, Pennsylvania System, Altoona, Pa.

**Subjects.**—Willard Kells (Chairman), General Superintendent, Motive Power, Atlantic Coast Line Rd., Wilmington, N.C.; W. H. Sample, General Superintendent, Motive Power and Car Department, G.T.R., Montreal.

**Tank Cars.**—A. W. Gibbs (Chairman), Chief Mechanical Engineer, Pennsylvania System, Philadelphia.

**Amalgamation of other Mechanical Organizations with Section 3—Mechanical, of American Railroad Association.**—W. O. Thompson (Chairman), General Superintendent, Rolling Stock, New York Central Rd., Buffalo, N.Y.

**Car Repair Shop Layouts.**—I. S. Downing (Chairman), General Master Car Builder, Cleveland, Cincinnati, Chicago & St. Louis Ry., Indianapolis, Indiana; W. J. Robider, General Master Car Builder, Canadian Pacific Railway, Montreal.

**Design, Maintenance and Operation of Electric Rolling Stock.**—G. C. Bishop (Chairman), Superintendent, Motive Power, Long Island Rd., Richmond Hill, N.Y.; L. K. Sillcox, General Superintendent, Motive Power, Chicago, Milwaukee & St. Paul Rd., Chicago.

**Engine Terminals, Design and Operation.**—C. E. Fuller (Chairman), Superintendent, Motive Power and Machinery, Union Pacific Rd., Omaha, Nebraska.;

H. H. Boyd, Assistant Chief Mechanical Engineer, C.P.R., Montreal.

**Lateral Motion Locomotives.** — Willard Kells (Chairman), General Superintendent, Motive Power, Atlantic Coast Line Rd., Wilmington, N.C.; T. A. Foque, General Mechanical Superintendent, Soo Line, Minneapolis, Minn.; W. H. Sample, General Superintendent, Motive Power and Car Department, G.T.R., Montreal.

**Locomotive Headlights and Classification Lamps.**—W. H. Flynn (Chairman), Superintendent, Motive Power, Michigan Central Rd., Detroit.

**Modernization of Stationary Boiler Plants.**—L. A. Richardson (Chairman), Mechanical Superintendent, Chicago, Rock Island & Pacific Ry., Des Moines, Iowa.

**Scheduling of Equipment Through Repair Shops.**—Henry Gardner (Chairman), Corporate Mechanical Engineer, Baltimore & Ohio Ry., Baltimore, Maryland; E. T. Spidy, Production Engineer, C.P.R., Montreal.

**Standard Blocking for Cradles of Car Dumping Machines.** — J. McMullen, (Chairman), Superintendent Car Department, Erie Rd., New York.

**Standard Method of Packing Journal Boxes.**—C. J. Bodemer (Chairman), Assistant Superintendent, Machinery, Louisville, Kentucky.

**Train Lighting and Equipment.**—J. R. Sloan (Chairman), Chief Electrician, Pennsylvania System, Pittsburg, Pa.

**Train Resistance and Tonnage Rating.** O. P. Reese (Chairman), Superintendent, Motive Power, Pennsylvania System, Toledo, Ohio.

Fig. 61. Snow Sweeper Engine. See page 585.

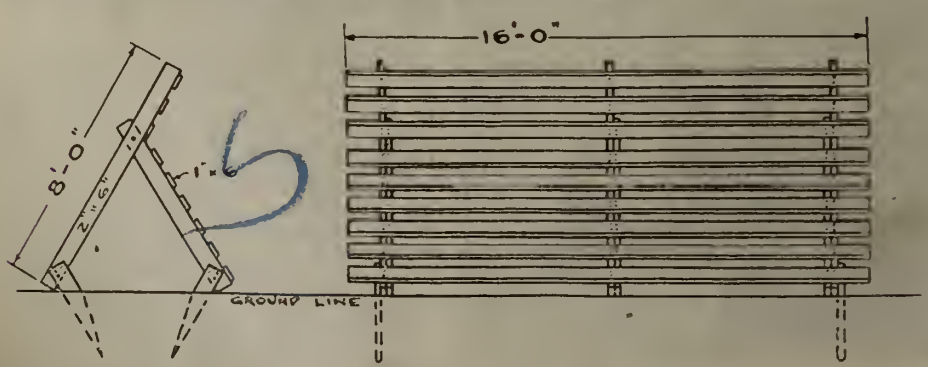



Fig. 62. Snow Fence. See page 586.

## London Railway Terminals, Tracks, Etc.

N. Cauchon, C.E., Ottawa, who was engaged by the London, Ont., City Council, to advise as to civic improvements, has presented a preliminary report. Among other things, he recommends elevation of railway tracks throughout the city and then says:—"It is recommended that union passenger terminals be sought on an elevated crosstown line, at right angles between the elevated tracks of the two railways and midway through the long blocks between Waterloo and Colborne Sts. The station trackage proper should enlarge (six or eight) from King St. northward over Dundas St. to Queen's Ave. or farther as may become necessary, and with provision in design for progressive expansion. The station building should occupy the block between Dundas St. and Queen's Ave., with access to the platforms from beneath."

He also recommends that the terminal should be municipally owned and leased to a terminal company in which the railways and city would be represented for joint operation at a price which would pay carrying charges, interest, operation and maintenance. The crosstown tracks could be laid on an earth embankment or carried on trestles. If the latter plan is adopted the suggestion is made that a covered market with ample storage room could be placed in the block between King and Dundas Sts. under the tracks. The plan would be to have all passenger trains coming in over the G.T.R. tracks, pass the station over the crosstown line, and leave the city via the C.P.R. tracks. The C.P.R. trains would in the same manner leave on the G.T.R. tracks. Then at a short distance east and west of the city suitable interswitching facilities would be provided so the trains could again regain their respective roads.

The Ontario Association of Architects gave consideration to the general plan at its annual meeting in London recently, and passed a resolution of approval.

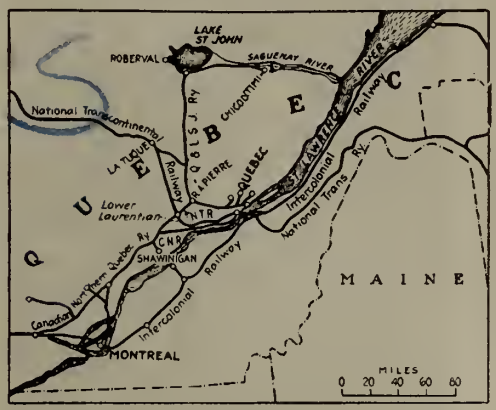
**Fuel Oil for French Railways.**—The great scarcity of coal has caused the Paris, Lyons & Mediterranean Ry. to transform some of its motive power from coal to fuel oil consumption, which is about to be followed by the Chemin de Fer de l'Etat, or state owned railway, and locomotives at its shops at Saintes are undergoing changes for experimental purposes. Much attention is being directed to the announcement that the first named company is planning to equip 200 locomotives for fuel oil and install numerous storage reservoirs, of from 40 to 100 tons capacity, at various points on its lines.

# Location Betterments on Canadian National Railways.

By Henry K. Wicksteed, B.A.Sc., Chief Locating Engineer, Canadian National Railways.

Present construction and studies for location betterments on the Canadian National Rys. may best be understood by a brief review of early railway building on the Canadian Northern. The principal component of the lines composing the Canadian National Rys. System is that of the Canadian Northern. This was financed, designed, and built, as everyone knows, by the firm of Mackenzie & Mann, both members of which were not only very able business men and financiers, but had had a long previous experience in contracting on the Canadian Pacific, and an absolute confidence in the resources of Canada and its future. They knew personally a great many of the older engineers, and others who had been identified with the construction of the older road, and they gathered about them a number of these men who knew the topography of Canada as no one else could know it, and the weak points of the older roads as well as the strong. Under these circumstances it is not surprising that the Canadian Northern, from Montreal and Toronto to Vancouver, has the reputation of being the best long distance line on the continent in proportion to cost, and the best on this continent from an economic point of view means the best in the world. Some day justice will be done to the extraordinary talent and vision of these two men. Public opinion is even now swinging round in that direction. The successful man has always a great crowd of detractors, but as a successful man remarked to me a few days ago, it is easier to make and keep a reputation than to do things. These men attempted the impossible and got away with it. Two farmers' sons built 10,000 miles in less than 20 years.

Part of this system in the east was composed of acquired lines which were linked together and sometimes acted merely as feeders to the parent system; sometimes formed part of the main line itself. They had nearly all been finished years before, and in location features higher standards demanded at the pres- were not on a par with the samewhat ent day. One such road was the Bay of Quinte, which was used with modifications for some 25 miles between Toronto and Ottawa. Grades of 1.5% were reduced to 0.5%, while the other construction was going on, and finished simultaneously, the stations being left in their original positions, and the existing business of the line being left undisturbed. A still more important link in the main chain between Montreal and Quebec was the Great Northern of Canada, completed about 1900, and itself composed of older roads coupled together. It extended originally from Hawkesbury, on the Grand Trunk, 60 miles east of Ottawa, to Riviere a Pierre, on the Quebec & Lake St. John, and was intended as an overflow route for the somewhat heavy flow of grain then going east from the Georgian Bay at Parry Sound to Quebec. One hundred miles of this route, from Quebec to the St. Maurice, was made up of two colonization roads, the Lower Laurentian and the Quebec & Lake St. John, and had a number of grades of 2%, and curvature as sharp as 10°, in combination.

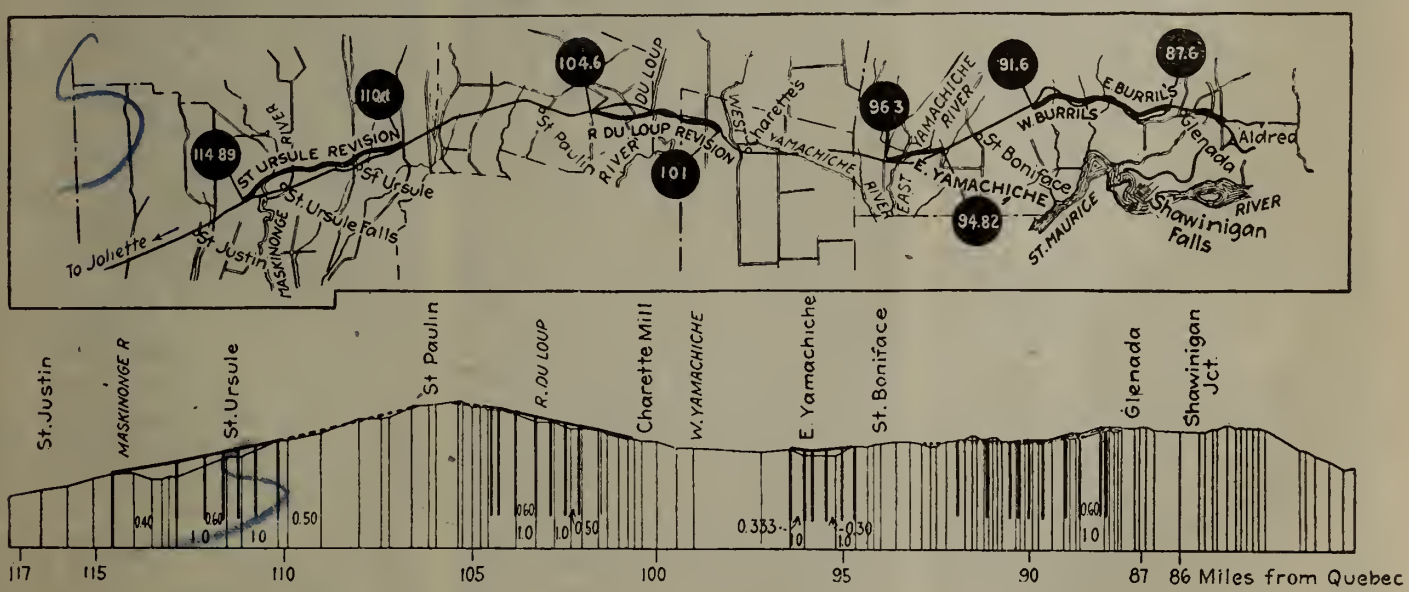



Canadian National Railways Lines in the Quebec District.

The newer portion had been built to a 1% standard. The most objectionable part of the combination was eliminated by building a new line from the St. Maurice River, 80 miles, to Quebec, which reduced the distance some 17 miles, and the ruling gradient from 2% uncompensated to 0.60% compensated. This provided for nearly one half the distance between Quebec and Montreal, and two fifths of that from Quebec to Hawkesbury. Nine miles of the remainder was taken up by a sharp drop into the St. Maurice valley, and an equally sharp rise on the opposite side, and of the remainder all but 30 miles was on the great Montreal plain, and where the grades were at all objectionable, they were all so short as to be easily reducible by ordinary steam shovel work.

The St. Maurice depression, involving as it did the moving of a station and raising of a bridge over the river, has been left alone for the present, and is being worked as a special short division, but this 30 miles, involving some long 1% grades, became one of the first studies of the Canadian National staff. Surveys showed that these could be reduced to 0.60% by the construction of some 14 miles of new line, and 4° curves substituted for the 8° standard now obtaining, and that the capitalized value of the change would amount to some $5,000,000 or more, while the cost was estimated at $1,500,000, but this cost was largely made up by that of four steel viaducts over as many rivers. The existing bridges, which had been standing some 20 years, were none too heavy in the first place, and quite unequal to modern loads, and rebuilding them in the new sites was somewhat cheaper than in the old. The amount chargeable to grade revisions therefore, was less than $500,000 and it needed little argument to convince the directorate that the expenditure was a good investment. Work on these changes has actually been commenced.

Meantime the traffic on the Quebec & Lake St. John, a little separate system of 280 miles, built as a colonization road, had grown very rapidly, owing to the development of the wood pulp and paper industry in the Saguenay basin, and its 1.5% grades (and on the Quebec end 2%) had become very expensive to maintain and operate. Most of this traffic goes to and beyond Montreal, and leaves the Q. & L. St. J. at Riviere a Pierre, running over the 40 miles of the Lower Lauren-




Betterments under construction on St. Lawrence Subdivision, Canadian National Railways.

tian above mentioned, with 2% grades, and into the main line at the St. Maurice River. The National Transcontinental Ry., another member of the Canadian National Rys. System, crosses this midway between Riviere a Pierre and the St. Maurice, and this, too, is carrying more traffic to and from Montreal over this little one-horse colonization branch. Studies now being made, for the reduction of these 2% grades to the same 0.60% standard, are well advanced and very encouraging, but obviously in a reduction from 2% to 0.60%, with considerable changes in elevation, it cannot be expected that much of the old line will remain. It is possible, however, to retain all the station and traffic points intact. Otherwise there would be a very serious rebellion among the good people of the Province of Quebec.

Last in importance perhaps, and farthest away from the great trade centers, but among the most interesting of all, are the studies on the Quebec & Lake St. John itself. One hundred and twenty-five miles north of Quebec City is the Town of Chicoutimi. Many Canadians have never heard of it, and probably the great majority of Americans. Yet it is a seaport nearer to Europe than any in the United States. Within 50 miles of it are a million horsepowers of water running to waste. Within 150 miles are some of the greatest spruce forests of the world, and at its doors, and extending more than 50 miles, are 1,000 square miles of good agricultural land. In this city, and on this land, are 50,000 to 60,000 industrious and thrifty French Canadians. From Canada, the United States, and both England and France, capital has come freely in the past, and is still coming for investment in pulp grinding and paper making. To the westward, and tributary to this city are mineral areas which have caused at least one flurry of excitement. Quebec has perhaps the sanest population, and the most progressive and business like government of any province in Canada. This combination is a hard one to beat, and many people are realizing it. One chance acquaintance on the train in midwinter had come all the way from Kansas City, merely to look into the chances for profitable investment.

Under these circumstances, it is only natural that the traffic on the Quebec & Lake St. John should increase, and that it should look forward to economic development and improvement in grades and curvature, and possibly, in the more remote future, to electrification. At every few miles along iits line are rivers with minor waterpowers which can be developed easily and cheaply. Few of them perhaps are large enough to justify a transmission line to distant localities, but quite large enough in the aggregate to keep a railway going, and probably so evenly distributed that a high tension line and converters would be unnecessary. This matter of electrification of Quebec lines will soon be well worth studying, but the question of grade reduction and increasing at moderate expenditure the train load by 50% and sometimes over 100%, remains relatively just as important. Electrification will reduce or nearly eliminate the coal bill. Grade reduction will reduce both coal and wages in proportion to tonnage. Both expenditures will probably soon be worth while. The accompanying plans and profiles show some of the most interesting of the problems under construction and study.

## Projected Railway and Industrial Development in Quebec.

A press report states that a large project for industrial expansion in the province of Quebec is taking shape, embracing the construction of a railway from Hudson Bay to the Seven Islands, passing by Lake Mistassini, Lake St. John and Chicoutimi, to enter Quebec by the Montmorency Valley, which would shorten the route from Chicoutimi to Quebec by 100 miles; the establishment of pulp and paper mills at Seven Islands and at other places where there are important water powers along the line of the railway, and the erection of steel works at Chicoutimi and at Quebec. The project, according to reports, is being promoted by a syndicate with which Lord Burnham, principal proprietor of the Daily Telegraph, London, Eng., and Lord Desborough, who is a member of the Grenfell family of financiers, are members. The area within which the project, according to the report, is to be carried out, extends from Seven Islands on the St. Lawrence River, through Saguenay and Chicoutimi counties, and northerly and northwesterly to Hudson Bay, and it is proposed to build a railway from Chicoutimi to Quebec City. During the past two years there has been considerable exploratory work done in this region, and several charters have been secured from the Quebec Legislature, authorizing railway construction, development of water powers, navigation rights, etc., while land subsidies for the building of 200 miles of railway have been provided and are available for any company undertaking to build the lines specified. Following are particulars of the companies incorporated having construction rights in the area.

The Quebec Legislature in 1919 incorporated two companies, one the Quebec & Ungava Ry. Co., and the other the St. Felicien & Ungava Ry. Co., of both of which Viscount Templeton, London, Eng., the Earl of Clarendon, London, Eng., and Pickering, Ont.; B. Spring Rice, Burwash, Sussex, Eng.; and H. C. Thompson, London, Eng., were provisional directors, and J. T. Ross, Quebec, was a provisional director of the second named company. The Quebec & Ungava Ry. Co. was authorized to build a railway from Seven Islands, in Saguenay County, on the north shore of the St. Lawrence River, northerly to Lake Menihak, thence westerly or northwesterly to the most suitable harbor between the mouth of Big River and Nastapoka Sound on Hudson Bay, with branch lines. The St. Felicien & Ungava Ry. Co. was authorized to build a railway from St. Felicien, St. John County, to Lake Mistassini, thence to Lake Nichikuin and to Lake Petitsikapau, or by an alternative route between the first and the last named points. During the winter of 1919-20 several parties connected with a syndicate with which the provisional directors of these two companies were associated, carried on explorations in the territory through which these lines were projected.

At Seven Islands, the Clarke interests carried on extensive developments, including the building of Clarke City, with wharves, and a power and pulp plant, in connection with which a railway was built during the construction period. A recent report stated that the Clarke properties had been sold to a syndicate, which proposed to make extensive developments in the region.

The Quebec & Chibougamau Ry. Co. was incorporated by the Quebec Legislature at its last session to build a railway from Quebec northerly through Quebec, Montmorency, Charlevoix and Chicoutimi counties to Chicoutimi, to the Saguenay River, and thence through Chicoutimi and St. John counties to Lake Chibougamau, with branch lines.

The Quebec Legislature at its last session voted a subsidy of 4,000 acres a mile, not convertible into money, to a company building a railway from near Chicoutimi, on the Quebec & St. John Ry., to St. Felicien, to the west of Lake St. John, running through the regions situated east and north of the lake, as well as branch lines, the total length of main line and branches subsidized being 120 miles. The Legislature, at the same time, voted a similar subsidy to a company to build a line from Malbaie to Ha Ha Bay, in the St. John Lake district.

A recent press report stated that the Quebec Ry., Light & Power Co. was negotiating the sale of its charter for the operation of a steam railway, and such part of its lines as was used for that purpose, to a syndicate interested in the development of the province. This piece of line might be useful in connection with the building of a line to Chicoutimi.

[See Quebec Subsidies for Railway Construction, Mar., pg. 122; Quebec & Ungava Ry., May., 1919, pg. 254; St. Felicien & Ungava Ry., May, 1919, pg. 254; Quebec & Lake Chibougamau Ry. Co., Aug., pg. 428; Quebec Ry., Light & Power Co., Oct., pg. 557.]

## Proposed Enlargement of Niagara Railway Arch Bridge.

A recent press report stated that a conference had been held between Sir Adam Beck, Chairman, Hydro Electric Power Commission of Ontario, and the owners of the Niagara Railway Arch bridge in reference to the use of the bridge by radial electric railways, which would necessitate four tracking it.

We are officially advised that the bridge is an international one, controlled by two companies, the Niagara Falls Suspension Bridge Co., incorporated in Canada, and the Niagara Falls International Bridge Co., incorporated in the United States. The officers of the Canadian company are:—President, C. Riordan, Montreal; Secretary-Treasurer, J. H. Ingersoll, St. Catharines, Ont. H. G. Dickinson, Niagara Falls, N.Y., is superintendent of the bridge.

The G.T.R. operates the railway portion of the bridge, leasing the upper deck, and the proposed widening could not be accomplished without its consent, as the bridge tracks terminate, on one side, on G.T.R. property, in use for its terminal purposes.

Plans for adding two more tracks have been prepared by Chas. Ewan Fowler, C.E., New York, N.Y. It is proposed that the four tracks on the upper deck shall have a capacity for E.70 locomotives and that the lower deck will have two electric railway tracks in the center, two 20-ft. roadways, and two 10-ft. sidewalks. Mr. Fowler says that it is hoped to have progressed far enough so that construction may be started next spring. He is also engaged on plans for the proposed Windsor-Detroit bridge.

**Lucerne Railway Club Ltd.** has been incorporated under the British Columbia Companies Act with authorized capital of $2,000, to carry on a social club.

# The Dominion Government's Decision in the Appeals Against Increases in Freight and Passenger Rates.

The appeals against the Board of Railway Commissioner's judgment of Sept. 6, authorizing increases in railway freight and passenger rates, full particulars of which were given in Canadian Railway and Marine World for October, were heard at Ottawa Sept. 29 and 30 by Right Hon. Arthur Meighen, Prime Minister; Sir George Foster, Minister of Trade and Commerce; Sir James Lougheed, Minister of the Interior; Right Hon. C. J. Doherty, Minister of Justice; Hon. C. C. Ballantyne, Minister of Marine and Fisheries, and of Naval Defence; Right Hon. A. L. Sifton, Secretary of State, and Hon. B. W. Wigmore, Minister of Customs and Inland Revenue. The appellants were represented by counsel, etc., as follows:—Manitoba Government, H. G. Symington and Alex. McDonald; Saskatchewan Government, D'Arcy Scott; City of Toronto, G. R. Geary, K.C.; Toronto Board of Trade, A. C. MacMaster; Winnipeg Board of Trade, J. B. Coyne; Wholesale Grocers Association, Hugh Blain; Dominion Millers Association, C. B. Watts; Nova Scotia applegrowers, J. Finn. The railways were represented by W. N. Tilley, K.C., and F. H. Chrysler, K.C. The Dominion Government's decision was announced Oct. 7, in the form of an order in council, which is now published in full, for the first time, by Canadian Railway and Marine World, as follows, only portions of it having been published elsewhere heretofore:—

The following report of the committee of the Privy Council was approved by the Governor General on Oct. 6. The committee of the Privy Council have had under consideration certain petitions to the Governor General in council asking for the exercise of the powers conferred upon him by sec. 52 of chap. 68 of the Statutes of Canada, 1919, intituled The Railway Act, 1919, to vary or rescind an order of the Board of Railway Commissioners for Canada, dated Sept. 6, 1920, fixing certain increases in freight rates, passenger fares, sleeping and parlor car rates and excess baggage. Counsel and representatives of the various petitioners have been heard and, as well, counsel for the railways affected. Consideration has been given to the various cases cited and exhibits filed.

The order appealed against is made by the Chief Commissioner and concurred in by Assistant Chief Commissioner S. J. McLean, Deputy Chief Commissioner, Hon. W. B. Nantel, K.C., and Commissioners A. S. Goodeve and J. G. Rutherford, being all the commissioners who presided at the hearing. The increases authorized by the order may be briefly stated as follows:—

Until Dec. 31, 1920, 40% on eastern freight rates, 35% on western freight rates, 20% on eastern and western passenger fares, not exceeding 4c. a mile, 50% on sleeping and parlor car rates, 20% on excess baggage.

The first three to be reduced on Jan. 1, 1921, to 35% on eastern freight, 30% on western freight, 10% on passenger fares, to July 1, 1921; after July 1, passenger fares to be reduced to rate prevailing before the order.

Provision is also made in the order that the Canadian Pacific, Grand Trunk and Canadian Northern Railways shall furnish monthly returns of operating revenues, and the right is reserved to the Board to make such readjustment of rates as may be justified by such returns. The increases provided for are noted in the order to wholly expire on July 6, 1922, unless in the meantime Parliament extends the provisions of sec. 325 of the Railway Act, enabling such order to be longer effective. To the above general increase there are, however, the following exceptions fixed:—On coal, increases limited as follows: In rates 0 to 80c. a ton, increase 10c.; over 80 to 50c. a ton, increase 15c.; over 150c. a ton, increase 20c. On milk, no increase. On crushed stone, sand and gravel, no increase. On cordwood, slabs, edgings and mill refuse, only 10%. On commutation fares and on minimum class rate as established by order in council 1863 and on local switching rates, milling in transit diversion, reconsignment, stopovers, demurrage and weighing, no increase. Upon examination of the monthly returns, filed as above provided, it will be the duty of the Board, should a reduction in costs of materials or other services warrant, to reduce rates accordingly.

It appears that the application of the various railways was for a general increase, without limitations, of 40% east and west on fregiht traffic, of 20% on passenger fares, of 50% in sleeping and parlor car rates, of 40% on milk and 20% on excess baggage.

In connection with this appeal it must be observed that one of the duties, if not indeed the principal task, of the Board of Railway Commissioners, is to determine upon application, what are fair and reasonable rates to be charged from time to time for the various services performed by public utilities under the jurisdiction of the Board. In such determination there must of course be taken into account, as has been done in the present case, all relevant circumstances, such as changes in the scale of wages, and the cost of materials, the effect of competitive means of carriage whether by lake route or by lines to the south, and such other facts as may be established and as are found pertinent to the issue by a lawfully constituted judicial tribunal. For the purposes of this work the Board of Railway Commissioners not only has the advantage of hearing the evidence, and following the cross examination, but brings to bear the experience of its own members, extending in many cases over a considerable number of years, and the familiarity with railway problems thus acquired. It has, in addition, at its disposal, a permanent staff of expert officials, trained in the various branches of the Board's work and able to advise the commissioners in the many intricate and more or less technical subjects that are before the Board for adjudication. It follows that a decision of the Board, so arrived at, as to what may constitute under all the circumstances a few and reasonable rate, could not, except for extraordinary cause, be usefully reviewed by your Excellency's advisers. Indeed, for your Excellency's advisers to take upon themselves to weigh the evidence adduced and substitute their own judgment fo rthe judgment of the Board upon the question of fact arising on the issue, and to be determined upon such evidence, would defeat the purpose for which the Board of Railway Commissioners was created and would in the end be highly prejudicial to the public interest.

The committee of the Privy Council is, however, of opinion that if it should be disclosed in the order or established in argument that the Board in coming to a conclusion on the evidence submitted (in this case as to what is a fair and reasonable rate) had applied principles which it should not have applied, principles which the committee of the Privy Council consider not in consonance with public policy, such appropriate action should be taken as will lead to a finding in which only correct principles will be appiled.

In the case under consideration the terms of the order disclose on pages 286 and 287 of the Judgments, Orders, Regulations and Rulings of the Board, that in determining what would be a fair and reasonable rate, the Board took into account as one element for consideration, the requirements of the Canadian National Rys. System, which system as constituted now includes within iits mileage railways of great extent, and involving heavy cost of operation, which must be held to have been built, not as purely railway enterprises of a business character, but in a substantial degree for colonization and other purposes. The reorganization of this system, looking to the better utilizing of these lines is, moreover, now only under way. Railways so constructed cannot, under the best of operation, on any practicable scale of rates, be made, for some time at least, a financial success. A system largely composed of such roads and in such state of reorganlzation, would not therefore appear to your Excellency's advisers to be properly at the present time a factor for consideration in the solution of a rate-making problem. What constitutes a fair and reasonable rate should now be arrived at without reference to the requirements of the Canadian National Rys. System and your committee recommends that the order in this case be referred back to the Board, to be corrected in its findings in such manner as to determine what are fair and reasonable rates, without taking into account at all for the time the order shall be in effect, the requirements of the Canadian National Rys. System.

Very strong representations were made at the argument on appeal, to the effect that the order continued, and indeed intensified, an unjust discrimination in rates, it being claimed that higher freight rates prevail generally in western Canada, that is west of Fort William, than prevail in eastern Canada, that is east of Fort William. It was strongly urged that the reasons, whatever they may have been, for this differential, no longer exist, and that as a matter of public policy the principle of equalization of rates east and west should now be recognized. On the other hand, it was urged that the competition arising out of lake and river transportation, and as well out of lower competitive rates on eastern United States lines, compelled a somewhat lower scale in eastern Canada than in western Canada. Whether or not these reasons now obtain in any substantial degree, is a question which requires minute and expert investigation, such as can be best conducted by the Railway Commission itself and not by your Excellency's advisers, but the committee is

strongly impressed with the very great desirability of bringing about with the least possible delay equalization of eastern and western rates.

The committee of the Privy Council therefore further recommend that as conditions have probably changed materially in recent years, tending more and more to make equalization practicable, an enquiry by the Board be directed to be held at the earliest date, with a view to the establishment of rates meeting to the utmost extent possible the above requirement as to equalization.

Strong argument was advanced as well against the application of a 5% greater freight rate for the remainder of 1920 than shall prevail after Jan. 1, 1921, in order to overtake in part at least the extra burden imposed on the railways due to advances in wages which took effect May 1, 1920. The ground of the objections was that this imposed an unfair burden upon shippers during the last four months of this year, such shippers being largely in western Canada. There can be no doubt that the fair distribution over all of Canada of any necessary burdens is a principle that must to the utmost be adhered to and the committee recommend that if it seems to the Board practicable, by way of diminution of the extra percentage, and if absolutely necessary its extension over a longer period, it meet as far as possible the objection above set out.

It was urged in argument, as well very generally by the applicants, that the increase in passenger rates should not be diminished or discontinued before a reduction in freight rates is ordered. This is a matter, however, which seems properly a subject for the disposition of the Board and the terms of the order are such that effect may be given to the contention if in the judgment of the Board the public interest is considered to be served thereby.

In addition to such matters of principle as are referred to above, in respect of which it is submitted review by the Governor General in council is justified, it is conceivable that, upon the hearing of a petition, there might appear in the order under review, whether as the result of omission to take fully into account important evidence, or for other reasons, some such manifest error entailing a substantial miscarriage of justice, as would constitute ground for modification or reference back for correction. Such error was contended by counsel, particularly counsel for the Manitoba and Saskatchewan Governments, and of the Winnipeg Board of Trade, to have occurred in the present case. The contention of these appellants was that the finding of the commissioners applicable to all railways under their jurisdiction would, according to the estimate of the commissioners themselves, afford an unwarrantably high return to one railway, the Canadian Pacific. Reference was made in this connection to words in the order wherein it was conjectured that should the application of the railways be allowed, there would be a surplus to this company in the year 1921, after payment of its regular dividend and income tax of $15,064,500. The order, however, did not contain any estimate as to the effect upon these figures of the reductions made by the award from what was requested in the application, and also of the exceptions stipulated in the award. In order to arrive at what the correct figures should be, after taking these reductions and exceptions into account, an estimate was made on the second day of the hearing jointly by W. Moule, Assistant Comptroller for the C.P.R., and by Alex. McDonald, Chief Accountant, as regards this appeal, for the Province of Manitoba. A copy of this estimate, signed by the above named accountants, is attached hereto. The basis on which it is made appears thereon, and the result indicates that the surplus above referred to would, after such exceptions and deductions are allowed for, probably entirely disappear. At any rate there does not appear a probability of any return so unwarrantable as to be evidence of such error on the part of the Railway Commissioners as would justify, for this cause alone, interference on the ground of mistake.

Canadian Railway and Marine World was advised from Ottawa, on Oct. 25, that no date had been fixed, by the Board of Railway Commissioners, for consideration of the matters referred to it by the Privy Council, and further that the Chief Commissioner was expected to return there, from the west, on Oct. 30. He is reported, in a press dispatch, to have said at Winnipeg, Oct. 26: "It will be some time before a new decision is handed down in the freight and passenger rates case, which was referred back to the Board of Railway Commissioners for reconsideration."

H. J. Symington, K.C., representing the Manitoba Government, is reported in a Winnipeg press dispatch of Oct. 26 to have applied there to the Chief Commissioner, Board of Railway Commissioners, Hon. F. B. Carvell, to suspend the increased rates authorized, pending further hearing, the dispatch stating that Mr. Carvell refused the application, saying that it must be made to Ottawa in the ordinary way.

Another Winnipeg press dispatch says that the Manitoba Government has instructed its counsel, H. J. Symington, to apply direct to the Dominion Government for a suspension of the increases authorized, pending the further hearing, and an Ottawa press dispatch says that D'Arcy Scott will make a similar application for the Saskatchewan Government. In view of the Dominion Government's recent decision to refer certain matters back to the Board of Railway Commissioners for further consideration, it is not likely that there will be any further action by the Government, at least not until after the Board has dealt with the matter.

**Canadian Pacific Railway—Estimate for 1921 of the results of recent rate increase.**

| | Jan. to June, 1920 | July to Dec. 1919, plus 20% increase in freight, 10% increase in passenger | Total | Taken as | Increase applied for Per cent. | Amount | Increase granted Per cent. | Amount. | Estimated Result. |
|---|---|---|---|---|---|---|---|---|---|
| Freight, eastern lines | $30,547,000 | $32,344,000 | $62,891,000 | $63,000,000 | 40% | $25,200,000 | 35% except coal, wood, etc. | $21,873,000 | |
| Freight, western lines | 30,325,000 | 43,297,000 | 73,622,000 | 74,000,000 | 40% | 29,600,000 | 30% except coal, wood, etc. | 21,505,000 | |
| Passenger, less deduction of troops and coolies carried in basic period | 19,443,000 | 25,574,000 | 45,017,000 | 45,000,000 | 20% | 9,000,000 | 10% to June 30th only | 1,920,000 | |
| Sleeping and parlor car fares | 1,954,000 | 2,368,000 | 5,085,000 | 5,000,000 | 50% | 2,500,000 | 50% | 2,500,000 | |
| Add a/c increased ratio granted in May, 1920 | 290,000 | 473,000 | | | | | | | |
| Express | 3,435,000 | 3,778,000 | 7,213,000 | 7,000,000 | ..... | ..... | ..... | ..... | ..... |
| Mail | 723,000 | 770,000 | 1,493,000 | 1,500,000 | ..... | ..... | ..... | ..... | ..... |
| Excess baggage | 190,000 | 210,000 | 400,000 | 400,000 | 20% | 80,000 | 20% | 80,000 | ..... |
| Milk | 133,000 | 117,000 | 250,000 | 250,000 | 40% | 100,000 | disallowed | ..... | ..... |
| Switching | 273,000 | 325,000 | 598,000 | 600,000 | 40% | 240,000 | disallowed | ..... | ..... |
| Other items | 3,530,000 | 3,350,000 | 6,880,000 | 7,000,000 | ..... | ..... | ..... | ..... | ..... |
| | $190,845,000 | $112,606,000 | | $203,750,000 | | $66,720,000 | | $47,878,0000 | $251,628,090 |
| Expenses— | | | | | | | | | |
| Actual | 80,629,000 | | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Estimated at same ratio as latter half year 1919, 7.3% of $112,606,000 | ..... | 89,292,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total before increase in wages and cost of coal and other material | ..... | ..... | ..... | 169,921,000 | ..... | ..... | ..... | ..... | ..... |
| Estimate of increased costs as per page 289 of judgment | ..... | ..... | | 47310,000 | ..... | ..... | ..... | ..... | 217,231,000 |
| Fixed charges and pension fund | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 34,397,000<br>11,350,000 |
| | | | | | | | ..... | ..... | 23,047,000 |
| Income tax 10½% | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2,420,000 |
| | | | | | | | ..... | ..... | 20,627,000 |
| Dividend requirements | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 21,427,277 |

Note:—Basis actual first six week 1920, plus 20% increase in volume of freight and 10% increase in passenger traffic over last half 1919.

# Traffic Orders by Board of Railway Commissioners.

**Increase in Through Rates Between the United States and Canada.**

General order 313, Sept. 22.—Re general order 303, Aug. 13, 1920, providing that the proportions of through rates, fares, and charges between the United States and Canada, in both directions, in effect at the date of the order, accruing within Canada, may, by general or blanket supplement to existing tariffs, be increased to conform to the increased rates, fares, and charges authorized by the Interstate Commerce Commission by order dated July 29. Whereas by Special Permission 50,480, dated Washington, D.C., Aug. 26, 1920, the Interstate Commerce Commission authorized U.S. carriers, or their agents, to file, upon one day's notice, special supplements correcting increased rates and charges filed under but not in conformity with its order dated July 29, as amended Aug. 11 and 18, it is therefore ordered that the Board's general order 303 be amended to provide that the said corrections, where necessary, be made in the general or blanket supplement authorized by the general order 303, upon one day's notice.

**Coal Rates from Telkwa to Prince Rupert.**

30,147. Sept. 27.—Re complaint of Thomas McClyment of Prince Rupert, B. C., that the Grand Trunk Pacific Ry.'s rate of $2.40 a net ton on coal from Telkwa, B.C., to Prince Rupert, B.C., is excessive and discrimintary compared with the rate charged by the railway from mines located on its Alberta lines. Upon hearing the complaint at Edmonton, Alta., June 21, in the presence of counsel for the railway company, no one appearing for the complainant, and upon reading the written submissions filed, it is ordered that the complaint be dismissed.

**Coal and Coke Rates from Minnesota to Western Canada.**

30,157. Oct. 1.—Re application of the Minneapolis, St. Paul & Sault Ste. Marie Ry. Co. for permission to issue on one day notice revised rates on coal and coke from Duluth, St. Paul, Minn., etc., to stations in Western Canada. Whereas the Interstate Commerce Commission has issued a special permission, authorizing a revision of the rates on coal and coke from Duluth, St. Paul, etc., to Western Canada, on one day notice, and it being necessary that similar permission should be granted to cover the railway haul within Canada, the Board orders that the Minneapolis, St. Paul & Sault Ste. Marie Ry. Company, or other railway companies operating from Duluth, St. Paul, etc., to stations in Western Canada, be permitted to file revised rates on coal and coke from Duluth, St. Paul, etc., to stations in Western Canada upon one day notice.

**Machinery Rates from Chicago and Milwaukee to Ontario.**

30,158. Oct. 4:—Re application of Chicago, Milwaukee & St. Paul Ry. for permission to publish, on 15 days notice, revised rates on machinery from Chicago and Milwaukee to stations in Ontario. Whereas the Interstate Commerce Commission has issued a special permission, authorizing a revision of rates on machinery from Chicago and Milwaukee to stations in Ontario, on 15 days notice, and it being necessary that similar permission should be granted to cover the railway haul within Canada, the Board orders that the Chicago, Milwaukee & St. Paul Ry. be permitted to file revised rates on machinery from Chicago and Milwaukee, to stations in Ontario, upon 15 days notice.

**Maine Central Rd. Passenger Tariff.**

30,164. Oct. 1.—Re application of Railway Association of Canada, on behalf of the railway companies members thereof and of all other railway companies within the Board's jurisdiction, for authority to make a general advance of 30% in tolls charged for carriage of freight, and the further application for an additional increase of 10% in all freight rates and an increase of 20% in passenger fares, 50% in sleeping and parlor car rates, 40% in milk rates, and 20% on excess baggage rates. Whereas the Maine Central Rd. has filed a supplement to its Standard Passenger Tariff C. R.C. 214, on the basis prescribed by the Board's judgment of Sept. 6, and General order 308, Sept. 9, it is ordered that the Maine Central Rd.'s Supplement 2 to Standard Passenger Tariff C.R.C. 214 be approved; the said supplement, with a reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

**Sydney and North Sydney Export and Import Rates.**

30,190. Oct. 6. — Re application of Boards of Trade of Sydney and North Sydney, N.S., that the said points be given the benefit of special tariffs on export and import freight, and for passengers holding steamship tickets, as possessed by other Canadian ports engaged in this traffic. Upon hearing the application at Ottawa, Sept. 27, the applicants, the Canadian National, Canadian Pacific and Grand Trunk Railways, and the Canadian Freight Association being represented at the hearing, and what was alleged, and its appearance that the Board has no jurisdiction over the rates on the Intercolonial Ry., the Board orders that the application be dismissed.

At the hearing, the applicants' case was stated by A. N. McLennan, President, and F. C. Kimber, Secretary, Sydney Board of Trade. The Assistant Chief Commissioner, S. J. McLean, gave the following judgment:—"The presentation of the merits in this case has been very ably put forward by Mr. McLennan. We can readily appreciate his desire to obtain this basis of rates. The fundamental question, however, is, the question of our powers. The Canadian National Rys. (using that term as descriptive of the System), is not as yet a term of legal precision. The Canadian National Rys. organization has not yet been fully worked out. We have jurisdiction now, as before, over the Canadian Northern Ry. The one great difficulty that arises in this case is that, in order to carry passengers and freight from Sydney, for a very considerable distance the lines of the Canadian Government Rys. have to be utilized. While at present the organization of the Canadian National System, as I have said, is a descriptive term, not a term of legal precision, it is looking after the management of the Canadian Northern and the Canadian Government Rys. But that fact of itself does not give us jurisdiction.

"There is the further point that, while provision is made in Canadian National legislation, that on the issuance of orders in council railways in which the Government has ownership or interest can be brought under our jurisdiction, no such order in council has been issued yet in regard to Canadian Government Rys. As our powers must be derived from acts passed by Parliament, we have to say frankly that we have been given no power to control rates over the Canadian Government Rys. or to compel them to initiate rates. Under the present circumstances, having no jurisdiction, notwithstanding the clear statement Mr. McLennan has put forward, the Board has no power to issue the order asked for. I am hopeful that Mr. McLennan's presentation as found in the record will bring about what is desired by him."

**Demurrage at Utopia.**

30,206. Oct. 11.—Re complaint of White & Co. Ltd., of Hamilton, Ont., against demurrage charged, under rule 5 of Canadian Car Demurrage Rules, on two cars of potatoes delayed in loading at Utopia, Ont. Upon hearing the complaint at Hamilton, Oct. 7, in the presence of representatives of the applicant and the Canadian Car Demurrage Bureau, and what was alleged, it is ordered that the complaint be dismissed.

**Release Form for Apple Shipments on Dominion Atlantic Ry.**

30,237. Oct. 21.—Re application of Dominion Atlantic Ry., under sec. 348 of the Railway Act, 1919, for approval of release form extending to shippers the privilege of shipping apples in ordinary box cars to the Maritime Provinces and the Province of Quebec, later than Nov. 1, at owner's risk of frost. Upon reading what is filed in support of the application and on behalf of the Nova Scotia Shippers Association, it is ordered that the applicant company's release form extending to shippers the privilege of shipping apples in ordinary box cars to the Maritime Provinces, and the Province of Quebec, later than Nov. 1, at owner's risk of frost, on file with the Board under file no. 16749.1, be approved as follows, viz..—

**Dominion Atlantic Railway Company Release.**

.....Station, .....19.....

Memorandum of Agreement made this..... day of ..... A.D. 19....., between ..... in the county of ..... of the one part, and the Dominion Atlantic Ry. Co. of the other part. The said..... hereby agrees to ship car of ..... number..... as described below, at his own risk of frost, and to assume all risk of freezing said ..... in transit. And further hereby releases the said Dominion Atlantic Ry. Co., or any common carrier on which the said car will be transported, from any and all claims for loss or damage by frost to said ..... while same are in transit and until delivery.

Car no. and initials..... Station from.....

Consigned to..... Destination.....

.....Witness. .....Shipper.

**Crude Ore Rate from Sandon, B.C.**

30,255. Oct. 23.—Re application of C. Cunningham, of Alamo, B.C., for an order reducing the C.P.R. rate on crude ore from Sandon, B.C., to the Alamo concentrator, from 70c. a net ton to 35c. a net ton; and also directing reparation accordingly from the commencement of shipping in June, 1919. Upon hearing the application at Calgary, Alta., June 15, in the presence of counsel for the railway company, the applicant appearing in person, and what was alleged, and upon reading the written submissions filed, the Board orders that the application be refused.

**Demurrage on Tank Cars at Vancouver.**

The Board of Railway Commissioners gave the following interim ruling in the case of Procter & Gamble and the Canadian Freight Association, on May 3,

which was made public on Oct. 1:—Five P.G.X. tank cars were billed from a point in the United States consigned to the owner's representative in Vancouver, B. C., to be loaded with cocoanut oil in cases ex steamship. No requisition, it was alleged, had been made for the tank cars, the oil having been loaded in box cars, and the former were rebilled, empty, to Seattle on instructions from the owners, who then applied to the C.P.R. for cancellation of the accrued demurrage. Subject to the submission of objections, which have not been made, the Board ruled as follows:—The Board's investigation indicates that the lack of facilities, alleged to be a lack on the part of the C.P.R., has reference to the absence of facilities at Vancouver for liquifying the cocoanut oil received from the steamship Meigan Maru—a facility which the Railway Act does not require the railway company to furnish; that the tanks cars in question were consigned to Vancouver, where they were not required and had not been ordered; that tank car mileage equalization has no bearing on demurrage; that the exception to rule 1 of the Canadian Car Demurrage Rules exempting empty private cars stored on carriers' or private tracks has no application in the circumstances, and that rule 4 (f) of the said rules provides that when empty cars are placed for loading on orders and are not used, demurrage shall be charged from the first 7 a.m. after placement until released without any free time allowance.

# Canadian Pacific Railway Construction, Betterments, Etc.

**St. John Level Crossing.**—A press report states that the Chief Commissioner, Board of Railway Commissioners, was in consultation with the Mayor and others interested, as to the elimination of the level crossing at Douglas Ave., St. John, N.B. The report states that an overhead crossing is favored at a cost estimated at from $100,000 to $150,000.

**Timiskaming, Que., District.**—A press report states that the Quebec Government on Oct. 8 ratified a contract with the C.P.R. for the construction of a railway from Timiskaming, Que., the terminus of the C.P.R. Mattawa branch, to the Quinze River Falls, for which the Quebec Legislature voted a subsidy at its last session.

The Board of Railway Commissioners passed order 30,420, Oct. 22, approving Interprovincial & James Bay Ry. revised route map of general location, from terminus of its line already built, at mile 10, to mile 70, near Riviere des Quinze.

The C.P.R. owns the charter of the Interprovincial and James Bay Ry., under which 10 miles of track were laid from Kipawa, the terminus of a branch line from Timiskaming, northerly, and surveys were made for its construction to Ville Marie and the Quinze River Falls. The project remained in abeyance for some years until last spring. (Oct., pg. 551.)

**Westboro Station.**—The Board of Railway Commissioners has ordered the building of a station with passenger, freight, express and telegraph accommodation, at or near Victoria Ave., Westboro, Ont., by Dec. 1. Westboro is on the outskirts of Ottawa, and the order is the outcome of an application made by the residents.

**Harriston to Listowel.**—A press report states that surveys are being made for a line from Harriston, Ont., mile 104 from Toronto, on the Wingham-Teeswater branch, through Palmerston, to Listowel, the terminus of a branch from Linwood on the Toronto-Guelph-Goderich line. Enquiry at the C.P.R.'s Ontario District headquarters has elicited the information that nothing is known there of any such projected line and that the press report referred to above is undoubtedly incorrect.

**Windsor Yard.**—The Board of Railway Commissioners recently heard objections of the Windsor, Ont., City Council to the plans for the extension of the C.P.R. yards there. The company desires to lay tracks on Caron Ave., to which the city objects.

**Algoma District Bridges.**—The Board of Railway Commissioners has authorized the rebuilding of bridges at the following points:—bridge 29.27 over Riley's Creek, North Bay Subdivision; bridge 91.48, Carter Subdivision; bridge 19.17, White River Subdivision; bridge 81.5 over Little Pic River, Heron Bay Subdivision.

**Winnipeg Subway.** — A press report credits the Winnipeg City Engineer with stating that plans for a subway under the C.P.R. tracks at Sherbrooke St., Winnipeg, to connect with Andrews St., are nearly completed. They will provide for a subway 973 ft. long, carrying 58 tracks, and the approaches will add 920 ft. more of construction, the structure to be 68 ft. wide, with 14 ft. 8 in. headway, and to be built of steel and concrete.

**Conquest Transfer Track.**—The Board of Railway Commissioners on Sept. 23 ordered the C.P.R. to build a transfer track to connect its tracks with the Canadian National Rys. at Conquest, Sask., by Nov. 1.

**Leader Southeasterly Branch.** — The Board of Railway Commissioners has approved revised location of a portion of this line from Leader, Sask., southeasterly, mile 0 to 25.7.

**Swift Current Northwesterly Branch.** The Board of Railway Commissioners has approved revised location of a portion of this line from Swift Current, Sask., northwesterly, from mile 28.6 to 34.23, and has authorized the building of the line across certain road allowances. (Oct., pg. 551.)

## Grain Inspected at Western Points.

The following figures, compiled by the Dominion Bureau of Statistics' Internal Trade Division, show the number of cars of grain inspected at Winnipeg and other points on the Western Division, during Sept., 1920, and Sept., 1919:—

| | Sept. 1920 | Sept. 1920 |
|---|---|---|
| Canadian National Rys. ..... | 5,502 | 7,100 |
| Canadian Pacific Ry. ..... | 11,595 | 10,878 |
| Grand Trunk Pacific Ry. ..... | 1,552 | 2,829 |
| Great Northern Ry. (Duluth) | 101 | 130 |
| Totals . . ..... | 18,750 | 20,937 |

The Franklin Medal has been awarded to Sir Charles Parsons "in recognition of his epoch-making success in the development and the construction of the steam turbine, which has revolutionized the art of steam engineering, particularly in regard to the propulsion of mercantile and naval vessels, and the driving of electrical generators."

## Oil Fuel Experiments on British Railways.

The Great Central Ry. and the London & Northwestern Ry. in England have been carrying on a series of experiments with oil and other fuels for locomotives. The tests on the L. & N.W.R., which have been carried out by C. J. Bowen Cooke, Chief Mechanical Engineer, extending over some months past, have yielded very satisfactory results, and it is believed that the employment of oil fuel has now reached a stage when express trains can be hauled without risk of breakdown, by oil fired locomotives.

There has been no attempt to do otherwise than proceed by slow stages, and while more than one new fuel has been the subject of experiment it is said that the Scarab oil burning system, which was developed in Mesopotamia during the war, is that which has up to the present shown the best results with oil fuel. In the locomotive with which trial runs between London and Birmingham were made recently, the oil fuel is carried in a tank, having a capacity of 1,000 gall., which is mounted on the tender, the oil being fed to the burners by gravity. The locomotive, the Watt, is one of the old Precursor type, non-superheated, and has been fired on oil fuel some months past. The train load on a recent test, when the oil fired locomotive worked the 11.30 a. m. from Euston to Birmingham and the 4.50 p.m. return train, was nearly 300 tons, but on both the outward and return trips, with one stop in each case, the journey was accomplished ahead of the scheduled time.

The figures of oil consumption, which have hitherto been withheld by both the Great Central and London and Northwestern Rys., have in the case of the last named company now been issued. They indicate that, as compared with an average consumption of about 70 lb. of coal a mile with the same load on a similar run, the locomotive working on oil fuel with a train load of 294 tons consumed 32 lb. of oil a mile, or 10.88 lb. per 100 ton miles. Nor should the economy realized end with the saving of fuel, as the oil fired locomotive requires far less cleaning than a coal burning one, and the conversion of a large number of locomotives from coal to oil, which could be effected in a very short space of time, should be associated with a considerable saving of labor charges in running sheds and locomotive houses.

Much would, of course, depend on the relative prices of coal and oil fuel, and it is certain that any attempt to convert the whole of the existing coal fired locomotives on British railways to oil burning would be associated with a rise in price of the fuel which might counterbalance the savings in other directions.

**Creeping of Railway Rails.**—J. A. L. Waddell, consulting engineer, 35 Nassau St., New York, N.Y., writes Canadian Railway and Marine World: "The American Society of Civil Engineers is about to issue a paper of mine, entitled 'The Creeping of Railway Rails,' which consists mainly of a compendium of information received through a questionaire from over 100 of the highest authorities on the subject in North America. I greatly desire to have this paper discussed thoroughly, so if any railway man wishing to discuss it will write me to that effect, I shall send him an advance copy, provided that his letter reaches me before my supply of copies is exhausted."

# Mainly About Railway People Throughout Canada.

R. B. Angus, one of the C.P.R. directors, closed his summer house at Senneville, Que., early in October, and returned to Montreal.

J. R. Ayers, General Master Painter, C.P.R., who has supervision of painting of locomotives and cars, over the whole system, with headquarters at Angus shops, Montreal, has been elected Second Vice President, Equipment Painting Division, Section 3, Mechanical, American Railway Association.

Augustus Brostedt, whose appointment as General Freight Agent, Canadian National-Grand Trunk Pacific Rys., and Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C., was announced in our last issue, was born in Sweden in 1877 and entered railway service in 1898, since when he has been, to 1901, operator, cashier and agent, Great Northern Ry., Moosehead, Minn.; 1901 to 1903, Travelling Passenger Agent, same road, Philadelphia, Pa.; 1903 to 1905, District Passenger Agent, same road, Pittsburg, Pa.; 1905 to 1907, Northern Passenger Agent, same road, Duluth, Minn.; 1907 to 1913, District Freight and Passenger Agent, same road, Winnipeg; 1913 to 1915, District Freight Agent, Canadian Northern Ry. Calgary, Alta.; 1915 to 1917, District Freight and Passenger Agent, same road, Vancouver, B.C.; 1919 to Aug. 31, 1920, Assistant Freight and Passenger Agent, Canadian National Rys., Vancouver, B.C.

Lady Brown, wife of Sir Geo. McLaren Brown, General European Manager, C.P.R., reached Quebec by the s.s. Empress of Britain, on Oct. 6, and, after staying a short time in Montreal, went on to Hamilton, Ont., to visit her mother, Mrs. Crerar.

M. Brown, chief clerk, Import Freight Department, G.T.R., Toronto, died there, Oct. 13, after a short illness. He had been in G.T.R. service since 1882.

J. R. Cameron, who arrived at Vancouver, B.C., at the end of September, to take over the duties of Assistant General Manager, Canadian National - Grand Trunk Pacific Rys., was recalled to Winnipeg almost immediately, owing to the serious illness of his mother, who died shortly after his return there, aged 91. She was buried at Truro, N.S.

Senator N. Curry, Chairman of the Board, Canadian Car & Foundry Co., Montreal, and Mrs. Curry and daughter, travelled from Belgium to London, Eng., by aeroplane, on Oct. 10, after visiting his son's grave in the battlefield area.

John Devereux, Locomotive Foreman, Canadian National Rys., Campbellton, N. B., has been superannuated, after 43 years service.

Jas. W. Doyle, formerly General Manager at St. Peters, N.S., of the Cape Breton Ry., which has been taken over by the Dominion Government, and merged into the Canadian National Rys., was presented with an address and a smoking cabinet, recently, by employes who had been under his jurisdiction.

R. L. Fairbairn, who has been appointed Assistant Passenger Traffic Managar, Eastern Lines, Canadian National Rys., Toronto, was born at Stillwater, Minn., Nov. 24, 1880, his parentage being Canadian. He entered railway service in July, 1899, since when he has been, to Mar. 1904 in office of Auditor of Passenger Receipts, G.N.R.; Mar. 1904 to May 1, 1906, in Passenger Traffic Manager's office, same road; May 1 to Dec. 1, 1906, assistant rate clerk, Passenger Department, same road; Dec. 1, 1906 to June 1, 1908, chief rate clerk, Passenger Department, same road; June 15, 1908 to Oct. 1910, chief clerk, Passenger Department, Canadian Northern Ry., Winnipeg; Oct. 1910 to Apr. 1911, District Passenger Agent, C.N.R., Saskatoon, Sask.; Apr. 1911 to May 1912, Assistant General Passenger Agent, lines east of Port Arthur, C.N.R., Toronto; May 1912 to Oct. 4, 1920, General Passenger Agent, Eastern Lines, Canadian Northern Ry., and latterly Canadian National Rys., Toronto.

W. J. Fee, Travelling Egineer, G.T.R., was elected Fourth Vice President, Travelling Engineers Association, at the annual convention in Chicago recently.

Sir Ailwyn Fellowes, K.C.V.O., Deputy Chairman, Great Eastern Ry., returned to England, by the s.s. Megantic, Oct. 16, after a trip through Canada.

A. Brostedt,
General Freight Agent, Canadian National-Grand Trunk Pacific Rys., Vancouver, B.C.

Blake P. Fraser, Division Passenger Agent, Pennsylvania System, Buffalo, N. Y., died suddenly there, Oct. 24.

J. M. Gibbon, General Publicity Agent, C.P.R., Montreal, has written another novel, "The Conquering Hero." Opening in a hunting party's camp in the Maritime Provinces, the scenes shift to a ranch near the Rocky Mountains, without breaking the continuity or interest of the tale.

T. H. Ginnelly, of the Freight Claims Department, C.N.R., Winnipeg, was presented with a case of pipes and a gold penknife, with a gold wrist watch and cut glass bowl for Mrs. Ginnelly, recently, by a number of his friends, on leaving Winnipeg, for Vancouver, B.C., where he has been appointed Assistant Freight Claims Agent, Canadian National-Grand Trunk Pacific Rys.

Sacheveral M. Greene, whose appointment as City Ticket Agent, Canadian National-Grand Trunk Pacific Rys., Regina, Sask., was announced in our last issue, was born at Derby, Eng., Feb. 15, 1887, and entered railway service Aug. 28, 1908, since when he has been, to May 30, 1910, clerk, Freight Department, Grand Trunk Pacific Ry., Saskatoon, Sask.; June 1 to July 18, 1910, cashier, Freight Department, C.P.R., Saskatoon, Sask.; July 19, 1910, to Feb. 28, 1916, Assistant City Passenger and Ticket Agent, G.T.P.R., Saskatoon, Sask.; Mar. 1, 1916, to Aug. 31, 1920, City Passenger and Ticket Agent, G.T.P.R., Regina, Sask.

George Nelson Goad, whose appointment as Superintendent, Nipissing Division, Ontario District, Canadian National Rys., Capreol, Ont., was announced in our last issue, was born at Toronto, Nov. 26, 1884, and entered railway service in Sept. 1901, since when he has been, to July 1902, junior clerk, G.T.R., Toronto; July 1902 to Sept. 1904, junior clerk and stenographer, Division Freight Agent's office, G.T.R., Toronto; Sept. 1904 to Dec. 1905, chief clerk Division Freight Agent's office, Lehigh Valley Rd., Toronto; Dec. 1905 to Feb. 28, 1907, stenographer to Third Vice President, Canadian Northern Ry., Toronto; Mar. 1, 1907, to Aug. 31, 1915, chief clerk to Superintendent, and to General Superintendent, successively, same road, Toronto; Sept. 1 to Dec. 31, 1915, chief clerk, General Manager's office, same road, Toronto; Jan. 1 to Dec. 20, 1916, Inspector of Transportation, Eastern Lines, same road, Toronto; Dec. 21, 1916 to Nov. 30, 1917, Trainmaster, Toronto Terminals and Muskoka Subdivision, same road, Toronto; Dec. 1, 1917, to Dec. 22, 1918, Assistant Superintendent, Toronto Division, same road, Toronto; Dec. 23, 1918, to Aug. 31, 1920, Superintendent, Superior Division, Ontario District, Canadian National Rys., Hornepayne, Ont.

Casimir Stanislaus Gzowski, who has been appointed Assistant to Vice President of Construction, Canadian National Rys.-Grand Trunk Pacific Ry., Toronto, was born at Toronto, May 1, 1876, and entered transportation service in April, 1897. While attending Toronto University he was engaged during the summers on survey work, in 1897 being with the C.P.R. on survey and construction on its Crowsnest Branch and subsequently in various positions in charge of location and construction work for the C.P.R. and other roads. In 1905 he became a partner in Macdonell, Gzowski & Co., Vancouver, B.C., and later with a branch in Spokane, Wash., under the name of G. O. Foss & Co., as contractors and engineers, building the C.P.R. Nicola Branch, changes of line on C.P.R. at Rogers Pass, near Nelson, B.C., and on the Esquimalt & Nanaimo Ry., Vancouver Island. The firm also built parts of the Milwaukee extension westerly, Grand Northern Ry. changes of lines and parts of branches in Canada and the U.S.; C.P.R. spiral tunnels at Field, B.C., and considerable other railway work in Canada and the U.S., until its dissolution in 1914, after which he did valuation work for the Dominion commission of enquiry into railways and also acted as special engineer for the Canadian Northern Ry. on the ation. From June, 1919, to Sept. 1920, government arbitration of its stock valuhe was Special Engineer to Vice President, Operation, Maintenance and Construction, Canadian National Rys., Toronto.

Grant Hall, Vice President, C.P.R., returned to Montreal, Oct. 12, after a shooting trip at Bonney River, where he secured a large moose.

Sir Arthur Harris, Special Traffic Representative, C.P.R., and Lady Harris, returned to Montreal early in October from Murray Bay, and were to sail for Bermuda on Oct. 29.

George Alexander Hoag, whose appointment as Superintendent of Transportation, Ontario District, Canadian National Rys., Toronto, was announced in our last issue, was born at Walters Falls, Ont., May 31, 1866, and educated at Kingston, Ont., public schools and business college. He entered railway service June 8, 1884, as switchman, G.T.R., and served at various points until May 3, 1886, when he was appointed night operator, and promoted to day operator and relieving agent, Jan. 1888. From 1899 to 1901, he was agent, same road, Trenton, Ont.; 1901 to 1905, Yardmaster, same road, Belleville, Ont.; Oct. 1905 to Mar. 1908, Trainmaster, Central Ontario Ry., Trenton, Ont.; Mar. 1, 1908 to July 1914, Superintendent, same road, Trenton, Ont.; July 1914, appointed Superintendent of Car Service, Eastern Lines, Canadian Northern Ry., Toronto; and later, to Apr. 1916, Assistant Superintendent, same road, Ottawa, Ont.; Apr. to Aug. 1916, Assistant Superintendent, Toronto District, Ontario Division, same road, Rosedale, Toronto; Aug. 1916 to Apr. 1917, Assistant Superintendent, Toronto District, Ontario Division, same road, Trenton, Ont.; Apr. to Nov. 1, 1917, Assistant Superintendent, Toronto District, Ontario Division, same road, Toronto; Nov. 1, 1917, to Dec. 1918, Superintendent, Superior District, Ontario Division, same road, Hornepayne, Ont.; Dec. 1918 to Sept. 1920, Superintendent, Nipissing Division, Ontario District, Canadian National Rys., Capreol, Ont.

F. L. Hutchinson, Manager in Chief, C.P.R. hotel, Montreal, is reported to have decided to retire from that company's service at the end of the year, and to have bought a farm of 260 acres near Chemainus, B.C.

William Albert Kirkpatrick, whose appointment as Superintendent of Transportation, Prairie District, Canadian National Rys., Saskatoon, Sask., was announced in our last issue, was born at West Lorne, Ont., Aug. 28, 1883, and entered railway service in July 1898, since when he has been, to Sept. 1902, operator and agent, Michigan Central Rd., at various points; Sept. 1902 to Dec. 1904, dispatcher, Pere Marquette Rd., St. Thomas, Ont.; Apr. to Aug. 17, 1905, operator and ticket agent, C.P.R.; Aug. 17, 1905, to Dec. 1, 1906, operator and dispatcher, Canadian Northern Ry.; Dec. 1, 1906, to Dec. 1, 1910, chief clerk to Superintendent, and General Superintendent, same road; Dec. 1, 1910, to Sept. 1, 1913, Inspector of Transportation, same road; Sept. 1, 1913, to Sept. 1, 1920, Trainmaster and Assistant Superintendent, same road, latterly, Canadian National Rys., Neepawa, Man.

J. W. N. Johnstone, who has been appointed General Agent for the Dominion of Newfoundland, Canadian National Rys. and Canadian Government Merchant Marine Ltd., St. John's, Nfld., was born at Campobello, N.B., Oct. 4, 1878, and entered transportation service in the General Freight Department, C.P.R., St. John, N.B., serving in various capacities in that department from junior clerk to assistant to chief clerk, until Feb. 1902, when he entered Reid Newfoundland Co.'s service as chief clerk to the General Freight Agent, St. John's, Nfld. He was appointed General Passenger Agent for that company, Aug. 21, 1906, and for a short time, at the end of 1917, was also Assistant to the President (Sir William D. Reid), and subsequent to the change of President, he acted as Sir William D. Reid's private Secretary.

E. McDonald, whose appointment as Assistant General Baggage Agent, Canadian National-Grand Trunk Pacific Rys., Winnipeg, was announced in our last issue, was, from June, 1906, to May, 1910, clerk, G.T.R., Toronto; May, 1910, to Sept., 1920, General Baggage Agent, Grand Trunk Pacific Ry., Winnipeg.

G. E. McGlade, City Ticket Agent, C. P.R., Brockville, Ont., was struck by an automobile there, on Oct. 11, sustaining a sprained ankle and severe bruises, necessitating his removal to a hospital.

A. J. Mitchell, Vice President, Finance and Accounts, Canadian National Rys., who left Toronto Sept. 28 for England, is expected to sail from there on Nov. 3

L. F. Muncey,
Superintendent, Canadian National Railways,
Kamloops, B.C.

by the s.s. Adriatic on his return journey.

L. F. Muncey, whose appointment as Superintendent, Canadian National Rys., Kamloops, B.C., was announced in our last issue, was born at Kensington, P.E. I., Mar. 15, 1876, and entered railway service in Aug. 1891, since when he has been, to Oct. 1893, operator, New Brunswick & Prince Edward Island Ry., Cape Tormentine, N.B.; Aug. 1896 to Aug. 1897, relieving agent, Prince Edward Island Ry.; Aug. 1897 to June 1901, audit clerk, P.E.I.R., Charlottetown, P.E.I.; June 1901 to Aug. 1902, agent and operator, Canadian Northern Ry., at various points; Aug. 1902 to May 1908, Travelling Auditor, same road, Winnipeg; May 1908 to Apr. 1909, Chief Travelling Auditor, same road, Winnipeg; Apr. 1909 to Dec. 1914, agent, same road, Beaudette, Minn.; Dec. 1914 to May 1919, General Chairman of Order of Railroad Telegraphers, Winnipeg; May 1919 to Aug. 1920, Assistant Superintendent, Canadian National Rys., Vancouver, B.C.

F. L. Norman, whose appointment as Commercial Agent, Canadian National-Grand Trunk Pacific Rys., Seattle, Wash., was announced in our last issue, was born at Kansas City, Mo., Jan. 30, 1879, and entered railway service Feb. 1, 1906, since when he has been, to Feb. 1, 1907, Soliciting Freight Agent, Rutland Rd., Michigan Central Rd., and Ontario Central Despatch Lines, Kansas City, Mo.; Mar. 1, 1907, to June 1, 1910, Soliciting Freight Agent, G.T.R., Kansas City, Mo.; June 1, 1910, to June 30, 1918, Commercial Agent, G.T.R., Seattle, Wash.; July 1, 1918, to Sept. 8, 1920, Commercial Agent, Grand Trunk Pacific Ry. and Grand Trunk Pacific Coast Steamship Co., Seattle, Wash.

John Henry Pakenham, whose appointment as Assistant Superintendent of Terminals, Canadian National Rys., Quebec, Que., was announced in our last issue, was bor nat St. Raymond, Que., Nov. 24, 1886, and entered railway service in July 1903, since when he has been, to May 1904, assistant agent, Quebec & Lake St. John Ry., St. Raymond, Que.; May 1904 to Oct. 1905, operator and agent, same road, at various points; Oct. 1905 to June 1907, operator, C.P.R., at various points; June 1907 to Aug. 1909, dispatcher, C.P.R., Kenora, Ont.; Nov. 1909 to Mar. 1910, operator, C.P.R., at various points; May 1910 to Aug. 1913, train baggageman, Canadian Northern Ry., Quebec, Que.; Aug. 1913 to Nov. 1918, Yardmaster, C.N.R., Quebec, Que.; Nov. 1918 to Sept. 1920, dispatcher, Canadian National Rys., Montreal.

Thomas Edmund Peter Pringle, whose appointment as City Passenger Agent, Canadian National-Grand Trunk Pacific Rys., Winnipeg, was announced in our last issue, was born at Huntingdon, Que., May 1, 1887, and entered railway service July 23, 1906, since when he has been, to Aug. 16, 1907, clerk, Passenger Traffic Manager's office, C.P.R., Montreal; Aug. 17, 1907, to May 15, 1909, ticket clerk, C.P.R., Calgary, Alta.; May 16, 1909, to Sept. 15, 1911, ticket clerk, City ticket office, C.P.R., Winnipeg; Sept. 16, 1911, to Aug. 11, 1920, City Passenger and Ticket Agent, Grand Trunk Pacific Ry., Winnipeg.

Miss Elsie Robider, daughter of W. J. Robider, General Master Car Builder, C.P.R., was married at Montreal Oct. 2, to Dr. M. J. Egan, of Savannah, Georgia.

William A. B. Russell, whose appointment as Division Freight Agent, Canadian National-Grand Trunk Pacific Rys., Calgary, Alta., was announced in our last issue, was born at Rednersville, Ont., Jan. 1, 1886, and entered railway service Mar. 20, 1904, since when he has been, to Apr. 30, 1904, clerk, Local Freight Department, Central Vermont Ry., St. Albans, Vt.; May 1 to Nov. 17, 1904, stenographer, General Freight Agent's office, same road St. Albans, Vt.; Nov. 17, 1904, to Aug. 14, 1905, stenographer to General Freight Agent, same road, St. Albans, Vt.; Aug. 15, 1905, to Apr. 30, 1908, stenographer to General Freight Agent, G.T.R., Montreal; May 1 to Dec. 31, 1908, stenographer to Assistant Freight Traffic Manager, Winnipeg; Jan. 1, 1909, to Dec. 31, 1910, clerk, Freight Traffic Department, same road, Winnipeg; Jan. 1, 1911, to Dec. 31, 1915, chief clerk, Freight Traffic Department, same road, Winnipeg; Jan. 1 to Sept. 30, 1916, chief clerk to Traffic Manager, G.T.P.R., and Western Traffic Manager, Canadian Government Rys., Winnipeg; Oct. 1, 1916,

to Sept. 4, 1920, Commercial Agent, G. T.P.R., Regina, Sask.

**Frank L. Sample**, who has been appointed Assistant Superintendent of Terminals, G.T.R., Detroit, Mich., was born at Altona, N.Y., June 23, 1873, and entered railway service in Oct. 1891, since when he has been, to Sept. 1892, telegraph operator, Central Vermont Ry., Essex Jct., Vt.; Sept. 1892 to Aug. 1899, dispatcher, same road, New London, Conn.; Aug. 1899 to May 1901, ticket agent and spare dispatcher, New York, New Haven & Hartford Rd., Norwich, Conn.; May 1901 to Apr. 1902, dispatcher, Rutland Rd., Rutland, Vt.; Apr. 1902 to Sept. 1920, dispatcher, Boston & Albany Rd., Springfield, Mass., and Trainmaster, same road, Pittsfield, Mass.

**John Richardson Scott**, whose appointment as Assistant General Freight Agent, British Columbia Lines, Canadian National-Grand Trunk Pacific Rys., and Grand Trunk Pacific Coast Steamship Ct., Vancouver, B.C., was announced in our last issue, was born at Lochmaben, Scotland, Jan. 3, 1882, and entered railway service in 1896, since when he has been, to 1898, junior clerk, Freight Department, Caledonian Ry., Lanark, Scotland; 1898 to 1899, clerk, Passenger Department, same road, Kelvinbridge, Glasgow, Scotland; 1899 to 1900, assistant parcels clerk, same road, Bridge St. station, Glasgow, Scotland; 1900 to 1902, clerk, Passenger Department, same road, Wishaw Central, Scotland; Aug. 1902 to Mar. 1908, clerk and chief clerk, Import Freight Department, C.P.R., Montreal; Apr. 1908 to Nov. 1915, clerk and chief clerk, Freight Traffis Department, Canadian Northern Ry., Winnipeg; Dec. 1915 to Sept. 10, 1920, Division Freight Agent, Canadian Northern Ry., and Canadian National Rys., Port Arthur, Ont.

**Mrs. Alfred Shaughnessy**, widow of Capt. the Hon. Alfred Shaughnessy, Lord Shaughnessy's son, who was killed in the war, is announced as being engaged in England to Capt. the Hon. P. W. Legh, son of Lord Newton.

**Lord Shaughnessy**, Chairman, C.P.R. Co., Hon. Marguerite Shaughnessy, and Hon. W. J. and Mrs. Shaughnessy, attended the race at Windsor, Ont., Oct. 11, between Man o' War and Sir Barton, the latter horse being owned by J. K. L. Ross, one of the C.P.R. directors.

**Frederick Anderson Shaw**, who has been appointed General Agent, Freight Department, Canadian National-Grand Trunk Rys., Cleveland, Ohio, was born at Smiths Falls, Ont., Sept. 29, 1872, and entered railway service in 1897, since when he has been, to Feb. 1898, billing clerk, C.P.R., Winnipeg; Feb. to June 1908, clerk, Local Freight Department, C.P.R., Brandon, Man.; June 1898 to Oct. 1899, with Foley Bros. and Larson, St. Paul, Minn.; Oct. 1899 to 1902, in commercial business, Montreal; 1902 to 1903, chief clerk, Commercial Agent's office, Canadian Northern Ry., Montreal; 1903 to 1904, Travelling Freight Agent, C.N.R., Toronto; 1904 to 1906, Soliciting Freight Agent, C.N.R., Montreal; 1906 to 1912, City Freight Agent, C.N.R., Montreal; 1912 to Jan. 1, 1914, District Freight Agent, lines east of Montreal, C.N.R., Montreal; Jan. 1, 1914, to Apr. 9, 1917, Division Freight Agent, lines east of Port Arthur and west of Ottawa, C. N.R., Toronto; Apr. 9, 1917, to Sept. 10, 1920, General Agent, Freight and Passenger Departments, Canadian National Rys., Detroit, Mich.

**George Stephen**, whose appointment as Freight Traffic Manager, Canadian National and Grand Trunk Pacific Rys., and Grand Trunk Pacific Coast Steamship Co., Toronto, was announced in a recent issue, was born at Montreal, July 5, 1876, and entered railway service in 1889, since when he has been, to 1899, clerk, C.P.R.; 1899 to 1900, chief clerk to Assistant General Freight Agent, C.P.R., Winnipeg; 1900 to 1901, Travelling Freight Agent, Manitoba Lines, C.P.R.; 1901 to 1903, Contracting Freight Agent, C.P.R., Nelson, B.C.; 1903 to Jan. 1907, chief clerk to General Traffic Manager, Canadian Northern Ry., Winnipeg; Jan. 1907 to May 1909, Assistant General Freight Agent, C.N.R., Winnipeg; May 1909 to Dec. 31, 1915, General Freight Agent, C.N.R., Winnipeg; Jan. 1 to Nov. 6, 1916, Assistant Freight Traffic Manager, Western Lines, C.N.R., Winnipeg; Nov. 1916 to Dec. 1918, Freight Traffic Manager, Western Lines, Canadian Northern Ry., Winnipeg; Dec. 1918 to Aug. 24, 1920, Freight Traffic Manager, Canadian National Rys., Toronto.

**A. F. Stewart**, heretofore Chief Engineer, Canadian National Rys. at Toronto, was entertained at dinner at the Albany Club there, and presented with a handsome clock, on Oct. 15, by a number of C.N.R. officials and other personal friends, on the eve of his leaving for Moncton, N.B., to become Chief Engineer, C.N.R., there.

**Brigadier General J. W. Stewart**, railway contractor, and his daughter, Miss Margaret Stewart, returned to Vancouver, early in October, from England.

**Lt. Col. Claude C. Stibbard, D.S.O.**, who was appointed Trainmaster, C.P.R., at Lethbridge, Alta., on Aug. 1, was born in Essex, Eng., Oct. 19, 1885. He first entered transportation service Jan. 17, 1906, and was from 1910 to 1915 locomotiveman, C.P.R., at Winnipeg. After serving with the Canadian overseas forces for a year, he was selected by the War Office to be seconded to the Imperial forces, and to be attached to Sir Eric Geddes' organization department, when the latter took over the re-organization of railways on the western front. He remained in this position throughout the whole of Sir Eric Geddes' term of service as Director General of Transportation, and also throughout the terms of service of Major General Sir Phillip A. M. Nash, and Major General Sir S. D. A. Crookshank, successors in turn to Sir Eric Geddes, as Directors General of Transportation. In Nov. 1918, he was ordered to North Russia, to assist in the reorganization of the railways in that region, and was appointed Director of Railways. One of the many problems was the solving of the financial difficulties, and that this and all other problems were handled successfully is evidence by a letter of appreciation which he received from the General Officer Commanding the North Russian forces. Following the evacuation of the North Russian forces, he was appointed to the Railway Advisory Staff for South Russia, as Officer Commanding Railways in Ekatorinodar, and also for the whole of the Crimea. He made a tour of inspection through Turkey, Bulgaria, Roumania, Jugo-Slavia, Italy and Switzerland, to compare the various systems of railway management and organization. For his work on railways during the war, he was awarded the D.S.O. and the order of St. Stanislaus, was twice mentioned in dispatches and was the subject of special orders of the day from Lord Rawlinson, and from the Russian General Officer Commanding in the Crimea. He was on the steamship Carpathia when she was torpedoed, and lost all the effects he was travelling with.

**Marshall D. Thompson**, whose appointment as Superintendent, Canadian National-Grand Trunk Pacific Rys., Regina, Sask., was announced in our last issue, was born at Parkhill, Ont., Aug. 9, 1885, and entered railway service Aug. 16, 1901, since when he has been, to Mar. 1904, operator, G.T.R., Stratford, Ont.; Mar. 1904 to Aug. 1906, dispatcher, G.T.R., Stratford, Ont.; Aug. 1906 to Oct. 1908, dispatcher, G.T.R., Allandale, Ont.; Oct. 1908 to July 1909, dispatcher, Grand Trunk Pacific Ry., Melville, Sask.; July 1909 to June 1910, Chief Dispatcher, G.T. P.R., Wainwright, Alta.; June 1910 to Nov. 1917, Chief Dispatcher, G.T.P.R., Melville, Sask.; Nov. 1917 to Sept. 1920, Assistant Superintendent, G.T.P.R., Regina, Sask.

**Ephraim Tiffin**, Special Representative, Canadian National Rys., Toronto, after a lengthy illness, died Oct. 2, at Preston, Ont., where he and his wife had lived for several years with their daughter, Mrs. E. O. Schlueter. He was born at Hamilton, Ont., May 5, 1849, and entered railway service in 1863, since when he had been to 1865, messenger, Chief Engineer's office, Great Western Ry. of Canada; 1865 to 1867, clerk in General Manager's office, same road; 1867 to 1869, ticket clerk, same road, London and Toronto, consecutively; 1869 to 1871, clerk in Superintendent's office, same road; 1871 to 1877, station master, same road, Brantford, Ont.; 1877 to 1811, Travelling Freight Agent, same road; 1881 to 1888, General Freight Agent, Credit Valley Ry., Toronto; and he remained in that position during several reorganizations, viz., Credit Valley and Toronto Grey & Bruce Rys.; Ontario & Quebec Ry.; and Ontario Division, C.P.R.; 1888 to 1890, General Southwestern Agent, Commercial Express Fast Freight Line, St. Louis, Mo.; 1890 to Feb. 1896, General Freight Agent, Atlantic Division, C.P.R., St. John, N.B.; Feb. 1896 to Jan. 1901, General Freight Agent, Ontario Division, C. P.R., Toronto; Jan. 1901 to Apr. 1909, Traffic Manager, Intercolonial Ry., Moncton, N.B.; Apr. 1909 to July 1913, member of Canadian Government Railways Managing Board, and General Traffic Manager, Canadian Government Rys., Moncton, N.B.; July 1913 to May 1919, General Western Agent, Canadian Government Rys., Toronto; May 1919, to the date of his death, Special Representative, Canadian National Rys., Toronto. He was buried at Hamilton, Ont., the Canadian National Rys. providing a special car for the journey from Preston there.

**Arthur A. Tisdale**, who has been appointed Assistant to General Manager, Western Lines, Canadian National Rys., and G.T.P. Ry., Winnipeg, was born at Mount Vernon, Ont., Mar. 8, 1874, and entered railway service Sept. 18, 1889, since when he has been, to July, 1892, in local freight office, G.T.R., Hamilton, Ont.; July 1892 to May 1899, secretary to Chief Engineer, Hamilton and Montreal; May 1899 to Oct. 1907, successively, secretary, chief clerk, and Assistant to Fourth Vice President in charge of Transportation and Maintenance of Way, G.T.R., Montreal; Oct. 1907 to Oct. 1909, Assistant to Vice President and General Manager, Grand Trunk Pacific Ry., Montreal; Oct. 1909 to June 1916, Superintendent, Lake Superior Division, same road, Fort William, Ont.; June 1915 to Jan. 1, 1916, Superintendent, Regina Division, same road, Regina, Sask.; Jan. 1 1916, to Aug. 1920, Assistant to Vice President and General Manager, same road, Winnipeg.

Joseph Alfred Trudel, whose appointment as Assistant Superintendent, Levis Division, Quebec District, Canadian National Rys., Levis, Que., was announced in our last issue, was born at Nicolet, Que., Dec. 15, 1882, and entered railway service Mar. 15, 1907, since when he has been, to Mar. 31, 1907, porter, Canadian Northern Ry., St. Henri Jct., Que.; Apr. 1 to Apr. 26, 1907, freight clerk, same road, Chaudiere Jct., Que.; Apr. 26, 1907, to Sept. 1, 1911, freight clerk, same road, Riviere-du-Loup, Que.; Mar. 28, 1912, to Sept. 1, 1913, train agent, same road; Sept. 1 to Oct. 16, 1913, freight clerk, same road, Riviere-du-Loup, Que.; Oct. 15, to Nov. 10, 1913, freight agent, same road, Riviere-du-Loup, Que.; Nov. 10, 1913, to Dec. 1, 1915, freight agent, same road, Quebec, Que.; Dec. 1, 1915, to Feb. 1, 1918, Terminal Agent, same road, Quebec, Que.; Feb. 1, 1918, to Sept. 13, 1920, Assistant Superintendent of Terminals, Canadian National Rys., Quebec, Que.

Mrs. C. E. E. Ussher, wife of the Passenger Traffic Manager, C.P.R., and the Misses Ussher returned to Montreal early in October, after spending some time in the Rocky Mountains and at the Pacific Coast.

R. C. Vaughan, Assistant to President, Canadian National Rys., and Canadian Government Merchant Marine, has bought the house, 57 Douglas Drive, Toronto, which was occupied until recently by Sir Clifford Sifton as tenant, and will remove there with his family.

N. B. Walton, whose appointment as Assistant General Superintendent, Grand Trunk Pacific Ry., Prince Rupert, B.C., was announced in our last issue, was born at Palmerston, Ont., July 27, 1884, and entered railway service Aug. 20, 1900, since when he has been, to Jan. 1907, in various positions as clerk, operator and secretary to Vice President, G. T.R.; Jan. to Apr. 1907, Trainmaster, same road; Apr. to Dec. 1907, in Great Northern Ry. service at St. Paul, Minn.; Jan. to Oct. 1908, Claims Agent, G.T.D.; Oct. 1908 to Aug. 1910, secretary to General Superintendent, Grand Trunk Pacific Ry.; Aug. 1910 to July 1911, Trainmaster and Assistant to General Superintendent, same road, Winnipeg; July 1911 to Aug. 31, 1920, Superintendent, Edmonton Division, same road, Edmonton, Alta.

F. L. Wanklyn, General Executive Assistant, C.P.R., closed his summer house at Senneville, Que., early in October, and returned to Montreal, with Mrs. Wanklyn and family, for the winter.

Fred Yates, who has been appointed City Passenger Agent, Canadian National-Grand Trunk Pacific Rys., Seattle, Wash., was born in England, July 4, 1891, and entered railway service in Oct. 1907, since when he has been, to May 1911, clerk and stenographer, C.P.R., Winnipeg; Aug. 9, 1911, to Oct. 1912, clerk and stenographer, Grand Trunk Pacific Ry., Winnipeg; Oct. 1912 to Dec. 1914, secretary to General Passenger Agent, same road, Winnipeg; Dec. 1914 to Aug. 1916, rate clerk, Passenger Department, same road, Winnipeg; Aug. 1916 to Feb. 1920, chief rate clerk, same road, Winnipeg; Feb. 16 to Aug. 15, 1920, chief clerk, Canadian National Rys., Seattle, Wash.

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**Timiskaming & Northern Ontario Ry. Restaurant Privileges.** — Tenders have been accepted for retaurant privileges as follows:—Englehart station, D. W. Porter, 602 Shaw St., Toronto; Temagami station, F. W. Wilson, Timagami, Ont.

# Prepayment of Certain Freight Charges from the U.S. to Canada Suspended.

A Washington, D.C., press dispatch, Oct. 5, stated that the Interstate Commerce Commission had suspended until Feb. 2, 1921, proposed rules and regulations in the south, requiring the prepayment of freight charges on cotton and cotton linters, from points in the United States to points in Canada. The order referred to is as follows:—

"It appearing that there has been filed with the Commission by F. A. Leland, agent, a tariff containing schedules stating new individual and joint regulations and practices affecting rates and charges, to become effective on Oct. 5, designated as follows: 'F. A. Leland, Agent; supplement 11 to I.C.C. 1334,' it is ordered that the Commission, upon complaint, without formal pleading, enter upon a hearing concerning the lawfulness of the regulations and practices stated in the said schedules contained in item 10, on page 6 of said tariff. It further appearing that said schedules make certain increases in rates for the interstate transportation of cotton and cotton linters, and the rights and interests of the public appearing to be injuriously affected thereby, and it being the opinion of the Commission that the effective date of the said schedules contained in said tariff should be postponed pending said hearing and decision thereon, it is further ordered that the operation of the said schedules contained in said tariff be suspended, and that the use of the regulations and practices therein stated be deferred upon interstate traffic until Feb. 2, 1921, unless otherwise ordered by the Commission, and no change shall be made in such regulations and practices during the said period of suspension unless authorized by special permission of the Commission. It is further ordered that the rates and charges thereby sought to be changed shall not be increased and the regulations and practices thereby sought to be altered shall not be changed by any subsequent tariff or schedule, until this investigation and suspension proceeding has been disposed of or until the period of suspension and any extension thereof has expired, unless authorized by special permission of the Commission. And it is further ordered that a copy of this order be filed with said schedules in the Commission's office, and that copies hereof be forthwith served upon the carriers parties to said schedules and upon F. A. Leland, and that said carriers parties to said schedules be made respondents to this proceeding, and that they be notified of the time and place of the hearing above ordered."

In this connection we give the following addition to the Commission's Conference Ruling 207, adopted May 18, as follows:—"The existing difference in exchange value between the monies of the United States and the Dominion of Canada, while continuing to bear the same denomination, has been productive of confusion and uncertainty as to the construction to be placed upon tariff schedules, division sheets, and accounts in respect of traffic crossing the international boundary. We are of opinion that where transportation of persons or property, or transmission of intelligence by wire or wireless, takes places partly within the U.S. and partly within Canada, the tariff charges or divisions thereof accruing for the part which takes place within the U. S. are paying only in lawful money of the U.S., irrespective of the money in which tariff charges or divisions thereof accruing for the part which takes place in Canada may be payable under the laws there in force. Adjustments should be made in accordance herewith, by carriers subject to the act, in settling their accounts with connecting carriers. Appropriate rules or regulations to give effect to this ruling may also be included by such carriers in their tariff schedules, if they so desire. The practice, which has grown up since development of said difference in exchange value, of requiring prepayment of charges in cases where not customarily required theretofore, tends to embarrass shippers and impede foreign commerce. Carriers subject to the act will be expected to refrain from such unusual requirements in cases where they are not justified by other considerations."

In transmitting the foregoing information on Oct. 12, the Interstate Commerce Commission's Secretary wrote Canadian Railway and Marine World as follows:—"The general question of prepayment on Canadian traffic is receiving the Commission's attention, and it is not improbable that some announcement will be made on the subject at a not distant date."

## A Railway Official's Novel.

J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, author of "Drums Afar" and "Hearts and Faces," has written another novel, "The Conquering Hero," which is published by S. B. Gundy, Toronto. The opening scene is rather curious and quite original. Into the midst of a fishing party of city men steps a glorious vision, who introduces herself as Princess Stephanie Sobieska. It transpires that she is a "movie" star and has her business manager and press agent in attendance. The two parties join forces and young Donald MacDonald, farmer, guide, and sergeant in the late war, becomes her prime favorite. After they part Donald is horrified to find his D.C.M. medal is missing. Who was this woman? Princess? Actress? Thief? Back on his British Columbia farm, Donald hears from her again, and, through her, regains his lost medal, but, also through her, for a time loses his little Scotch sweetheart who had promised to make the lonely farm homelike for him. But the Princess turns out to be a good friend and brings them together again.

There is much excellent description of the beautiful Rocky Mountain scenery, the horrors of a forest fire, ranching in Canada and the difficulties of the denizens of the old world to adjust themselves to the new world conditions, all of which is depicted with the steady pen of one who knows his subject and is not drawing solely upon his imagination.

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**Freight Car Robberies.**—Five C.P.R. employes at Montreal were committed for trial, Oct. 1, on charges of stealing some $45,000 worth of cigarettes, liquor, cloth and a large variety of other goods from freight cars. John Doyle, one of the accused, pleaded guilty and gave evidence as to the thefts and the manner of disposing of the stolen goods. Charges of receiving stolen goods are pending against other men.

# Standard Specification for Steel Railway Bridges.

The Canadian Engineering Standards Association, which has its office in Ottawa, has issued its Standard Specification for Steel Railway Bridges, in booklet form, 6 x 9 in., 79 pages, including index. The preface is as follows:—

"This specification is issued with a view of giving to the bridge designer, detailer, and manufacturer, guidance along definite lines, thus leading to uniformity in the provisions to be made for strength and utility. The various clauses have been framed without any intention of limiting the engineer's choice as to type of bridge, and it is believed that no unnecessary restriction has been placed on the designer as regards details of construction.

"The specification is based on that for steel railway bridges originally issued by the Canadian Society of Civil Engineers in 1912, the work on which was naturally continued by the Engineering Institute of Canada when it succeeded the Canadian Society of Civil Engineers. The present specification is thus largely due to the activity of the Committee of the Engineering Institute of Canada's committee working under the chairmanship of P. B. Motley (Engineer of Bridges, C. P.R.). A revised draft specification was prepared and approved by that committee on Oct. 17, 1918. It was submitted to the Engineering Institute of Canada's council, referred by the council to the annual general meeting for 1919, and early in 1919 was transmitted to the membership of the Institute for comment and criticism.

"On the formation of the Canadian Engineering Standards Association in 1919, the council of the Institute felt that the completion and final approval of the specification would be facilitated if it were placed in the hands of the Association; and the council approved of an arrangement which handed the E. I. C. Specification over to the Association for action. The main committee of the Association at its meeting on June 4, 1919, accordingly appointed a sectional committee on steel bridges and construction, under the chairmanship of G. H. Duggan, and a sub-committee on steel railway bridges under the chairmanship of P. B. Motley. As the membership of the C.E.S.A. subcommittee is identical with that of the E.I.C. committee which prepared the draft specification, the E.I.C. committee practically became the sub-committee of the Canadian Engineering Standards Association.

"In accordance with the regular system of the Association, the sub-committee's specification was submitted to the sectional committee for consideration, and immediate action was taken. Copies of the specification in its draft form were forwarded to representatives of the railway administrations, bridge manufacturers, and others interested, with a request for criticism and suggestions, and with the view of obtaining as wide acceptance as possible. As a result a large number of suggested amendments were sent in, not only from members of the original E.I.C. committee, but also from the various bridge companies and steel makers, who were consulted as to any possible difficulties arising from the contractors' and manufacturers' point of view. These communications were considered at a meeting of the sectional committee on Jan. 27, 1920, a number of amendments were decided upon, and the specification as thus modified was submitted to the main committee on April 12, 1920.

"In view of the obvious desirability of agreement between a Canadian specification of this kind and similar documents prepared by authoritative bodies in the United States, the sub-committee and the sectional committee have carefully considered the bridge specifications of the American Railroad Engineering Association and the specifications for bridge materials issued by the American Society for Testing Materials. It is believed that the specification in its present form, while not in absolute agreement with the U.S. specifications on all points, will be found to be in substantial agreement therewith, the principal points of difference being such as are found desirable in order to comply with Canadian conditions.

"The specification was adopted by the sectional committee on steel bridges on Jan. 27, 1920, and was approved by the main committee on April 12, 1920."

## Starting Engines on Locomotives.

Locomotives with "booster" or starting engines on the trailing axles to give increased power in starting are being tried on the New York Central Rd. as a means of increasing the efficiency in handling heavy passenger and freight trains. A 2 cylinder inclosed horizontal engine, mounted at the rear of the frame of the trailing truck, drives a pinion, which, through an idler, drives a gear on the trailing axle. The locomotive man can put this "booster" in operation only when the reversing lever is in full position and the throttle is open. When he notches up the lever the booster is cut out automatically and is disengaged so that it cannot become a load on the locomotive when running at ordinary speeds. The additional weight is about 3,500 lb. but is said to be equivalent to increasing the adhesion weight of the engine by about 25 tons. It is intended to give an increase of 25 to 30% in drawbar pull for different types of locomotives, thus ensuring a steady and even start, which reduces damage to the locomotive and the cars.

**Engineering Institute of Canada.** — A branch of this Institute was organized in Moncton, N.B., Oct. 11, when the following officers, etc., were elected:—Chairman, W. A. Duff, Assistant Chief Engineer, C.N.R.; Vice Chairman, J. D. McBeath; Secretary-Treasurer, M. J. Murphy; Committee: R. McManus, R. G. Gage, J. E. Dington, F. B. Fripp, S. B. Wass, H. G. Grudge.

**Railway Lands Patented.**—Letters patent were issued during September respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

| | Acres. |
|---|---|
| Canadian Northern Alberta Ry. | 152.58 |
| Canadian Northern Pacific Ry. | 75.83 |
| Canadian Northern Western Ry. | 8.19 |
| Canadian Pacific Ry. | 212.07 |
| Total . . | 448.67 |

**The West Kootenay Power & Light** Co., of which C. R. Hosmer, one of the C.P.R. directors, is President, is reported to have completed the extension of its power line from Greenwood to Copper Mountain, B.C., 108 miles, in connection with the mining developments at Copper Mountain, to provide railway accommodition for which the Kettle Valley Ry. has built a branch line from Princeton.

## Steel Rails Manufacture.

Montreal press dispatch Oct. 11:—The outlook for the continued operation of the Dominion Iron & Steel Co.'s rail mill during the winter is not encouraging. Since Mar. 31 last, the only contract obtainable for rails has been one from the Canadian National Rys., for 7,500 tons. This contract was placed at a low figure. The actual production of the rails has resulted in a cost substantially in excess of the price received. Enquiry at the company's office brings the information that competition in the rail market is becoming increasingly keen, and a reduction, rather than an increase, in price is apprehended, and in that connection it is pointed out that if for any reason the cost of steel production be increased, the operation of the rail mill will become increasingly difficult. The rail mill's capacity for production is much greater than that of any other of the finishing mills operated by the company. With favorable conditions and a possible market, a monthly output of from 15,000 to 20,000 tons would be available.

**Forgery of C.P.R. Official's Name.**—A. J. Robinson was committed for trial at Montreal, Oct. 20, on two charges of forgery and one of fraud, in connection with cheques for $50, $55 and $25, each of which purported to be signed by "Grant Hall, V.P., C.P.R." Mr. Hall stated in court that he did not know the person handling the cheques, that at the time he was supposed to have signed the cheques he was not in Montreal, that the signature purporting to be his did not in any way resemble it, and that he never signed cheques with the letters as shown after his name.

**Canadian Superheater Corporation Ltd.** has been incorporated under the Dominion Companies Act, with $200,000 authorized capital and office at Montreal, to manufacture and deal in all kinds of apparatus and merchandise which may be used in the transportation of persons and property in any manner whatsoever, including railway passenger and freight cars, street cars, car trucks, etc. The incorporators are: N. J. Holden, A. Allan, V. G. R. Vickers, W. Palmer, and G. C. Palmer, all associated with The Holden Co. Ltd., railway supplies, Montreal.

**Edmonton, Dunvegan & British Columbia Ry. Terminals, Etc.**—The Edmonton, Dunvegan & British Columbia Ry., and the Central Canada Ry., which are being operated by the C.P.R., under a 5 years arrangement with the Alberta Government, have heretofore used the Grand Trunk Pacific Ry. terminals at Edmonton, but it is probable that an arrangement will be made for the joint use of the C.P.R. terminals at Edmonton and Strathcona, and that this will include the handling of shop repairs by the C.P.R.

**The American Railway Engineering** Association's executive committee met in Montreal, Oct. 11, H. R. Safford, formerly Chief Engineer G.T.R., and now Assistant to President, Chicago, Burlington & Quincy Rd., presiding. After the transaction of business the members were the guests at a dinner given by the Engineering Institute of Canada, and on Oct. 12 were taken by special train to the Quebec Bridge, the day being spent in an inspection of the structure.

**Canadian National Railways Social** Club.—Employes of the C.N.R. in Vancouver, B.C., have formed a social club, and a meeting for the adoption of the constitution, etc., was held Oct. 7.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Algoma Eastern Ry.—G. A. MONTGOMERY, heretofore Vice President, has been appointed President, vice R. Home Smith, resigned. Office, Sault Ste. Marie, Ont.

Canadian Car Demurrage Bureau.—F. CAREY has been appointed Inspector at Montreal, vice J. Jones, resigned.

E. J. DOWNEY, heretofore Inspector, Toronto, has been appointed Chief Inspector, vice A. J. Letch, promoted. Office, Toronto.

A. J. LETCH, heretofore Chief Inspector, Toronto, has been appointed Assistant Manager, vice M. J. Riley, deceased. Office, Montreal.

C. H. THURBER, heretofore at Peterborough, Ont., has been appointed Inspector, Toronto, vice E. J. Downey, promoted.

Canadian Government Merchant Marine Ltd.—J. P. DOHERTY, heretofore Port Agent, St. John, N.B., has been appointed Export Freight Agent. Office, 230 St. James St., Montreal.

C. H. HICKIE has been appointed Assistant Treasurer, in charge of Canadian Government Merchant Marine Ltd. and Grand Trunk Pacific Ry. general accounts. Office, Toronto.

J. W. N. JOHNSTONE, formerly secretary to President, Reid Newfoundland Co., St. John's, Nfld., has been appointed General Agent for Newfoundland, Canadian National Rys. and Canadian Government Merchant Marine Ltd. Office, St. John's, Nfld.

W. H. THOMPSON, heretofore Assistant Export and Import Freight Agent, has been appointed Import Freight Agent. Office, 230 St. James St., Montreal.

Canadian National Rys.—T. H. BEST has been appointed Assistant to Treasurer, Canadian Northern Rys. System-Grand Trunk Pacific Rys., in charge of general accounts, etc. Office, Toronto.

H. C. BOURLIER, Assistant General Passenger Agent, Eastern Lines, Toronto, has been given supervision of such details of the Passenger Department as are not under the jurisdiction of the Assistant Passenger Traffic Manager, and which were formerly under the supervision of the General Passenger Agent, Eastern Lines.

J. R. BLACK, heretofore Assistant Solicitor, Grand Trunk Pacific Ry., Winnipeg, has been attached to the legal staff of R. H. M. Temple, General Solicitor and General Claims Agent, Western Lines, C.N.R., and G.T.P.R., Winnipeg.

C. B. BROWN, heretofore Chief Engineer, Canadian Government Rys., Moncton, N.B., has been appointed Engineering Assistant to Vice President, Operation and Maintenance, Canadian National Rys. Office, Toronto.

F. J. BULLER, heretofore Paymaster, Eastern Lines, Canadian Northern Ry., has been appointed Assistant Treasurer, Canadian Northern Ry. System-Grand Trunk Pacific Rys., in charge of local treasurers and paymasters. Office, Toronto.

D. R. CAMPBELL, heretofore General Superintendent, Pacific Division, Vancouver, B.C., has been placed in charge of Construction Department, Western Lines, Winnipeg, and his former position has been abolished.

D. CROMBIE, heretofore General Superintendent, Ontario District, Toronto, has been appointed Transportation Assistant to Vice President, Operation and Maintenance. He will assist in connection with transportation matters, and perform such other duties as may be assigned to him from time to time. Office, Toronto.

C. D. COWIE, Assistant to Vice President, Finance and Accounts, C.N.R., Toronto, has had his jurisdiction extended to include the Grand Trunk Pacific Ry.

M. C. DUNN, City Freight Agent, C. N.R., Kingston, Ont., will also act in the same capacity there for the G.T.R.

R. L. FAIRBAIRN, heretofore General Passenger Agent, Eastern Lines, has been appointed Assistant Passenger Traffic Manager, Eastern Lines, with supervision of details pertaining to passenger

G. A. Montgomery,
President, Algoma Eastern Railway.

train schedules, distribution of timetable folders, assignment of train equipment, mail services, and such other duties as may be assigned to him. Office, Toronto.

P. J. FARLEY, General Paymaster, C.N.R., Winnipeg, has had his jurisdiction extended to cover C.N.R. lines west of Armstrong, Ont., and Grand Trunk Pacific Ry. Office, Winnipeg.

DR. W. A. FERGUSON, Chief Medical Officer, Moncton, N.B., has had his jurisdiction extended to cover all C.N.R. lines to Armstrong, Ont., inclusive.

H. G. FOREMAN, heretofore Assistant Treasurer, has been appointed Treasurer, Canadian Northern Railway System, and Grand Trunk Pacific Ry. Office, Toronto.

T. GINNELLY, heretofore in Freight Claims Department, C.N.R., Winnipeg, has been appointed Assistant Freight Claims Agent, Western Lines, C.N.R., Grand Trunk Pacific Ry., and G.T.P. Coast Steamship Co., with jurisdiction Lucerne, B.C., and west. Office, Vancouver, B.C.

A. H. GOW has been appointed City Freight Agent, C.N.R. and G.T.R., Ottawa, Ont., and not General Freight Agent, as mentioned in a previous issue.

W. H. GRANT, General Tie Agent, C. N.R., has had his jurisdiction extended over the Grand Trunk Pacific Ry. Office, Toronto.

D. R. GUNN, heretofore Assistant Registrar, Canadian Northern Ry. System, has been appointed Registrar and Transfer Officer, Canadian National Rys. System-Grand Trunk Pacific Ry. Office, Toronto.

C. S. GZOWSKI, Jr., heretofore Special Engineer to Vice President, Operation, Maintenance and Construction, has been appointed Assistant to Vice President, Construction. Office, Toronto.

G. M. HAIR, heretofore Assistant Solicitor, Grand Trunk Pacific Ry., Winnipeg, has been attached to the legal staff of R. H. M. Temple, General Solicitor and General Claims Agent, Western Lines, C.N.R., and G.T.P.R., at Winnipeg.

H. H. HANSARD, heretofore Solicitor, Grand Trunk Pacific Ry., Winnipeg, has been temporarily attached to the Toronto office, as Assistant to General Counsel.

F. G. HAYDEN has been appointed Assistant Registrar, Canadian Northern Ry. System-Grand Trunk Pacific Ry. Office, Toronto.

H. T. HAZEN, Engineer of Maintenance of Way, Eastern Lines, Canadian Northern Railway System, Toronto, will temporarily also perform the duties of Chief Engineer, Eastern Lines, Canadian Northern Railway System, vice A. F. Stewart, appointed Chief Engineer, Canadian Government Railways, etc., at Moncton, N.B.

The jurisdiction of the chief engineer at Toronto embraces all the lines east of Port Arthur, operated formerly by the Canadian Northern Ry., with the exception of the Halifax & South Western Ry., which is under the jurisdiction of the Chief Engineer at Moncton, N.B.

J. W. N. JOHNSTONE, formerly secretary to President, Reid Newfoundland Co., St. John's, Nfld., has been appointed General Agent for Dominion of Newfoundland, Canadian National Rys. and Canadian Government Merchant Marine Ltd. Office, St. John's, Nfld.

C. C. LABRIE, heretofore Purchasing Agent, C.N.R., Vancouver, B.C., has been appointed Purchasing Agent, Western Lines, C.N.R., and Grand Trunk Pacific Ry., there.

R. C. W. LETT, heretofore Tourist and Colonization Agent, Grand Trunk Pacific Ry., Winnipeg, has been appointed General Agent, Colonization, Industrial and Resources Department, Canadian National-Grand Trunk Pacific Rys. Territory, Alberta and British Columbia. Office, Edmonton, Alta.

J. McCAWLEY, heretofore in Grand Trunk Pacific Ry., Claims Department, Winnipeg, has been attached to the Claims Department staff of R. H. M. Temple, Cenral Solicitor and General Claims Agent, Western Lines, C.N.R. and G.T.P.R., Winnipeg.

E. McDONALD, heretofore General Baggage Agent, Grand Trunk Pacific Ry., Winnipeg, has been appointed Assistant General Baggage Agent, Western Lines, C.N.R., G.T.P.R., and G.T.P. Coast Steamship Co. Territory Lucerne, B.C., and

west. Office, Vancouver, B.C.

S. E. McKIE, heretofore chief clerk to Fuel Agent, Moncton, N.B., has been transferred to the General Fuel Agent's office at Toronto, temporarily, as chief clerk.

T. J. MACABE, heretofore Registrar and Transfer Officer, Canadian Northern Ry. System, has been appointed Assistant Treasurer, Canadian Northern Ry. System-Grand Trunk Pacific Ry., with supervision of Registrar and Transfer Department. Office, Toronto.

A. H. MAHON, heretofore District Master Mechanic, Grand Trunk Pacific Ry., Edson, Alta., has been appointed Assistant Master Mechanic, C.N.R.-G.T.P.R., with jurisdiction over G.T.P.R., from Edmonton, Alta., not including Edmonton, to McBride, B.C., and from Edson to Lovett and Mountain Park, Alta. Office, Edson, Alta.

R. R. NICHOL, Assistant Tax Commissioner, C.N.R., Winnipeg, has had his jurisdiction extended over the Grand Trunk Pacific Ry. Taxation of C.N.R., townsite lands are dealt with by him and that relating to railway right of way and station grounds, etc., is handled from Toronto. His duties also include all matters of assessment and taxation of Grand Trunk Pacific Development Co.'s townsite lands.

J. H. PARKINSON, heretofore in Grand Trunk Pacific Ry. Claims Department, Winnipeg, has been attached to the Claims Department staff of R. H. M. Temple, General Solicitor and General Claims Agent, Western Lines, C.N.R. and G.T.P.R., Winnipeg.

C. J. QUANTIC, Master Mechanic, C. N.R., Vancouver, B.C., has had his jurisdiction extended to include all C.N.R. and Grand Trunk Pacific Ry. lines west of Edmonton, Alta., not including Edmonton. Office, Vancouver.

G. M. RUSSELL, heretofore Assistant Solicitor, Grand Trunk Pacific Ry., Winnipeg, has been attached to the legal staff of R. H. M. Temple, General Solicitor and General Claims Agent, Western Lines, C.N.R. and G.T.P.R., Winnipeg.

G. E. SMART, heretofore Master Car Builder, Toronto, has been appointed Mechanical Assistant, Car Department, to Vice President, Operation and Maintenance. Office, Toronto.

H. M. SPENCE has been appointed Assistant General Baggage Agent, Western Lines, C.N.R., and Grand Trunk Pacific Ry. Territory east of Lucerne, B. C., and west of Port Arthur and Armstrong, Ont., and Duluth, Minn. Office, Winnipeg.

A. F. STEWART, heretofore Chief Engineer at Toronto, has been appointed Chief Engineer at Moncton, N.B., vice C. B. Brown, appointed Engineering Assistant to Vice President, Operation and Maintenance, Toronto. His jurisdiction includes the Prince Edward Island Ry., Intercolonial Ry., Halifax & South Western Ry., National Transcontinentl Ry. east of Armstrong, Ont., and the various local lines in Nova Scotia and New Brunswick, which have been acquired by the Dominion Government, and are now operated as branches of the Intercolonial Ry.

W. J. STURGESS, heretofore Assistant Purchasing Agent, Grand Trunk Pacific Ry., is acting for the present as Assistant Purchasing Agent, Western Lines, C.N.R. and G.T.P.R., Winnipeg.

R. H. M. TEMPLE, General Solicitor and General Claims Agent, Western Lines, C.N.R., has had his jurisdiction extended over the Grand Trunk Pacific Ry. Office, Winnipeg.

A. A. TISDALE, heretofore Assistant to Vice President and General Manager, has been appointed Assistant to General Manager, Western Lines, C.N.R. and G.T.P.R. Office, Winnipeg.

F. W. TISDALE, heretofore Purchasing Agent, C.N.R., Winnipeg, has been appointed Purchasing Agent, Western Lines, C.N.R. and Grand Trunk Pacific Ry., there.

JOHN WARDROP, heretofore General Agent, Colonization, Industrial and Resources Department, C.N.R., Winnipeg, has had his jurisdiction extended over the Grand Trunk Pacific Ry., his territory now comprising all lines from Alberta boundary line east to Armstrong and Port Arthur, Ont., and Duluth, Minn. Office, Winnipeg.

A. WATTS, heretofore District Master Mechanic, Grand Trunk Pacific Ry., Smithers, B.C., has been appointed Assistant Master Mechanic, C.N.R. and G. T.P.R., with jurisdiction over G.T.P.R., McBride to Prince Rupert, B.C., including McBride. Office, Smithers, B.C.

**R. L. Fairbairn,**
Assistant Passenger Traffic Manager, Eastern Lines, Canadian National Railways.

F. YATES, heretofore chief clerk, C. N.R., Seattle, Wash., has been appointed City Passenger Agent, Canadian National-Grand Trunk Pacific Rys., there, and not City Ticket Agent, as stated in our last issue.

**Grand Trunk Pacific Ry.** — C. H. HICKIE has been appointed Assistant Treasurer, in charge of Grand Trunk Pacific Ry. and Canadian Government Merchant Marine Ltd. general accounts. Office, Toronto.

See also Canadian National Railways.

**Grand Trunk Pacific Coast Steamship Co.**—J. McARTHUR is reported to have been appointed Dock Agent, Victoria, B.C.

See also Canadian National Railways.

**Canadian Pacific Ry.** — A. E. BENNETT, heretofore Night Locomotive Foreman, Revelstoke, B.C., has been appointed Locomotive Foreman, North Bend, B.C., vice S. Hayward, retired.

G. L. BOER, heretofore acting Agent, Department of Colonization and Development, London, Eng., has resumed his former position as Agent for that Department there.

D. R. KENNEDY, heretofore Travelling Passenger Agent, Montreal, is reported to have been appointed Assistant District Passenger Agent, with supervision of rail traffic ex Atlantic steamships, with office at Quebec, Que., during the St. Lawrence navigation season, and at St. John, N.B., during the winter.

A. MAGUIRE has been appointed Assistant Fuel Agent, Western Lines. Office, Calgary, Alta.

H. J. MAIN has been appointed Car Service Agent, Quebec District. Office, Montreal.

H. MOLE has been appointed Night Locomotive Foreman, Revelstoke, B.C., vice A. E. Bennett, transferred.

R. A. SEWELL, heretofore Superintendent of Car Service, Eastern Lines, Montreal, has been appointed Car Service Agent, New Brunswick District, vice C. L. Leighty, resigned. Office, St. John, N.B.

J. SPRINGETT has been appointed Agent for Holland. Office, 42 Coolsingel, Rotterdam.

J. A. TOBIN has been appointed Assistant Superintendent, Laurentian Division, Quebec District, vice F. A. Winterson, transferred. Office, Montreal.

HUGH B. WALKEM, heretofore Assistant Engineer, Vancouver, B.C., has retired from the company's service.

**Chicago & North Western Ry.**—G. S. DONALDSON, heretofore Travelling Freight Agent, G.T.R., Toronto, has been appointed Travelling Agent, Canadian Territory, C. & N. W. R. Headquarters, Toronto.

**Duluth, South Shore & Atlantic Ry., Mineral Range Rd.**—W. L. MARTIN, Vice President in charge of Traffic; W. R. CALLAWAY, Passenger Traffic Manager, and H. M. LEWIS, General Passenger Agent, have resigned, as reported in our last issue. The similar positions which they hold on the Minneapolis, St. Paul & Sault Ste. Marie Ry. are not affected.

S. R. LEWIS, heretofore General Freight Agent, has been appointed Traffic Manager. Office, Duluth, Minn.

J. MANEY, heretofore Assistant General Passenger Agent, has been appointed General Passenger Agent, vice H. M. Lewis, resigned, and will also act as General Baggage Agent, vice O. A. Roedell, resigned. Office, Duluth, Minn.

**Grand Trunk Ry.**—F. DEARING has been appointed Travelling Car Service Agent, Ontario Lines. Office, Toronto.

M. C. DUNN, City Freight Agent, Canadian National Rys., Kingston, Ont., will also act in the same capacity there for the G.T.R.

J. W. O'NEIL has been appointed Locomotive Foreman, York, Ont., vice W. H. Archer, assigned to other duties.

W. R. YOUNG has been appointed Superintendent of Telegraph and Signals, Western Lines, vice N. E. Baker, resigned. Office, Chicago, Ill.

**Grand Trunk Pacific Ry.**—H. B. DUFIEF, heretofore Assistant to Solicitor, Winnipeg, has left the service.

See also Canadian National Railways.

**Inverness Ry. & Coal Co.**—THOS. J. BROWN, General Manager, is reported to have resigned.

**Michigan Central Rd.**—C. W. ADAMS, heretofore General Foreman, Locomotive Department, St. Thomas, Ont., has been appointed Superintendent of Shops, Jack-

son, Mich., vice W. C. Bell, transferred.

M. R. BENSON, heretofore Assistant General Foreman, has been appointed General Foreman, Locomotive Department, St. Thomas, Ont., vice C. W. Adams, promoted.

## Travelling Engineers Association's Convention.

Geo. A. Kell, Travelling Engineer, G. T.R., Turcot, Que., who presided at the Travelling Engineers Association's Convention in Chicago recently, said in his opening address, in part, as follows:—"One of the more important items in which the travelling engineer is directly concerned, and which, if properly handled, becomes a most important factor in accomplishing that which is the aim and object of every operating official on all well conducted railways, is the matter of increased efficiency and reduced expenses of operation. This, owing to the high cost of material and the continued demand for higher wages, is of greater interest and importance at the present time than ever before. During the past few years, in particular during the great war, special efforts were made, I believe, by each and every man employed in the operation of railways of this country to conserve coal in particular and to successfully operate the railways at the lowest possible expense in general. In this the travelling engineer or road foreman took no small part. Many of our members have been called upon to take up important positions in connection with this matter and have proved beyond doubt that they were equal to the occasion and worthy of that calling.

"It is just as important to save coal and supplies today as it ever has been, and to maintain the record and reputation that we as travelling engineers have attained by zealously guarding the power, fuel and supplies of all kinds under our charge and seeing that the best possible use is secured from them. The cost of coal, oil, and supplies of all kinds is greater today than it has ever been before. Therefore there should be no relaxation on our part in any way, but every effort should be put forth to get more skillful operation of the locomotives on the road with increased efficiency in handling trains at the lowest possible cost of operation.

"The drastic labor conditions that prevail throughout the country are cause for great anxiety and concern. There is social, racial, and industrial unrest everywhere, brought about to a great extent by the spirit and practice of profiteering and the high cost of living. Strikes and tieups have taken place; in some cases due to over zealous, self appointed would-be labor leaders more than to anything else. The fact that strikes have occurred, illegally in some cases, goes to show that many men have been led through the condition of unrest and the influence of the would-be leaders to take part in these strikes. The travelling engineers, whose conservativeness and loyalty have never been questioned and who are scattered throughout the different parts of the country and who come in contact with a great many of the railway employes, can do a great deal toward influencing the rank and file of the men toward taking the right view of the critical conditions as they exist. If ever there was a time in the world's history when calm and cool judgment should be exercised, now is the time."

## Venereal Diseases Notices on Railways.

The Board of Railway Commissioners passed general order 315 Sept. 29, as follows:—Re application of Dominion Department of Public Health, under the provisions of the Railway Act, 1919, for permission to place signs dealing with the prevention and spread of venereal disease, in passenger cars and railway station lavatories. Upon its being represented to the Board that the signs in question are issued under the authority of the Dominion Department of Health, and reading what is filed in support of the application, the Board orders that permission be granted the applicant to place signs dealing with the prevention and spread of venereal disease in all passenger cars and station lavatories of railway companies in Canada subject to the Board's jurisdiction, provided that a notation be carried on the bottom of each copy of the sign set up or placed under the provisions of this order to the effect that the same is issued under the authority of the Dominion Department of Health.

## The C.P.R.'s Entrance into Northern Alberta.

The following editorial appeared in the Edmonton, Alta., Journal recently:—"The Journal has laid great emphasis from the first, on the immense impulse to the development of Northern Alberta which has been given by the entrance of the C.P.R. there. All the news which comes from that part of the province indicates that the greatest confidence has been inspired by the event and that everyone is busy and optimistic and that the coming year will see a most wonderful transformation there. The Edmonton Bulletin had an article calling attention to the interruption of traffic which took place during the previous week as a result of the overflow of the waters of Lesser Slave Lake. This was a most unusual occurrence and came at a most unfortunate time. Six miles of track was affected. The editor went on to say:—

"'The best of will, without capital equipment and organization, could not have repaired the break for many days. Traffic would have been stopped and a great country and population would have been tied up indefinitely. With the means available and the means to use them, the break which occurred on Tuesday was repaired on Sunday. The quick action taken and satisfactory results achieved in this instance are an assurance to the people of Peace River that rail traffic will be maintained under all possible circumstances and conditions. This assurance is the result of the recent arrangement between the Alberta Government and the C.P.R. whereby that company becomes responsible for the efficient operation of the railway. If there ever was any question as to the satisfactory operation of the railway there is none now. This is the basis of all investment of time, labor or money in the Peace River country.'

The Journal is aware that, in quoting an extract of this length from the editorial page of its local contemporary and giving its complete approval to the views therein expressed, it makes this a red letter day in the history of Edmonton. But there it is. It desires to add, however, a thought of its own, as the Sunday school superintendent is wont to say, that the C.P.R. could not have accomplished all this if it were not a well organized business concern, with very large resources.

"In the past, in the columns of The Bulletin and in the columns of most other Canadian newspapers, the possession of these resources has been regarded as a public evil. Railway prosperity has been treated as if it constituted a grievance. Whenever anyone has the courage to say that it was not for the general good to adopt measures which would unduly weaken the C.P.R. and other railways, he has been invariably described as the paid agent of the corporation controlling these. Much language of this kind has been heard throughout the country in recent weeks, in connection with the discussion of the application for an increase in railway rates. We do not think, however, that for some time at least the people of Northern Alberta will begrudge the C.P.R. its prosperity or be anxious to have this seriously impaired. Neither they nor any of the other producers of the Dominion can regard with indifference any attempt on the part of that corporation to make unfair exactions. But at the same time they must recognize that it is not for their good that it should be reduced to the impecunious status of the average transportation system of this continent."

## Canadian National Railways Earnings.

| | 1920 | 1919 |
|---|---|---|
| January | $ 7,727,562 | $ 6,787,517 |
| February | 6,516,059 | 6,265,562 |
| March | 7,761,326 | 7,160,036 |
| April | 8,207,478 | 6,936,635 |
| May | 8,305,860 | 7,884,287 |
| June | 7,776,538 | 6,433,035 |
| July | 9,003,674 | 7,896,685 |
| August | 9,582,989 | 8,415,864 |
| September | 9,685,682 | 8,853,007 |
| | $74,107,168 | $66,632,628 |

Approximate earnings for three months ended Oct. 21, $8,477,063, against $6,320,610 for same period 1919.

### Canadian Northern Railway System.

| | 1920 | 1919 |
|---|---|---|
| January | $4,200,700 | $4,026,000 |
| February | 3,862,300 | 3,363,800 |
| March | 4,587,700 | 3,554,350 |
| April | 4,732,623 | 3,878,149 |
| May | 4,863,500 | 4,337,750 |
| June | 4,364,600 | 3,131,000 |
| July | 5,168,500 | 4,347,300 |
| August | 5,900,700 | 4,901,150 |
| | $37,680,623 | $31,539,499 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $13,914,569 | $13,328,628 | $ 585,941 | *967,571 |
| Feb. | 13,557,104 | 12,843,231 | 713,873 | *267,242 |
| Mar. | 15,715,937 | 13,758,171 | 1,957,766 | 418,721 |
| Apr. | 15,929,416 | 13,587,570 | 2,341,846 | 253,222 |
| May | 16,459,986 | 13,262,044 | 3,197,942 | 164,182 |
| June | 16,480,574 | 13,849,757 | 2,630,817 | *359,604 |
| July | 17,375,761 | 15,756,275 | 1,619,486 | *1,377,218 |
| Aug. | 17,994,769 | 15,793,956 | 2,200,813 | *1,577,355 |
| Sept. | 20,009,287 | 16,100,632 | 3,908,655 | *183,265 |
| | $147,438,403 | $128,280,263 | $19,157,130 | *$3,896,130 |
| Incr. | 23,197,429 | 27,093,559 | ..... | ..... |
| Decr. | ..... | ..... | $3,896,130 | ..... |

Approximate earnings for three weeks ended Oct. 21, $17,028,000, against $12,235,000 for same period 1919.

*Decreases.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net |
|---|---|---|---|
| January | $5,054,034 | $5,867,445 | $*813,441 |
| February | 4,660,831 | 5,159,742 | *498,911 |
| March | 5,756,372 | 5,491,293 | 265,079 |
| April | 5,477,816 | 5,187,340 | 290,476 |
| May | 5,878,934 | 5,547,513 | 331,421 |
| June | 6,645,433 | 6,146,600 | 490,833 |
| July | 7,592,000 | 6,568,053 | 1,023,947 |
| August | 7,764,280 | 6,273,621 | 1,490,659 |
| | $48,829,700 | $46,241,607 | $2,588,093 |
| Incr. | $6,500,553 | $8,266,180 | ..... |
| Decr. | ..... | ..... | $1,765,627 |

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ADVERTISING RATES furnished on application.

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TORONTO, CANADA, NOVEMBER, 1920

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## Canadian National Railways' Directors' Western Inspection Trip.

D. B. Hanna, President, Canadian National Rys., left Toronto Oct. 8 for Ottawa, and started from there the next day for an inspection trip over the C.N.R. western lines, accompanied by two other directors, Thos. Cantley, and Robt. Hobson; another director, R. T. Riley, joining them at Winnipeg. The party were accompanied throughout the trip by the following officials:—S. J. Hungerford, Vice President, Operation and Maintenance; R. P. Ormsby, Secretary; C. B. Brown, Engineering Assistant to Vice President, Operation and Maintenance; D. Crombie, Transportation Assistant to Vice President, Operation and Maintenance; C. S. Gzowski, Jr., Assistant to Vice President in charge of Construction; and A. T. Weldon, Assistant Freight Traffic Manager, Montreal. F. P. Brady, General Manager, Eastern Lines, accompanied the party to Winnipeg and they were met at Port Arthur by A. E. Warren, General Manager, Western Lines, who accompanied them to the Pacific coast and back to Winnipeg. The following officials went from Winnipeg to the Pacific coast and return:—C. E. Brooks, Mechanical Assistant, Locomotive Department, to Vice President Operation and Maintenance; H. A. Dixon, Chief Engineer, Western Lines; A. H. Eager, Mechanical Superintendent, Western Lines; A. McCowan, Master Car Builder, Western Lines. J. R. Cameron, Assistant General Manager, Vancouver, met the party at Edmonton and accompanied them to Prince Rupert, Vancouver, Victoria, and back to Lucerne, B.C. Local operating officials travelled on the train over their respective jurisdictions.

The party travelled by special train, the route being via C.N.R., Ottawa to Edmonton; Grand Trunk Pacific Ry., Edmonton to Prince Rupert, and back to Lucerne, B.C.; C.N.R., Lucerne to Vancouver; steamship Vancouver to Victoria; C.N.R., Victoria to end of track, towards Alberni, and return; steamship, Victoria to Vancouver; C.N.R., Vancouver to Edmonton, Drumheller and Saskatoon; G.T.P.R., Saskatoon to Winnipeg; National Transcontinental Ry., Winnipeg to Cochrane; Timiskaming & Northern Ontario Ry., Cochrane to North Bay, and C.N.R. from North Bay, via Capreol, to Toronto, which was reached Oct. 27.

During the trip Mr. Hanna discussed business matters with a number of individuals, boards of trade, etc. He and his party were entertained at luncheon at Vancouver by the board of trade.

## Suit Against Dominion Government for Ordering Steel Rails Manufacture.

Ottawa press dispatch, Oct. 25.—Three million dollars is at stake in a case brought before the Exchequer Court today. Because Hon. J. D. Reid, Minister of Railways, directed the Dominion Iron & Steel Co. to divert its organization from the making of shell steel to the manufacture of steel rails, the company demands that under the compensatory clause of the War Measures Act it shall have made good to it the additional profits it would have made on shell steel for for the Minister's order. The order in council through which the Minister made his order effective stated that he would himself set the price later after finding out the cost of production. The price set later was $65 a ton, and the dispute is whether the order in council or the compensatory clause of the War Measures Act governs. Wallace Nesbitt, K.C., E. M. McDonald, K.C., and Hector McInnes, K.C., appear for the steel company, and Messrs. Meredith and Holden for the Government. The steel rails were for the railways, the latter have an incidental interest in the enquiry. The C.P.R. is represented by W. N. Tilley, K.C., the Grand Trunk by W. C. Chisholm, and the T., H. & B. Ry. by Mr. Sewell, K.C., of Hamilton.

## Authority to Seize and Sell Coal and Coke Not Unloaded Promptly.

General order 316. Oct. 5, as follows: Re the question of the coal supply of Canada; and in the matter of expediting the transportation performance of coal carrying equipment in Canada, and the powers conferred upon the Board by chap. 66 of the Acts of the Parliament of Canada, 1920. Upon its appearing to the Board that there is a shortage of coal carrying equipment, and that the rate at which coal cars have been, and are being, unloaded is impeding the full utilization of available equipment, and in pursuance of the powers conferred by the said act, chapter 66, 1920, the Board doth order that whenever, by reference from the Board or otherwise, it comes to the knowledge of the fuel administrator for the time being of any province, duly appointed by the government of such province, that any freight car containing coal or coke has remained under load at its destination or elsewhere on any railway in Canada for a longer period than six days after arrival, the fuel administrator may notify the consignee by registered mail, or by telegram, that unless the said car is unloaded, or furtherance order given as the case may be, within two days after date of such notice, the fuel administrator will take the action hereinafter outlined, and the fuel administrator may thereupon authorize the railway company to seize the contents of the said car, and summarily offer the same for sale to the municipality at which the said car is seized, and to any coal or coke dealers at the said point, and to sell the same to the municipality or the dealer offering the highest price therefor; and after paying all charges that may be due and chargeable thereon, as well as the expenses connected with the seizure and sale, the railway company shall pay the balance, if any, of the proceeds of such sale to the consignee or to the consignor, as their interest may appear. The Board doth further order that any fuel administrator taking action under the foregoing paragraph shall thereupon report to the Board what action has been taken by him, together with recommendations for any further action he may deem necessary.

**Phoenix Contracting Co. Ltd.** has been incorporated under the British Columbia Companies Act, with $25,000 authorized capital, and office at Vancouver, B.C., to carry on a general construction business, including ships, piers, wharves, breakwaters, and harbor development works, railways, etc.

**The trial of a number of C.P.R.** conductors for irregularities in connection with selling tickets on trains, which was fixed to come off in the Court of King's Bench, Montreal, on Oct. 13, was postponed to Nov. 10.

# Railway Rolling Stock Orders and Deliveries.

The G.T.R. has received 3 eight-wheel switching locomotives from Canadian Locomotive Co.

The Paris-Orealys Ry., France, is reported to have ordered 50 Pacific type locomotives from American Locomotive Co., at an approximate cost of $4,000,000.

The C.P.R., between Sept. 17 and Oct. 13, received 2 passenger locomotives and 7 vans from its Angus shops, Montreal, and also received a 12 ton locomotive crane, the purchase of which was announced in our August issue.

The Railways and Canals Department, Ottawa, will receive tenders to Nov. 1 for a new or second hand 0-4-0 switching locomotive, 50 or 60 tons, saddle tank type preferred, but locomotive with tender will be accepted if former not obtainable. Delivery to be made at Government siding, Merritton, Ont., for use on Welland Ship Canal construction.

The Reid Newfoundland Co.'s 200 car trucks, which Canadian Car & Foundry Co. is building, will be of the arch bar type, for 3½ ft. gauge track, equipped with McCord journal boxes for 3¾ x 7 in. journals, Simplex I beams, brake beams, axles with M.C.B. 3¾ x 7 in. journals, wooden truck bolster, trussed wood-

| | |
|---|---|
| Wheel base of engine, rigid | 13 ft. 6 in. |
| Wheel base of engine, total | 30 ft. 9 in. |
| Wheel base of engine and tender | 61 ft. 3 in. |
| Heating surface, fire box and arch tubes | 179 sq. ft. |
| Heating surface, tubes | 2,244 sq. ft. |
| Heating surface, total | 2,423 sq. ft. |
| Driving wheels, diar. | 51 in. |
| Driving wheel, centers | Cast steel |
| Driving journals, diar. and length | 9½ and 9 x 12 |
| Cylinders, diar. and stroke | 22 x 28 in. |
| Boiler, type | Extended wagon top, radial stayed |
| Boiler pressure | 190 lb. |
| Tubes, number and diar. | 24—5⅜; 189—2 in. |
| Tubes, length | 17 ft. |
| Injectors | Nathan No. 9 |
| Safety valves | 3 in. Lunkenheimer |
| Air brakes | Westinghouse American |
| Packing | King, metallic |
| Superheated—Locomotive Superheater Co., type A | |
| Frame cradle | Commonwealth |
| Trailing truck | Delta |
| Valve motion | Walschaert |
| Headlight | Electric |
| Weight of tender loaded | 153,500 lb. |
| Tank capacity, oil | 2,700 imp. galls. |
| Tank capacity, water | 6,000 imp. galls. |
| Tank, type | Water bottom |
| Truck, type | Equalized |
| Wheel, diar. | 33 in. |
| Wheel type | Steel tired |
| Journal diar. and length | 5½ x 10 in. |
| Brakebeam | Safety simplex |

The Lake Superior Paper Co. has ordered a 6 wheel switching locomotive from Montreal Locomotive Works. The chief details are as follows:—

| | |
|---|---|
| Weight | 12,300 lb. |
| Tubes, no. and diar. | 100, 2 in. |
| Heating surface, tubes | 426 sq. ft. |
| Heating surface, firebox | 58 sq. ft. |
| Heating surface, total | 484 sq. ft. |
| Grate area | 10.2 sq. ft. |
| Tractive power | 8,900 lb. |
| Factor of adhesion | 3.94 |
| Reverse gear | Hand lever |
| Cab | Wood |
| Tender frame | Steel channels |
| Tender wheel diar. | 26 in. |
| Tender truck, type | Arch bar |
| Tender journals | 3¾x7 in. |
| Tank, type | U shape |
| Water capacity | 1,200 gall. |
| Fuel capacity | 1¼ cords wood |

| | |
|---|---|
| Tubes, no. and diar. | 141, 2 in. |
| Heating surface, tubes | 935 sq. ft. |
| Heating surface, firebox | 83 sq. ft. |
| Heating surface, total | 1,018 sq. ft. |
| Grate area | 15 sq. ft. |
| Tractive power | 16,700 lb. |
| Factor of adhesion | 4.25 |
| Reverse gear | Hand lever |
| Cab | Wood |
| Tender frame | Steel channels |
| Tender wheel diar. | 26 in. |
| Tender truck, type | Arch bar |
| Tender journals | 3¾x7 in. |
| Tank, type | U shape |
| Water capacity | 2,000 gall. |
| Fuel capacity | 2 cords wood |

The Rhodesian Railways, South Africa, have ordered twelve 4-8-2 type locomotives from Montreal Locomotive Works. Following are the chief details:—

| | |
|---|---|
| Gauge | 3 ft. 6 in. |
| Weight on truck | 31,000 lb. |
| Weight on trailer | 23,500 lb. |
| Weight, total | 170,000 lb. |
| Wheel base, driving | 12 ft. 9 in. |
| Cylinders, diar. and stroke | 22 x 24 in. |
| Driving wheel diar. | 48 in. |
| Driving journals....main 9 x 9 in.; others 8 x 9 in. | |
| Trailing wheel diar. | 33 in. |
| Trailing wheel journals | 6 x 12 in. |
| Engine truck wheels | 28½ in. |
| Engine truck wheel journals | 5½ x 9½ in. |
| Boiler, type | Belpaire straight top |
| Boiler pressure | 180 lb. |
| Boiler, diar., inside first ring | 65 in. |
| Firebox, length and width | 80⅜ x 62¾ in. |
| Tubes, no. and diar. | 129—2¼ in. |

Pacific Great Eastern Ry. Mikado Locomotive.

en transoms and wooden spring plank. The wheel base will be 5 ft. 3½ in., top of rail to top of bolster 2 ft. 3 in., center of side bearings 4 ft. 1 in.

Canadian National Rys. rolling stock receipts to Oct. 9, on account of orders placed early in the year, were as follows: 13 Santa Fe (2-10-2) locomotives, out of an order for 25, from Montreal Locomotive Works; 20 switching (0-6-0) locomotives, out of an order for 30, from Canadian Locomotive Co.; 924 general service cars out of an order for 1,150, from Eastern Car Co.; 552 box cars, out of an order for 1,000; 21 refrigerator cars, out of an order for 600, and 79 cabooses, out of an order for 80, from Canadian Car & Foundry Co.; 70 box cars, out of an order for 1,500, from National Steel Car Co.; 350 Hart-Otis ballast cars, completing order, from Hart-Otis Car Co.; 7 cabooses ,out of an order for 20, from Preston Car & Coach Co. and 10 cabooses, out of an order for 30, from the C.N.R. shops, Transcona, Man.

The Pacific Great Eastern Ry. Mikado locomotive, illustrated on this page, is one of three built for that road by the Canadian Locomotive Co. The chief details are as follows:—

| | |
|---|---|
| Fuel used | Oil |
| Weight on drivers | 162,000 lb. |
| Weight of engine, total | 212,000 lb. |
| Wheel base | 11 ft. |
| Cylinders, diar. and stroke | 19 x 24 in. |
| Driving wheel, diar. | 50 in. |
| Journals | 9 x 10 in. |
| Boiler, type | Straight top |
| Boiler pressure | 185 lb. |
| Boiler diar., inside first ring | 57 in. |
| Firebox, length and width | 84 x 33¾ in. |
| Tubes, no. and diar. | 218—2 in. |
| Heating surface, tubes | 1,246 sq. ft. |
| Heating surface, firebox | 101 sq. ft. |
| Heating surface, total | 1,347 sq. ft. |
| Grate area | 19.7 sq. ft. |
| Tractive power | 27,300 lb. |
| Factor of adhesion | 4.5 |
| Reverse gear | Hand lever |
| Cab | Wood |
| Tank, type | Saddle |
| Water capacity | 1,500 gall. |
| Fuel capacity | 1½ tons |

The Haytian American Corporation has ordered one 4-wheel (0-4-0) locomotive, and one mogul (2-6-0) locomotive from Montreal Locomotive Works. The chief details of each are as follows:—

| | 0-4-0 | 2-6-0 |
|---|---|---|
| Gauge | 30 in. | 30 in. |
| Weight on drivers | 35,000 lb. | 71,000 lb. |
| Weight on truck | | 9,000 lb. |
| Weight, total | 35,000 lb. | 80,000 lb. |
| Wheel base | 4 ft. 9 in. | 8 ft. 4 in. |
| Cylinders, diar. & stroke | 11x16 in. | 15x20 in. |
| Driving wheel diar. | 30½ in. | 40 in. |
| Journals | 5 x 6 in. | 7 x 8 in. |
| Truck wheel | | 26 in. |
| Truck wheel journals | | 4½ x 7 in. |
| Boiler type | Straight top | Straight top |
| Boiler pressure | 165 lb. | 175 lb. |
| Boiler diar., inside first ring | 41 in. | 51 in. |
| Firebox, length and width | 40x36¼ in. | 58x37¼ in. |

| | |
|---|---|
| Flues, no. and diar. | 26—5½ in. |
| Heating surface, tubes | 1,415 sq. ft. |
| Heating surface, flues | 695 sq. ft. |
| Heating surface, f.b. tubes | 16 sq. ft. |
| Heating surface, firebox | 137 sq. ft. |
| Heating surface, total | 2,263 sq. ft. |
| Superheating surface | 582 sq. ft. |
| Grate area | 35.2 sq. ft. |
| Tractive power | 37,000 lb. |
| Factor of adhesion | 3.1 |
| Superheater | Locomotive Superheater, type A |
| Reverse gear | South African Standard |
| Cab | Steel plate |
| Tender frame | Steel channels |
| Tender wheel diar. | 34 in. |
| Tender journals | 5¼ x 10 in. |
| Tank, type | Water bottom |
| Water capacity | 4,000 imp. gall. |
| Fuel capacity | 9½ tons |
| Speed recorder | Hasler |

The C.P.R., as announced in our last issue, has ordered 15 Mikado (2-8-2) locomotives from Montreal Locomotive Works. Following are the chief details:

| | |
|---|---|
| Weight on drivers | 234,000 lb. |
| Weight on truck | 28,000 lb. |
| Weight on trailer | 56,000 lb. |
| Weight, total | 318,000 lb. |
| Wheel base, driving | 16 ft. 6 in. |
| Cylinders, diar. and stroke | 25½ x 28 in. |
| Driving wheel, diar. | 63 in. |
| Driving journals, main | 11½ x 21 in. |
| Driving journals, others | 10½ x 14 in. |
| Trailer wheel, diar. | 45 in. |
| Trailing wheel journals | 6 x 12 in. |
| Engine truck wheels | 31 in. |
| Engine truck wheel journals | 6 x 12 in. |
| Boiler, type | Straight type, taper bottom |
| Boiler, diar. inside first ring | 78½ in. |
| Boiler pressure | 200 lb. |
| Firebox, length and width | 120⅛ x 84⅜ in. |
| Tubes, no. and diar. | 211—2¼ in. |

| | |
|---|---|
| Flues, no. and diar. | 40—5½ in. |
| Heating surface, tubes | 2,287 sq. ft. |
| Heating surface, flues | 1,060 sq. ft. |
| Heating surface, f.b. tubes | 43 sq. ft. |
| Heating surface, firebox | 274 sq. ft. |
| Heating surface, total | 3,664 sq. ft. |
| Superheating surface | 845 sq. ft. |
| Grate area | 70.3 sq. ft. |
| Tractive power | 56,147 lb. |
| Factor of adhesion | 4.17 |
| Superheater | Locomotive Superheater, type A |
| Reverse gear | Ragonnet |
| Cab | C.P.R. standard vestibule |
| Tender frame | Commonwealth cast steel |
| Tender wheel diar. | 36¼ in. |
| Tender truck, type | C.P.R. standard pedestal |
| Tender journals | 6 x 11 in. |
| Frame cradle | Commonwealth |
| Tank, type | Water bottom |
| Water capacity | 8,000 imp. gall. |
| Coal capacity | 14 tons |

The Canadian National Rys. Santa Fe locomotives, 25 of which were ordered early in the year from Montreal Locomotive Works, and which has been delivered, have the following chief details:—

| | |
|---|---|
| Cylinders, diar. and stroke | 26 x 32 in. |
| Tractive power | 64,500 lb. |
| Factor of adhesion | 3.99 |
| Wheel base, driving | 20 ft. 6 in. |
| Wheel base, total | 37 ft. 10 in. |
| Wheel base, engine and tender | 70 ft. 10¼ in. |
| Weight in working order | 319,300 lb. |
| Weight on drivers | 257,800 lb. |
| Weight on trailer | 29,500 lb. |
| Weight on engine truck | 32,000 lb. |
| Weight, engine and tender | 518,500 lb. |
| Boiler, type | Extended wagon top |
| Boiler, diar. inside first ring | 78 in. |
| Boiler pressure | 200 lb. |
| Firebox, length and width | 144⅛ x 84¼ in. |
| Crown staying | Radial button head and Alco flexible |
| Tubes | Hot rolled steel |
| Tubes, no. and diar. | 252—2 in. |
| Flues, no. and diar. | 45—5⅜ in. |
| Heating surface, tubes | 2,230.83 sq. ft. |
| Heating surface, flues | 1,022.99 sq. ft. |
| Heating surface, firebox | 245 sq. ft. |
| Heating surface, arch tubes | 41 sq. ft. |
| Heating surface, total | 3,539.82 sq. ft. |
| Superheater surface | 850 sq. ft. |
| Grate area | 66.7 sq. ft. |
| Driving wheels, diar. | 57 in. |
| Driving wheels, type | main, cast steel; others, cast steel, steel tired |
| Engine truck wheels, diar. | 31¼ in. |
| Trailing truck wheels, diar. | 31¼ in. |
| Tender truck wheels, diar. | 31¼ in. |
| Driving journals | 11½ x 22 in. |
| Engine truck journals | 7 x 12 in. |
| Trailing truck journals | 7 x 12 in. |
| Tender truck journals | 6 x 11 in. |
| Journal boxes | main, Cole cast steel; others, cast steel |
| Air brakes | Westinghouse E.T.6 |
| Tender frame | Steel channel |
| Tank, type | Water bottom |
| Water capacity | 8,300 imp. gall. |
| Coal capacity | 17 tons |

# Freight and Passenger Traffic Notes.

The Board of Railway Commissioners has dismissed the Canadian National Rys. application to discontinue stopping trains 5 and 6, at Richmond, Ont.

The Delaware & Hudson Co. has taken for its exclusive use the ticket office at 238 St. James St., Montreal, which for the past two years has been operated as a consolidated ticket office.

The C.P.R. Trans-Canada Limited 7 and 8, operating between Montreal and Vancouver, both ways, started from the two terminal points Oct. 2 on their last trips for this year.

The Board of Railway Commissioners has refused to order the C.P.R. to replace an agent at Reaburn Station, Man., as the earnings do not amount to $15,000 a year.

A special G.T.R. train carrying a United States financial man, left Montreal on Oct. 1 at 2 a.m. for Toronto, which was reached in seven hours, an average speed of 47.7 miles an hour.

The Board of Railway Commissioners has recommended the sanctioning of an agreement between the C.P.R. and the Pere Marquette Rd., for the joint use of C.P.R. facilities at Windsor, and Walkerville Jct., Ont.

The New York Central Lines, and the Rutland Rd., which for the past two years have been using the consolidated ticket office at 238 St. James St., Montreal, have opened a joint ticket office at 9 Victoria Square, Montreal.

Hon. W. F. Coaker, Chairman of the Newfoundland Railway Commission, is reported to have announced that passenger rates on the Reid Newfoundland Ry. are to be increased 1c. a mile, and that an increase in freight rates will probably be made.

Detroit, Mich., people are, a press report states, buying railway tickets for United States points in Windsor, Ont., are saving money by so doing, owing to exchange rates, and the difference between the Canadian and the United States war tax.

The Alberta & Great Waterways Ry. is, we are officially advised, operating under the Alberta Government's management a mixed train, twice a week on Mondays and Thursdays from Edmonton to Lac la Biche, and on Tuesdays and Fridays from Lac la Biche to Edmonton.

The Grand Trunk Ry., beginning Oct. 3, attached to the Montreal-Toronto train leaving Montreal at 7.30 p.m. an additional sleeping car for Kingston Jct., and Trenton, Ont. Returning, the car leaves Trenton at 9.10 p.m. and Kingston Jct. at 1.55 a.m. It is operated daily, except Sunday.

The Western Canadian Passenger Association is reported to have notified the Winnipeg Social Welfare Commission that after Oct. 1 no half fare tickets would be granted for the transportation of aged persons, or those with incurable diseases from Winnipeg to places where they can be cared for.

The Canadian National Rys. car ferry between Cape Tormentine, N.B., and Borden, P.E.I., is now making only one regular trip a day each way on week days only. Connection is made with the 1.15 p.m. Sackville-Cape Tormentine train, by trains leaving Moncton at 8.55 a.m. and 10.55 a.m.; by the train leaving St. John at 7.10 a.m., and by trains leaving Halifax, N.S., at 7.40 a.m. and 8.10 a.m.

The Canadian National Rys. are reported to have inaugurated a new freight service, Oct. 11, from Regina to Moose Jaw and Riverhurst, Sask., on Mondays, Wednesdays and Fridays, returning to Regina on Tuesdays, Thursdays and Saturdays; and from Regina to Moose Jaw and Radville, Sask., on Tuesdays, Thursdays and Saturdays, returning to Regina, Mondays, Wednesdays and Fridays.

The Board of Railway Commissioners has dismissed a complaint by Thos. McClymont, Prince Rupert, B.C., that the Grand Trunk Pacific Ry. rate of $2.40 a net ton from Telkwa to Prince Rupert is excessive and discriminatory, compared with the rate charged by the railway from mines located on its Albert lines, as it had not been established that the rate was contrary to the discrimination sections of the Railway Act.

A Newfoundland press report states that the cross-country train service on the Reid Newfoundland Ry. will be discontinued during the winter, and that trains will only run from St. John's to Millertown Jct., 310 miles. During the winter of 1919-20 the railway through the Topsonto District, lying between Millertown Jct. and Port aux Basques, was so blocked by snow and ice that traffic was suspended for a considerable period.

The Canadian National Rys. took over the operation of the Quebec & Saguenay Ry., from Quebec to La Malbaie (Murray Bay), on Oct. 1. The train service is as follows:—Monday, Wednesday and Friday, leave La Malbaie 8.45 a.m., arrive Quebec 1.30 p.m.; leave Quebec 12.30 p.m., arrive La Malbaie 6.50 p.m. Tuesday, Thursday and Saturday, leave La Malbaie 7.15 a.m., arrive Quebec 1.30 p.m.; leave Quebec 12.30 p.m., arrive La Malbaie 5.05 p.m.

The Pacific Great Eastern Ry. is reported to have inaugurated a combined steamboat and train service twice-a-week from Vancouver to Williams Lake, at mile 277.8 on the railway. The Terminal Steamship Line runs a steamboat leaving Vancouver at 9.15 a.m. on Wednesday and Saturday for Squamish, wher nesday and Saturday for Squamish, where passengers, etc., are transferred to the train, which reaches Williams Lake at 5.45 a.m. on Thursday and Sunday. The return train leaves Williams Lake at 10 p.m. on Sunday and Thursday, and Vancouver is reached at 7.30 p.m. on the following days.

The Canadian National Rys., following the co-ordination of perating which has been arranged between the C.N.R., the G.T.R., and the G.T. Pacific Ry., has put in operation a new daily train service between Montreal and Vancouver, which with connecting trains to and from the Atlantic coast, Toronto and other points, and Prince Rupert, gives practically through service from coast to coast, with a double daily service between Montreal and Winnipeg, and the choice of alternative routes west of Winnipeg. The service is operated from the Maritime Provinces to Montreal by the Ocean Limited and connecting trains from Sydney and St. John. The new train starts from Bonaventure station, Montreal, at 5 p.m. daily and runs over the G.T.R. to Ottawa, and thence over the C.N.R. via North Bay, Capreol and Port Arthur to Winnipeg, which is reached at 8.45 p.m. central time, on the second day. The second service between Montreal and Winnipeg is the train known as the National, which runs over the G.T.R. from Montreal via Toronto to North Bay, over the Timiskaming & Northern Ontario Ry. to North Bay to Cochrane, and over the National Transcontinental Ry. from Cochrane to Winnipeg. The new transcontinental train is run over the G.T. Pacific Ry. from Winnipeg via Saskatoon to Edmonton and over the Canadian Northern Ry. from Edmonton to Vancouver, connecting three days a week at Jasper, B.C., with a G.T.P.R. train to Prince Rupert. Starting from Halifax, N.S., at 8.10 a.m. on say, a Monday, the trip to Vancouver is completed at 9 a.m. on the following Sunday. The train equipment used on the route consists of Compartment, observation car between Montreal and Vancouver; standard sleepers between Halifax, Sydney, Moncton and Montreal; between Montreal and Vancouver; Winnipeg and Edmonton, Winnipeg and Prince Rupert; Edmonton and Vancouver. Dining car between Halifax and Montreal; Montreal and Winnipeg; Winnipeg and Vancouver; Montreal and Vancouver. Tourist sleeper between Montreal and Vancouver. Standard first class cars and colonist cars—all steel equipment.

# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**The Alberta & Great Waterways Ry.** extends from Carbondale Jct., on the Edmonton, Dunvegan & British Columbia Ry., 14.4 miles from Edmonton, Alta., and is in regular operation to Lac la Biche, 113.2 miles. Track has been laid to mile 294, approximately 12 miles from McMurray, the projected terminus, but the line has not been completed for operation. Under the J. D. McArthur control trains were operated into and out of Edmonton over the E., D. & B.C. Ry., and the Grand Trunk Paacific Ry.

The line was mortgaged to secure its bond issue, which was guaranteed, as to principal and interest, by the Alberta Legislature, and the Alberta Government took over the line recently in order to secure its completion. In addition to the railway line, the Government took over the following rolling stock and equipment:—3 locomotives, 1 sleeping car, 1 first class car, 1 combination baggage mail, and express car, 1 business car, 2 gasoline combination cars, 1 Packard car, 99 standard box cars, 35 flat cars, 1 steam shovel.

The former directors have been replaced by the following members of the Alberta Government:—President, Hon. C. Stewart; Vice President and Treasurer, Hon. C. R. Mitchell; other directors:—Hon. J. R. Boyle, Hon. A. J. McLean. The officials in charge of operation are: General Manager, N. L. Harvey, Deputy Minister of Railway and Telephones; Secretary, L. Scott; Chief Engineer and Superintendent, H. A. Warner.

A press report states that a contract has been let to the Northern Construction Co., Vancouver, B.C., for the operation, maintenance and completion of the line from Lac la Biche to McMurray on a cost plus 10% basis. A gang of men is reported to have begun operations at the end of September north of Lac la Biche, and it was expected to have 300 men at work before winter thoroughly set in. All the construction work is to be done under the direction of the government engineers. (Oct., pg. 550.)

Since the above paragraph was put in type the Northern Construction Co. has advised us that it has received the contract and has furnished the following information:—Lac la Biche is the first division point north of Edmonton, being at mile 113. The line is now built to about mile 275, within 20 miles of Fort McMurray, which is its ultimate terminus. There will be very little construction work carried on this winter, with the exception of ballasting, etc., from Lac la Biche to the end of steel, a quantity of ties will be taken out and grading proceeded with from end of steel to Fort McMurray. R. A. Kennan will be in charge of the work as Superintendent for the Northern Construction Co., with office at Edmonton. (Oct., pg. 550.)

**Canadian Niagara Bridge Co.** — The route map of the proposed railway to be built in Ontario, and in New York State, and the location of the bridge across the Niagara River, shows a line starting from the Michigan Central Rd., 3.15 miles from Welland on the Welland-Niagara Falls line, in an almost straight line through Crowland and Willoughby Tps., to the west bank of the Niagara River, approximately 8.50 miles. The railway will cross Grand Island also in a straight line, and after the second crossing of the Niagara River will run northeasterly to make connection with the New York Central Rd. The route of the line in Canada has been approved by the Board of Railway Commissioners. E. W. Beatty, President, C.P.R., is President of the C. N. B. Co., and R. L. Latham, Chief Engineer, Toronto, Hamilton & Buffalo Ry., Hamilton, is Chief Engineer, C.N.B. Co. (Oct., pg. 550.)

Maurice C. Spratt, New York Central Rd. Attorney, is reported, in a Bridgeburg, Ont., press dispatch, to have said on Oct. 20:—All work on the bridge to be built over the Niagara River at Black Creek, six miles below Bridgeburg on the Canadian Niagara boulevard, and Grand Island, N.Y., will be held up till spring, when a definite start will be made. More has been done in the past two months than in any previous time since the Canadian-Niagara Bridge Co. secured its charter. The pier holes have been tested and gauged, the right of way optioned, and a large part of Grand Island has been purchased by the New York Central Rd. The right of way from the Michigan Central terminals have been optioned, as well as the A. Weaver farm, which will be the site of the Canadian approach.

**Cape Breton Coal, Iron & Ry. Co.**—A press report states that the Cape Breton Coal, Iron & Ry. Co., of which H. J. Mayhew, London, Eng., is President, is about to reopen its coal mines at Broughton, N.S. The Broughton colliery was opened up a number of years ago, and under a charter granted by the Nova Scotia Legislature in 1895 the company was authorized to build a railway and to develop a shipping port. Nothing was done under this act until 1903, when a company of which Mr. Mayhew was President obtained control, and between that date and 1905, over $1,000,000 was said to have been spent in sinking shafts and in building a town at Broughton. A spur line of railway from the collieries to a junction with the Sydney & Louisburg Ry. at Homeville Jct., was completed in 1905, and preparations were made for shipping the output at Louisburg. The company got into financial difficulties, and after some ineffectual attempts were made to sell the property, operations ceased towards the end of 1906, or early in 1907. The colliery is reported to have become full of water. (May, 1907, pg. 323.)

**The Dominion Atlantic Ry.** has carried out considerable work during the past season on its property in Nova Scotia. About 20 miles of main line track have been relayed with 85 lb. steel rails, replacing 56 and 65 lb. About 10 miles of ballasting have been done, between Ellerhouse and Mount Uniacke.

At Kentville the company's headquarters, the 2½ story station and office building has been extended for 40 ft., providing for restaurant and luncheon room and additional office accommodation. An improved station 130 x 30 ft. has been built at Digby, as described in Canadian Railway and Marine World for March., pg. 135. A 25,000 gall. water tank has also been built there.

At Kentville the following buildings have been erected, boiler and power house, 30 x 36 ft.; machine and erecting shop, 60 x 180 ft.; blacksmith and moulding shop, 30 x 144 ft.; turntable, 70 ft., operated by Pilling air tractor. The boiler house has a 36 in. brick stack, 60 ft. high, on concrete base, and is equipped with boilers of 200 h.p. The machine and erecting shop has an overhead gallery, for tin shop and general foreman's office, in the machinery end, and the erecting shop has two tracks, and an 80 ft. concrete inspection pit, with driving wheel drop pit, equipped with air operated wheel jack. The blacksmith shop has 6 forges and the moulding shop is equipped with forge and brass furnace. The buildings have wood framing, with Bishopric stucco board and cement stucco on outside, the roofing is heavy paroid. All buildings are steam heated and electric lighted. The new shops are located so as to provide for future extensions to the locomotive shed, also car and paint shop, with necessary trackage.

About half a mile from Grand Pre village, Grand Pre Park has been established, in the dyke lands, with an area of 14 acres. It has a rustic gatehouse, and is enclosed with a rustic fence, has a water garden for aquatic plants, and contains a monument of Evangeline, Longfellow's heroine.

**Edmonton, Dunvegan & British Columbia Ry.**—J. A. Macgregor, General Manager, is reported to have stated recently that improvements on the line are being carried out steadily, as far as the shortage of labor will permit. The work being done consists of putting in new and additional ties, drainage, etc. The real work of reconstruction of the line will be begun next spring. (Oct., pg. 550.)

**Esquimalt & Nanaimo Ry.**—A press report states that the Victoria, B.C., City Council is about to call for tenders for the construction of the substructure of the Johnson St. bridge. F. M. Preston, City Engineer, returned to Victoria, Oct. 5, from Montreal, where he had been in consultation with C.P.R. engineers in connection with the plans. Some alterations in the original plans were agreed upon, and as soon as the details of these have been worked out tenders will be invited. (Oct., pg. 550.)

**The Flinflon Mining District.** — A number of members of the Manitoba Legislature were taken on a trip of inspection recently by the Northland Association over the mining belt in which the Flinflon mining proposition is situated. A railway to serve the district would probably start from near Pas, Man., and the probable route is west of Lake Athapapuskow to the Flinflon mine, approximately 80 miles. It is estimated that this mine will produce copper ore in sufficient quantities to provide 2,000 tons a day for a smelter for 30 years. There are several propositions for a railway line under discussion, but the Northland Association and other interests favor the line being built by the Province of Manitoba. (June, pg. 297.)

**The Great Northern Ry.**, in order to carry out its plans in Vancouver, B.C., has, through its British Columbia subsidiary, the Vancouver, Victoria & Eastern Ry. & Navigation Co., asked the City Council that certain streets and lanes intersecting its cut be closed and conveyed to it, and offers in exchange certain other properties for roadway purposes, and to build eight steel and wooden bridges over the cut. The proposition is being considered by a special committee. (July, pg. 386.)

**Hudson Bay Ry.**—A press report states that the repairs ordered by the Dominion Government to be carried out on the line between Pas and Kettle River Rapids, Man., have been completed.

**Michigan Central Rd.**—The Board of Railway Commissioners has approved of locations and plans for freight shed at Ridgetown, Ont., and joint passenger and freight station at Hagersville, Ont.

**North Vancouver, Lillooet and Pemberton Meadows, B.C.**—A press report states that the Mayor of North Vancouver, B.C., is advocating the construction of a line between North Vancouver and the Lillooet and Pemberton Meadow districts. North Vancouver is the starting point of the Pacific Great Eastern Ry., the section between North Vancouver and Squamish being uncompleted. The P. G. E. Ry. Co. took over the uncompleted line of the old Howe Sound, Pemberton & Northern Ry. and Lillooet is now a station at mile 111.5 on that line, while Pemberton Meadows village is about 7 miles from Pemberton, a station on the P.G.E.R., 57.7 miles from Squamish.

**Pacific Great Eastern Ry.**—A press report states that the operating department has taken over 68 miles of line between Lone Butte and Williams Lake, B.C., from the contractors, and has extended the regular train service thereon. It is also stated that track has been laid from Williams Lake to Deep Creek, 16 miles, and that a contractors' service is being given thereon.

The B.C. Government is reported to have sold to a Seattle firm $1,000,000 of bonds at 100.73684, the proceeds of the issue to be used for construction on the railway. (Oct., pg. 550.)

**Reid Newfoundland Co.**—A press report states that work is to be started immediately on the construction of about three miles of line to connect the existing line with the proposed new terminal at Argentia, in the Placentia Bay district, and that the terminal pier or breakwater at this point will be ready in Jan. 1921. (Oct., pg. 547.)

**Toronto, Hamilton & Buffalo Ry.**—Application was made to the Board of Railway Commissioners at Hamilton, Ont., Oct. 7, by the Toronto, Hamilton & Buffalo Ry. Co. for permission to change the alignment of its tracks on Hunter St., at the corner of John St., Hamilton. Judgment was reserved. (June, pg. 298.)

## Birthdays of Transportation Men in November.

Many happy returns of the day to—

J. O. Adams, General Eastern Freight Agent, Canadian National-Grand Trunk Rys., New York, born at London, Ont., Nov. 21, 1872.

J. O. Apps, General Agent, Mail, Baggage and Milk Traffic, C.P.R., Montreal, born at Tara, Ont., Nov. 9, 1877.

H. E. Beasley, General Superintendent, Esquimalt & Nanaimo Ry., Victoria, B.C., born at Hamilton, Ont., Nov. 10, 1862.

W. C. Blake, Division Accountant, Canadian National-Grand Trunk Pacific Rys., Winnipeg, born at Liverpool, Eng., Nov. 28, 1865.

C. C. Bonter, General Baggage Agent, Canada Steamship Lines, Montreal, born at Toronto, Nov. 13, 1884.

G. B. Burchell, Managing Director, Bras d'Or Coal Co., North Sydney, N.S., Nov. 1, 1877.

J. R. Cameron, Assistant General Manager, Western Lines, Canadian National-Grand Trunk Pacific Rys., Vancouver, B. C., born at Truro, N.S., Nov. 5, 1865.

F. H. Clendenning, Foreign Freight Agent, C.P.R., Vancouver, B.C., born at Montreal, Nov. 9, 1881.

F. Conway, City Freight and Passenger Agent, C.P.R., Kingston, Ont., born at Ernestown, Ont., Nov. 19, 1850.

W. L. Crighton, General Advertising Agent, Canadian National Rys., Toronto, born at Derby, Eng., Nov. 9, 1871.

E. C. P. Cushing, Purchasing Agent, C.P.R., Calgary, Alta., born at Ottawa, Ont., Nov. 13, 1886.

W. R. Davidson, General Superintendent, Western Lines, G.T.R., Chicago, Ill., born at Everton, Mo., Nov. 8, 1871.

W. R. Devenish, Superintendent, Moncton Division, Maritime District, Canadian National Rys., Moncton, N.B., born in County Tipperary, Ireland, Nov. 21, 1882.

A. C. Douglas, Assistant General Purchasing Agent, C.P.R., Montreal, born there Nov. 10, 1881.

W. Downie, ex-General Superintendent, Atlantic Division, C.P.R., now of Whitby, Ont., born at Rock Currie, Ireland, Nov. 12, 1850.

Jos. Dubrule, President, Prescott & Ogdensburg Ferry Co., and General Manager Canadian Pacific Car & Passenger Transfer Co., Prescott, Ont., born at Spencerville, Ont., Nov. 14, 1872.

R. L. Fairbairn, Assistant Passenger Traffic Manager, Eastern Lines, Canadian National Rys., Toronto, born at Stillwater, Minn., Nov. 24, 1880.

J. E. Gibault, Resident Engineer, Quebec District, Canadian National Rys., Quebec, Que., born at St. Jerome, Terrebonne County, Que., Nov. 16, 1887.

G. N. Goad, Superintendent, Nipissing Division, Ontario District, Canadian National Rys., Capreol, Ont., born at Toronto, Nov. 26, 1884.

Grant Hall, Vice President, C.P.R., Montreal, born there, Nov. 27, 1863.

J. A. C. Kelman, Telegraph Traffic Supervisor, Central and Western Division, Grand Trunk Pacific Ry., born at Bowmanville, Ont., Nov. 1, 1886.

W. E. Ladley, Superintendent of Motive Power, Reid Newfoundland Co., St. John's, Nfld., born at Leeds, Eng., Nov., 1875.

J. McMillan, Manager of Telegraphs, C.P.R., Montreal, born at Liverpool, Eng., Nov. 2, 1866.

A. B. McNaughton, Superintendent, Portland Division, Eastern Lines, G.T. R., Portland, Me., born at Arnprior, Ont., Nov. 10, 1877.

H. R. Mallison, Purchasing Agent and Secretary to President, Montreal Tramways Co., Montreal, born at Toronto, Nov. 14, 1873.

C. Murphy, General Manager, Western Lines, C.P.R., Winnipeg, born at Prescott, Ont., Nov. 20, 1865.

G. H. Nowell, Master Mechanic, Lethbridge Division, Alberta District, C.P.R., Lethbridge, born at Montreal, Nov. 13, 1885.

G. Pelletier, Assistant Superintendent, Canadian National Rys., Levis, Que., born at Isle Verte, Que., Nov. 28, 1872.

W. J. Quinlan, District Passenger Agent, Canadian National-Grand Trunk Pacific Rys., Winnipeg, born at Montreal, Nov. 21, 1883.

J. J. Rose, Robert Reford Co., General Agents, Cunard, Anchor and Anchor-Donaldson Steamship Lines, Toronto, born there, Nov. 22, 1878.

G. H. Shaw, ex-General Traffic Manager, Canadian Northern Ry., Toronto, born at Smiths Falls, Ont., Nov. 25, 1859.

P. D. Sutherland, General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Hong Kong, China, born at Toronto, Nov. 2, 1879.

L. C. Thomson, General Storekeeper, Eastern Lines, Canadian National Rys., Toronto, born at Kingston, Ont., Nov. 25, 1882.

H. P. Timmerman, Industrial Commissioner, Eastern Lines, C.P.R., Montreal, born at Odessa, Ont., Nov. 6, 1856.

Guy Tombs, ex-Assistant Freight Traffic Manager, Eastern Lines, Canadian National Rys., now Traffic Manager, Canadian Export Paper Co., Montreal, born near Lachute, Que., Nov. 22, 1877.

T. D. Utley, Car Foreman, C.P.R., Weyburn, Sask., born at Leytonstone, London, England, Nov. 1, 1890.

T. W. White, District Engineer, Canadian National Rys., Edmonton, Alta., born at Clinton, Ont., Nov. 29, 1880.

H. E. Whittenberger, General Manager, Western Lines, G.T.R., Detroit, Mich., born at Peru, Ind., Nov. 9, 1869.

W. A. Whyte, District Freight Agent, Canadian National Rys., Vancouver, B.C., born at Hornsey, Eng., Nov. 24, 1890.

## Grand Trunk Railway Construction, Betterments, Etc.

Hamilton Bridge.—The Board of Railway Commissioners has authorized the rebuilding of the bridge carrying the company's tracks over the Hamilton Radial Electric Ry. at Birch Ave., Hamilton, Ont.

Stoney Creek Subway.—The Board of Railway Commissioners at Hamilton, Ont., Oct. 7, considered a complaint with reference to the subway under the G.T. R. tracks just west of Stoney Creek station, Ont. It was alleged that the subway is 17 ft. wide, and that the height from the surface of the road to the tracks is 10 ft. 3 in., and insufficient to meet traffic requirements, and that it is improperly drained. In addition to the question of the apportionment of the cost of any improvement of the subway, there are some engineering matters to be settled and the Commissioners suggested that the parties should endeavor to get together, and promised the assistance of the Commission's Chief Engineer, G. A. Mountain.

Woodstock Interlocking Plant. — A press report states that plans are under consideration for the installation of an interlocking plant at Woodstock, Ont., at an estimated cost of $20,000.

London Track Elevation, Etc.—A press report states that the London City Council's level crossing committee expects to have a report ready for submission at an early date. The plans, it is stated, will involve the construction of subways at Rectory and Rideout Sts., both of which will be worked in with a general track elevation plan to be taken up at a future date.

Another press report states that the London City Council has been advised that the Board of Railway Commissioners has decided that in the event of the city engaging with the G.T.R. in track elevation or the building of subways, the city's share of the expense should be only 25% and the railway should pay 75% of the total cost.

Port Huron Shop Extensions.—A U.S. press report states that plans for extensive improvements to the car and locomotive shops at Port Huron, Mich., are under consideration. (Oct., pg. 550.)

**The Railway Y.M.C.A.** at Bridgeburg, Ont., was badly damaged by fire, on Oct. 13.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 307. Sept. 1.—Re-consigning rates and penalty charges. Published fully in Canadian Railway and Marine World for October, pg. 549.

General order 308. Sept. 9; 309, Sept. 9; 310, Sept. 15; and 311, Sept. 23; authorizing increases in freight and passenger rates and approving tariffs. Published fully in Canadian Railway and Marine World for October, pgs. 532 and 533.

General order 312. Sept. 24—Amending general order 301, re coal shipments by water to the United States. Published in full in Canadian Railway and Marine World for October, pg. 549.

General order 313.—Sept. 22.—Amending general order 303 to provide that corrections where necessary be made in general or blanket supplement authorized by general order 303 upon one day notice, to accord with Special Permission 50,480 of Interstate Commerce Commission authorizing U.S. carriers or their agents to file upon 1 day notice special supplements correcting increased rates and charges filed under but not in conformity with its order, dated July 29.

General order 314. Oct. 5.—Regulations governing control of fuel supplies throughout Canada.

General order 315. Sept. 29.—Authorizing Dominion Department of Health to place signs dealing with the prevention and spread of venereal diseases in passenger cars and station lavatories; provided that a notation be carried on bottom of each copy of sign placed under provisions of this order to effect that same is issued under authority of the Dominion Department of Health.

General order 316. Oct. 5.—Ordering action to be taken by fuel administrators respecting cars of coal held loadcd longer than six days after arrival.

30,086. Sept. 8.—Authorizing Canadian National Rys., pending further order, to remove agent at Foresters Falls, Ont., on condition that caretaker be appointed.

30,087. Sept. 7.—Ordering C.P.R. to cut down high ground in each direction to not more than 4 ft. above roadway level at crossing of side road between Lots 5 and 6, Con. 10, Morris Tp., Ont., Goderich Branch.

30,088. Sept. 8.—Authorizing Halifax & South Western Ry. (C.N.R.) to fill in Dutch Village trestle, mile 4 Chester Subdivision, Bridgewater Division, N.S.

30,089. Sept. 9.—Authorizing C.P.R. to build two spurs across Carriere St., Montreal, for Barrett Co.

30,090. Sept. 10. Authorizing Kettle Valley Ry. to build its Penticton to International Boundary branch at grade across Penticton-Fairview highway at mile 2.13.

30,091. Sept. 10.—Authorizing C.P.R. to divert road allowance on east boundary of n.w. ¼ Sec. 32, Tp. 13, Range 7, at mile 96, Reston Subdivision, Sask.

30,092. Sept. 9.—Authorizing Union School Section 22, Brantford, and 7, Onondaga, Ont., to build ditch along west side of school section connecting Brantford & Hamilton Ry. ditch with ditch along the Stone Road, Brantford Tp., Ont.,

30,093. Sept. 9.—Authorizing Nelson Tp., Ont., to lay highway crossing over Toronto & Niagara Power Co.'s right of way, and Hamilton Radial Electric Ry. in Lot 12, Con. 3, south of Dundas St.

30,094. Sept. 10.—Authorizing C.P.R. to divert road allowance on south boundary of s. w. ¼ Sec. 25, Tp. 14, Range 8, west 2nd meridian, at mile 101, Reston Subdivision, and to close diverted portion within limits of its right of way.

30,095. Sept. 11.—Amending order 29,975, Aug. 12, re rebuilding of Grand River Ry. bridge 4, over Spring Creek, Preston Jct., Ont.

30,096. Sept. 10.—Authorizing G.T.R. to lay 10 in. water main across Montreal Park & Island Ry. right of way, lands and tracks at Turcot, Que.

30,097. Sept. 13.—Ordering that no further protection be required at crossing of Westchester Ave., 1½ miles from St. Catharines, Ont., so long as G.T.R. and Niagara, St. Catharines & Toronto Ry. maintain speed limitation of 10 miles on hour over same.

30,098. Sept. 14.—Approving plan, profile and book of reference showing revised location of Canadian Northern Pacific Ry. through fractional s. w. ¼ Sec. 4, Tp. 19; n. w. ¼ Sec. 32, Tp. 18, Range 14, west 6th meridian, and D.L. 442, Group 1, Kamloops Division, Yale District, B.C., and rescinding order 29,965, Aug. 10.

30,099. Sept. 10.—Rescinding order 21,707, Apr. 26, 1914, re Canadian Northern Ry. spur for Lake Winnipeg Shipping Co. at Woodroyd, Man.

30,100. Sept. 13.—Ordering G.T.R. to pay $60 to T. Morrison for damages to his land caused by its exercise of powers under order 29,837, re highway obstructions near Niagara Falls, Ont.

30,101. Sept. 14.—Authorizing C.P.R. to build extension to spur for Toronto Carpet Mfg. Co., Parkdale, Ont.

30,102. Sept. 14.—Ordering C.P.R. to build standard 2 station at Dufrost, Man., by Aug. 1, 1921, and pending erection to provide by Oct. 1, 1920, room and protection for package freight either by removing coal from present freight shed or by furnishing additional accommodation.

30,103. Sept. 14.—Dismissing application of Moose Jaw rural municipality 161, Sask., for order directing C.P.R. to provide crossing at Seventh Ave., Moose Jaw.

30,104. Sept. 16.—Extending for three months time within which C.P.R. spurs for Jenckes Canadian Co., Drummond, Que., may be built.

30,105. Sept. 13.—Ordering Grand Trunk Pacific Ry. to extend station platform at Telkwa, B.C., not less than 150 ft., by Oct. 31.

30,106. Sept. 17.—Extending to July 31, 1921, time within which interlocking plant at crossing of C.P.R. and G.T.R., Kingston, Ont., may be installed.

30,107. Sept. 17.—Approving new location of G.T.R. station at Long Branch, Ont.

30,108. Sept. 16.—Authorizing C.P.R. to build extension of spur for North Star Oil & Refining Co., St. Boniface, Man.

30,109. Sept. 17.—Approving route map of general location of Canadian National Rys. Borden Northerly Branch, mile 0 to 51.6, Sask.

30,110. Sept. 17.—Relieving G.T.R. from providing further protection at crossing west of Greenfield, Ont.

30,111. Sept. 17.—Authorizing Grand River Ry. to make alterations in its line as built in North Dumfries Tp. and Galt, Ont.; to build new station immediately south of Main St., Galt; to take certain G.T.R. lands; to lay track under C.P.R.; to cross G.T.R., south of Dundas Road; to install diamond at crossing of G.T.R., protecting same with interlocking plant, derails, home and distant signals, etc.; to connect with C.P.R., and to cross at grade, Hespeler Road, Samuelson and Beverly St., Dundas and Waterloo Road, Kerr and Main Sts., Grantham Ave., Rollo and Bond Sts., Galt, and portion of Dundas and Waterloo Road and Hespeler Road, North Dumfries Tp., Ont.

30,112. Sept. 18.—Authorizing C.P.R. to divert road allowance on west boundary of s.w. ¼ Sec. 5, Tp. 4, Range 9, west principal meridian, also to carry same at grade across its tracks at mile 107.8, La Riviere Subdivision, and to close diverted portion within right of way limits.

30,113. Sept. 20.—Authorizing C.P.R. to rebuild bridge 81.5 over Little Pic River, Heron Bay Subdivision, Algoma District, Ont.

30,114. Sept. 20.—Authorizing C.P.R. to build spur across Leonard St., Quebec, Que., for Quebec Preserving Co.

30,115. Sept. 20.—Authorizing C.P.R. to divert road allowance on north boundary of n.e. ¼ Sec. 22, Tp. 13, Range 22, west principal meridian, at mile 16.04, Miniota Subdivision, and to close diverted portion within right of way limits.

30,116. Sept. 20.—Extending to Oct. 31, the time within which work shall be done by G.T.R. at Garrison Road crossing, Bertie Tp., Ont.

30,117. Sept. 20.—Dismissing application of residents of Jasmin, Sask., for order requiring Grand Trunk Pacific Ry. to appoint station agent there, and ordering G.T.P.R. to appoint grain agent during September, October, November and December each year until otherwise ordered.

30,118. Sept. 21.—Dismissing application of United Farmers of Manitoba, Reaburn Branch, for an agent at Reaburn, Man., and ordering C.P.R. to appoint caretaker there.

30,119, 30,120. Sept. 22.—Approving revised location of Canadian Northern Pacific Ry. Okanagan Branch from mile 63 to 65 east from Kamloops Junction, and from mile 11.5 to 14.3 south from Vernon, B.C.

30,121. Sept. 22.—Approving revised location of Canadian National Rys. through Victoria Park, Humboldt, Sask., mile 53.09 to 53.62, and authorizing crossing of Limerick St., 2nd, 3rd and 4th Aves., MacLean St., and 5th Ave.

30,122. Sept. 21.—Approving agreement, Sept. 3, between Bell Telephone Co. and Peerless Telephone Co., Oxford County, Ont.

30,123. Sept. 22.—Authorizing C.P.R. to build extension of spur for Canadian Oil Companies, Winnipeg.

30,124. Sept. 22.—Approving location and plan of Michigan Central Rd. freight shed at Ridgetown, Ont.

30,125. Sept. 21.—Authorizing Ontario Lands and Forests Department to make highway crossing over G.T.R. on Lot 18, Con. 11, Chaffey Tp., Muskoka District.

30,126. Sept. 21.—Authorizing Mariposa rural municipality 350, Sask., to make highway crossing over C.P.R. between Secs. 29 and 32, Tp. 35, Range 21, west 3rd meridian.

30,127. Sept. 21.—Authorizing Canadian National Rys. to make highway crossing and diversion in n.w. ¼ Sec. 6, Tp. 26, Range 1, west 4th meridian, Alta.

30,128. Sept. 21.—Approving Boston & Maine Rd. bylaw, Aug. 3, authorizing G. Fort, G. H. Easton, J. R. MacAnanny and F. A. Hortter, or any of them, to establish or change rules, regulations, rates, fares, tolls, etc., within Canada and to publish and file tariffs and schedules, and rescinding orders 14,244 and 24,194.

30,129. Sept. 23.—Extending 30 days time within which G.T.R. may do work required under order 29,710, re removal of trees at West Hill, Ont.

30,130. Sept. 23.—Approving plan showing proposed replacement of detector bars by electric locking at interlocking plant protecting Welland Canal drawbridge, Toronto, Hamilton & Buffalo Ry. connection crossing of Michigan Central Rd. by Niagara, St. Catharines & Toronto Ry. at Welland, Ont.

30,131. Sept. 23.—Approving Grand Trunk Pacific Ry. clearance at sawdust conveyor and planing mill, for Giscome Lumber Co., Giscome, B.C.

30,132. Sept. 25.—Ordering C.P.R. to install gates at crossings of Pall Mall and Waterloo Sts., London, Ont., by June 1, 1921.

30,133. Sept. 23.—Ordering C.P.R. to build transfer track with Canadian National Rys. at Conquest, Sask., by Nov. 1.

30,134. Sept. 23.—Authorizing C.P.R. to make changes to sidings for Corrugated Paper Box Co., Toronto.

30,135. Sept. 24.—Relieving Esquimalt & Nanaimo Ry. from providing further protection at crossing at mile 76.57, about 1,953 ft. north of Wellington south board, Vancouver Island, B.C.

30,136. Sept. 24.—Relieving G.T.R. from providing further protection at first crossing east of Pottersburg, Ont.

30,137. Sept. 24.—Authorizing railways until further order, to issue free transportation to one chief inspector and 3 inspectors of live stock cars and yards of Dominion Department of Agriculture.

30,138. Sept. 24.—Approving agreement between Bell Telephone Co. and Bromley Telephone Association, Renfrew County, Ont., and rescinding order 26,029.

30,139. Sept. 25.—Rescinding order of the Railway Committee of the Privy Council, Nov. 22, 1892, respecting crossing of Wonham St., Ingersoll, Ont., by G.T.R.

30,140. Sept. 27.—Authorizing C.P.R. to build spur for Northwest Grain Dealers Association, St. Boniface, Man.

30,141. Sept. 27.—Authorizing Canadian Northern Pacific Ry. to cross Aberdeen Road at mile 2, Lumby Branch, on its Vernon-Lumby extension, B.C.

30,142. Sept. 25.—Approving agreement between Bell Telephone Co. and Farmers Telephone Co., Chateauguay, Huntingdon and Beauharnois and St. Johns Counties, Que.

30,143. Sept. 27.—Authorizing C.P.R. to divert road allowance in n.w. ¼ Sec. 19, Tp. 26, Range 13, west 3rd meridian, Sask., and to close diverted portion within limits of right of way, mile 241.44 Bassano Easterly Branch.

30,144. Sept. 28.—Recommending to Governor in Council for sanction, agreement between C.P.R. and Pere Marquette Rd. re joint use of C.P.R. facilities at Windsor and Walkerville Jct., Ont., and exempting companies from complying with conditions as to notice and publication as provided.

30,145. Sept. 25.—Approving certain plans of C.P.R. standard reinforced concrete spans.

30,146. Sept. 27.—Approving revised location of Canadian Northern Pacific Ry. Lumby Branch of its Kamloops-Kelowna-Lumby Branch, mile 9.6 to 12.

30,147. Sept. 27.—Dismissing complaint of Thos. McClymont, Prince Rupert, B.C., re Grand Trunk Pacific Ry. rate of $2.40 a ton on coal from Telkwa to Prince Rupert, B.C.

30,148. Sept. 27.—Approving revised location (Saskatchewan Land Survey) of portion of C.P.R. Leader Southeasterly Branch from mile 0 to 25.7.

30,149. Sept. 28.—Authorizing Canadian Northern Pacific Ry. to build Y at Lumby, B.C., and approving station grounds there.

30,150. Sept. 28.—Authorizing G.T.R. to build siding and spur for Sarnia Bridge Co., Sarnia, Ont.

30,151. Sept. 27.—Approving revised location of portion of C.P.R. Swift Current Northwesterly Branch, mile 28.86 to 34.23, and authorizing it to cross certain road allowances.

30,152. Sept. 28.—Authorizing G.T.R. to build spur for Willard Storage Battery Co., and Bateman-Wilkinson Co., Toronto.

30,153. Sept. 28.—Authorizing G.T.R. to build spur across Lusignan St., Montreal, for Pintsch Compressing Co.

30,154. Sept. 30.—Ordering G.T.R. forthwith to provide siding 2¼ miles south of flag station at Souterville, between Glencoe and Kingscourt, Ont.

30,155. Sept. 29.—Ordering C.P.R. to build station with passenger, freight, express and telegraph service, at or near Victoria Ave., Westboro, Ont., by Dec. 1.

30,156. Sept. 28.—Authorizing G.T.R. to rebuild bridge carrying its tracks over Hamilton Radial Electric Ry. at Birch Ave., Hamilton, Ont.

30,157. Oct. 1.—Authorizing Minneapolis, St. Paul & Sault Ste. Marie Ry. and other railways operating from Duluth, St. Paul, etc., to stations in Western Canada, to file revised rates on coal and coke from Duluth, St. Paul, etc., to stations in Western Canada upon one day notice.

30,158. Oct. 4.—Authorizing Chicago, Milwaukee & St. Paul Ry. to file revised rates on machinery from Chicago and Milwaukee to stations in Ontario upon 15 days notice.

30,159. Sept. 30.—Ordering Edmonton, Dunvegan & British Columbia Ry. to erect fences along its right of way through M. Moody's property in

s.w. ¼ Sec. 26, Tp. 65, Range 2, west 5th meridian, Alta., by June 1, 1921.

30,160. Sept. 30.—Autborizing British Columbia Electric Ry. to cross lane between 12th and 13th Aves., Vancouver, B.C.

30,161. Sept. 30.—Autborizing Canadian Northern Quebec Ry. to make highway crossing and diversion in Lots 12, 14 and 197, Range 2, St. Paulin Parish, Que., mile 103.5, St. Lawrence Subdivision.

30,162. Sept. 30.—Approving plan showing extension of Jacques Cartier St., Saraille Road, Ste. Cecile, Que., across St. Lawrence & Adirondack Ry.

30,163. Sept. 30.—Authorizing C.P.R. for 6 months and pending rebuilding of bridge as authorized under order 29,597, to rebuild bridge 9.3, Carleton Place Section, Eastern Division.

30,164. Oct. 1.—Approving Maine Central Rd. supplement 2 to Standard Passenger Tariff C.R. C. 214.

30,165. Sept. 29.—Amending order 29,971, which approved Canadian Northern Pacific Ry. plan, profile and book of reference of its Okanagan Branch revised location from mile 44.7 to 46.11, east from Kamloops Jct., B.C.

30,166. Sept. 30.—Extending peremptorily to Nov. 1 time within which work required to be done under order 28,275, re C.P.R. addition to freight shed at Prelate, Sask., be completed.

30,167. Sept. 30. Autborizing C.P.R. to divert road allowance on north and east boundaries of n.w. ¼ Sec. 25, Tp. 24, Range 3, west 2nd meridian, to carry same across its right of way at mile 15.6 Wynward Subdivision, and to close diverted portion within right of way limits.

30,168. Oct. 1.—Approving location and plans of Michigan Central Rd. joint passenger and freight station at Hagersville, Ont.

30,169. Sept. 29.—Authorizing C.P.R. to rebuild bridge 29.27 over Riley's Creek, North Bay Subdivision, Algoma District, Ont.

30,170. Sept. 29.—Authorizing Grand River Ry. to build at grade an additional track (double track) across Speedsville and Breslau Roads, Waterloo Tp., Ont.

30,171. Sept. 29.—Authorizing C.P.R. to divert Kelley Lake Road in Con. 2, McKim Tp., Ont.; to carry same across its tracks at mile 2.56 Webbwood Subdivision, and to close diverted portion within limits of rigbt of way.

30,172. Sept. 28.—Authorizing C.P.R. to rebuild bridge 91.48, Cartier Subdivision, Algoma District, Ont.

30,173. Oct. 4.—Authorizing Canadian National Rys. to build spur for Prairie Biscuit & Confectionery Co., Regina, Sask.

30,174. Oct. 4.—Authorizing C.P.R. to rebuild bridge 19.17 White River Subdivision, Algoma District, Ont.

30,175. Oct. 1. Approving Canadian Northern Ontario Ry. changes, consisting of diversion of waters of Orient Bay and filling in of two bridges at mile 43.67, Nipigon Subdivision, Thunder Bay District.

30,176. Sept. 26.—Approving revised location of portion of C.P.R. Leader Southeasterly Branch, mile 28.82 to 31.37, and authorizing crossing of certain highways.

30,177. Oct. 6.—Authorizing British Columbia Public Works Department to build crossing with gates over Kootenay Central Ry. at mile 32.22.

30,178, 30,179. Oct. 4.—Approving Bell Telephone Co. agreement with Bonfield Telephone Co., Nipissing District, Ont., and Emily Tp., Ont., and rescinding order 26,382, July 26, 1917.

30,180. Oct. 4.—Approving plan of proposed interlocking plant at crossing of G.T.R. main line and its Port Dover-Stratford line, at Woodstock, Ont.

30,181. Oct. 4.—Relieving Canadian National Rys. from providing further protection at first public crossing west of Lachute, Que.

30,182. Oct. 5.—Authorizing Saskatchewan Public Highways Department to build highway crossing over Grand Trunk Pacific Ry., north of n.w. ¼ Sec. 36, and in center of Sec. 36, Tp. 42, Range 26, west 2nd meridian.

30,183. Oct. 7.—Authorizing G.T.R. to build siding for R. Boehmer & Co., Kitchener, Ont.

30.184. Oct. 5.—Authorizing Saskatchewan Public Highways Department to build highway crossing over Canadian National Rys., in s.e. ¼ Sec. 15, Tp. 26, Range 26, west 3rd meridian.

30,185. Oct. 4.—Authorizing Niagara, St. Catharines & Toronto Ry. to build coal track for Interlake Tissue Mills Co., between Thorold and Merritton, Ont.

30,186. Oct. 6.—Rescinding order 22,242, July 20, 1914, authorizing Canadian Northern Ry. to build spur for Builders Supply Co. at mile 39.67, Oak Point Subdivision, Man.

30,187. Oct. 6.—Extending to Oct. 31 time within which wigwag signals may be installed at G.T.R. crossing of Parkdale Ave., Ottawa, Ont.

30,188. Oct. 6.—Ordering Canadian National Rys. to provide forthwith cattle pass for T. Prudhomme on Lot 37, broken front concession, North Plantagenet Tp., Ont.

30,189. Oct. 6.—Ordering Canadian National Rys. to stop trains 5 and 6, on flag, at Richmond, Ont., and dismissing C.N.R. application to discontinue stopping of these trains. See also order 30,209.

30,190. Oct. 6.—Dismissing application of Boards of Trade of Sydney and North Sydney, N.S., that said points be given benefit of special tariffs on export and import freight and for passengers holding steamship tickets as possessed by other Canadian ports engaged in this traffic.

30,191. Oct. 6.—Autborizing G.T.R. to operate over siding serving Feldspar Milling Co., Toronto.

30,192. Oct. 6.—Amending order 30,114, Sept. 20, re Canadian National Rys. spur for Quebec Preserving Co., Quebec, Que.

30,193. Oct. 7.—Authorizing Canadian Northern Quebec Ry. to cross and divert highway at mile 101.3 from Montreal, in St. Barnabe Parish, Que.

30,194. Oct. 7.—Authorizing G.T.R. to build three spurs for Dominion Sugar Co., Kitchener, Ont.

30,195. Oct. 7.—Relieving C.P.R. from providing further protection at second crossing west of Sand Point, Ont.

30,196. Oct. 7.—Authorizing Canadian Northern Quebec Ry. to cross and divert bighway between St. Severe and St. Barnabe Parishes, Que., mile 102.34 from Montreal.

30,197, 30,198. Oct. 6.—Approving revision of Canadian Northern Pacific Ry. Okanagan Branch mile 21.4 to 24.8, Vernon to Kelowna, on Duck Lake Indian Reserve no. 7, and mile 27.1 to 29.2, Vernon-Kelowna section of its Kamloops-Kelowna Branch, B.C.

30,199. Oct. 6.—Authorizing Canadian Northern Ontario Ry. to open for traffic its branch line from its yard at Cartierville, Que., to the village, 0.845 mile.

30,200. Oct. 9.—Authorizing C.P.R. and Sherbrooke Ry. & Power Co. to operate over crossing at Alexander St., Sherbrooke, Que., without first stopping trains.

30,201. Oct. 9.—Authorizing C.P.R. to rebuild bridge 2.33 over Duchesnay Creek, on its Cartier Subdivision, Ont.

30,202. Oct. 6.—Authorizing G.T.R. to close its station at Aston, Que.

30,203. Oct. 9.—Authorizing Kettle Valley Ry. to open for traffic itis line from Copper Mountain to a junction with Vancouver, Victoria & Eastern Ry. (G.N.R.) at Princeton, B.C., mile 0 to 13.7.

30,204. Oct. 9.—Approving Canadian National Rys. bylaw authorizing W. Hateley, Assistant General Freight Agent, to issue tariffs of tolls.

30,205. Oct. 11.—Rescinding orders 9,342 and 12,312, Jan. 18 and Sept. 8, 1910, re G.N.R. train service between Guichon and Colebrook, B.C.

30,206. Oct. 11.—Dismissing complaint of White & Co., Hamilton, Ont., against demurrage charged under rule 5 of Canadian Car Demurrage rules on two cars of potatoes delayed in loading at Utopia, Ont.

30,207. Oct. 11.—Authorizing C.P.R. to rebuild bridge 116.88 over Echo Lake, Thessalon Subdivision, Algoma District, Ont.

30,208. Oct. 12.—Authorizing G.T.R. to rebuild overhead bridge K.E. 43.64 carrying McNab St., Hamilton, Ont., over its tracks.

30,209. Oct. 11.—Amending order 30,189, Oct. 6, re Canadian National Rys. stopping trains 5 and 6 at Richmond, Ont., by striking out the words "on flag."

30,210. Oct. 12.—Ordering Grand Trunk Pacific Ry. to enlarge station and waiting room, install team track and cut away bank west of station at Hazelton, B.C.

30,211. Oct. 12.—Amending order 30,115, Sept. 20, re C.P.R. diversion of road allowance in n.e. ¼ Sec. 22, Tp. 13 ,Range 22, west principal meridian, mile 16.04 Miniota Subdivision, Man.

30,212. Oct. 12.—Approving location of portion of C.P.R. Moose Jaw Southwesterly Branch,, Assiniboia to Consul, mile 57.5 to 65.22, and authorizing crossing of certain highways.

30,213. Oct. 13.—Ordering Atlantic, Quebec & Western Ry. to make ditch along center of P. Tennier's land, Little Pabos, Que., 18 in. deep and 2 ft. wide from culvert under track to water course along his property.

30,214. Oct. 13.—Extending for two months time for installation of automatic bell at C.P.R. crossing about a mile north of Guelph, Ont.

30,215. Oct. 13.—Authorizing Saskatcbewan Highways Department to build highway crossing in n.w. ¼ Sec. 24, Tp. 36, Range 8, west 3rd meridian.

30,216. Oct. 12.—Approving agreement between Bell Telephone Co. and Ennismore Tp., Ont.

30,217, to 30,220. Oct. 15.—Extending for two months time within which St. Thomas Municipal Ry. may operate its one-man operated cars over the Pere Marquette Rd. on Wilson Ave., and over London & Port Stanley Ry. on Elm, Wellington and Talbot Sts., St. Thomas, Ont.

30,221. Oct. 14.—Authorizing C.P.R. to build two spurs for Dominion Construction Co. Ltd., and Ramsay, at mile 109.5, Winchester Subdivision, Ont.

30,222. Oct. 14.—Approving revised route map of general location of Interprovincial & James Bay Ry. (C.P.R.) from terminus of its line already built, at mile 10, to mile 70, near Riviere des Quinze, Ont.

30,223. Oct. 15.—Authorizing C.P.R. to use bridge 3.1 over Assiniboine River, at St. James, Man.

30,224. Oct. 15.—Authorizing C.P.R. to rebuild bridges 24.0 and 24.1, over Mississippi River, at Almonte, Ont.

30,225. Oct. 15.—Ordering Grand Trunk Pacific Ry., to grade to tie level, a driveway along commercial track, about 14 ft. wide, suitable for wagon traffic and long enough so that 3 cars at a time may be driven alongside and loaded; a driveway access to be made thereto.

30,226. Oct. 14.—Authorizing C.P.R. to build five spurs for Kipawa Co., Gordon Creek, Ont.

30,227. Oct. 15.—Authorizing Canadian Northern Quebec Ry. to cross highway in lots 242 and 243, St. Ursule Parish, Que.

30,228. Oct. 15.—Amending order 28,071 to provide that Toronto Terminals Ry. Co. be authorized to lay its conduits containing pressure steam pipes across Bay, Yonge and Scott Sts., along and across Esplanade St., between point west of Yonge St. and point east of Scott St., Toronto.

30,229. Oct. 15.—Approving relocation of G. T.R. across Muskoka Road, David, James, First and Philip Sts., Gravenhurst, Ont.

30,230. Oct. 15.—Extending to Dec. 31, time within which C.P.R. may complete spur for Northwestern Milling & Export Co., Moosomin, Sask.

## Quebec & Saguenay Railway taken over by Dominion Government.

The Quebec & Saguenay Ry., which extends from St. Joachim to Murray Bay, Que., 63 miles, has been taken over for operation as part of the Canadian National Rys. Construction of the line was started in 1911, but owing to financial difficulties work was suspended. After two or three years of negotiations, the Dominion Government in 1916 took power to acquire the line as a branch line for the Canadian Government Rys., the value to be settled by the Exchequer Court, the total price, however, not to exceed $4,000,000. A contract was let to M. J. O'Brien and H. Doheny, who had been engaged in the construction of the line from the start, to complete the work, Gordon Grant being put in charge as Chief Engineer for the Government. After some delay the purchase price was fixed, and finally paid over, but while the line has been completed and has been operated for nearly two years by the contractors, it was only finally inspected and taken over for operation by the Canadian National Rys. Oct. 8.

Connection is obtained with Quebec over the Quebec Ry., Light & Power Co.'s line. Heretofore a service of three trains a week in each direction was provided, but the Canadian National Rys. is giving a daily train service in each direction.

The Q. & S. Ry. has been designated as the Murray Bay Subdivision, Saguenay Division, Quebec District, C.N.R., which is under the jurisdiction of J. E. Morazain, General Superintendent. The following district officers also have jurisdiction over the Murray Bay Subdivision: C. H. N. Connell, District Engineer; H. W. Sharpe, Master Mechanic; E. G. Theobald, District Car Foreman. The jurisdictions of the following Saguenay Division officers have been extended over the Murray Bay Subdivision:—R. Colclough, Superintendent; L. St. Oge, Assistant Superintendent; L. C. Dupuis, Division Engineer; J. C. Riddock, Bridge and Building Master; H. B. Cassidy, Roadmaster; J. L. Alain, Chief Dispatcher; J. M. Kerr, Assistant Master Mechanic.

**Russian Railway Material at Coquitlam.**—A Vancouver press report states that about 30,000 tons of railway material ordered by Russia, and lying in the C.P.R. yards at Coquitlam, B.C., is about to be sold by instruction of the British Government, on whose credit the orders were placed. When the Russian Imperial Government was overthrown, goods awaiting shipment were held up pending developments.

The C.P.R. Social and Athletic Club of Vancouver, B.C., is reported to have elected the following officers:—Honorary President, F. W. Peters; Honorary Vice Presidents, W. F. Salsbury, H. J. Cambie, C. A. Cotterell; President, J. I. MacKay; Vice President, J. T. Brooks; Secretary, A. E. Tennant; Treasurer, A. J. Calderhead.

# Canadian National Railways Construction, Betterments, Etc.

Sydney Terminals.—The Dominion Parliament last session voted the Public Works Department $100,000 on account for a terminal wharf at Sydney, N.S. Nothing has been done with this appropriation, it being stated that the delay has been caused by the C.N.R. management having more comprehensive plans for terminal improvements there. When at Sydney on Sept. 30, President D. B. Hanna discussed the matter with a delegation of citizens. On Oct. 6, Mr. Hanna telegraphed J. C. Douglas, M.P., Glace Bay, as follows: "It is the opinion and was so expressed by our board of management when at Sydney that the dock should be built by the railway, as it is our belief, from information that has been given us from time to time by representative wholesale houses, that larger business could be done, particularly in coast water trade, if proper dock facilities were provided. We therefore expressed to committee which we met that if the vote of $100,000 which was to be expended by Public Works Department was transferred to us, we would undertake to use it in the building of a dock along the lines of plan laid down by our engineers some time ago. Will be very glad, therefore, if you will see Minister of Public Works, and if he is agreeable to the transfer, we will immediately submit our recommendation to the Minister of Railways and sub-committee of Privy Council, recommending that work be proceeded with under our management at earliest date possible. Our Board is of opinion that such dock, in connection with railway operation, would add substantially to revenue of railway."

The Dominion Public Works Department advised Canadian Railway and Marine World Oct. 14 that plans and specifications for the Sydney wharf had been prepared and that tenders would probably be invited early in November.

St. John Station.—We are advised that the debris of the old train shed at St. John, N.B., which fell down during the past summer, has been removed and that two temporary wooden umbrella roofs, being extensions of the existing roofs, have been erected in place thereof. These temporary roofs are about 500 ft. long by 17 ft. wide.

St. John Grain Elevator.—The Cyclone Blow Pipe Co., Port Arthur, Ont., has been given a contract for the manufacture, delivery and installation of a dust collector system for the grain elevator at St. John, N.B.

Chaudiere Jct. Coaling Plant.—Tenders were received to Oct. 23 for the construction of a 350 ton mechanical coaling plant at Chaudiere Jct., Que.

Nipigon Subdivision Bridges. — The Board of Railway Commissioners has approved of certain works, consisting of a diversion of waters at Orient Bay, Ont., and the filling in of two bridges at mile 43.67, Nipigon Subdivision, Ont.

Humboldt Revision.—The Board of Railway Commissioners has approved of revised location of the Canadian Northern Ry. through Victoria Park, Humboldt, Sask., mile 53.09 to 53.62, and has authorized the construction of the line across six streets.

Borden Northeasterly Branch. — The Board of Railway Commissioners has approved of route map and general location of a branch line frm Borden, Sask., northerly, mile 0 to 51.6. Borden is a station on the Canadian Northern Ry. main line, 521 miles from Winnipeg, and 305 miles from Edmonton, Alta.

Hanna, Northerly and Westerly. — A press report states that an engineering party has been in the field for some time making surveys northerly and westerly from Hanna, Alta.

Rosebud Valley Diversion.—A press report from Calgary, Alta., Oct. 8, reports progress being made on the diversion and improvements in the Rosebud Creek valley, on the line between Munson Jct. and Calgary. The report refers particularly to the clearing away of a hill, 60 ft. high, on the route of the cut off, by the setting off of a large quantity of explosive charges, on that date. Details of the work were given in Canadian Railway and Marine World, Mar. 1919, pg. 128; April, 1919, pg. 192, and Oct., 1919, pg. 535.

Kamloops, Vernon, Kelowna, Lumby Branch.—The Board of Railway Commissioners has approved of revised location plans for this branch as follows:—Between mile 63 and 65 east from Kamloops Jct.; from mile 11.5 to 14.3 south from Vernon, and from mile 9.6 to 12 on the Lumby branch. (Oct., pg. 552.)

## Grain in Store at Elevators.

Grain in store at public terminal elevators, interior terminal elevators, country elevators in Western Division, and public elevators in east, also at U.S. Atlantic seaboard ports. Prepared by the Dominion Bureau of Statistics, Internal Trade Division.

| Week ended Oct. 8th, 1920: | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William | | | | | | |
| C.P.R. | 584,310 | 30,509 | 98,105 | ..... | 94,862 | 807,786 |
| Consolidated Elevator Co. | 981,558 | 31,954 | 22,924 | 45,079 | 564 | 1,082,079 |
| Ogilvie Flour Mills Co. | 403,981 | 26,472 | 79,995 | ..... | 13,202 | 523,650 |
| Western Terminal Elevator Co. | 601,629 | 35,881 | 13,496 | 16,017 | 4,100 | 671,123 |
| G. T. Pacific | 273,780 | 86,601 | 28,441 | 24,112 | 8,072 | 421,006 |
| Grain Growers' Grain Co. | 871,328 | 205,854 | 140,703 | ..... | 51,268 | 1,269,135 |
| Fort William Elevator Co. | 315,032 | 89,495 | 38,133 | 19,675 | 56,893 | 519,228 |
| Northwestern Elevator Co. | 343,348 | 46,135 | 109,103 | 44 | 1,134 | 499,764 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. | 779,772 | 174,777 | 114,974 | 927 | 15,102 | 1,085,552 |
| Sask. Co-op. Elevator Co. | 1,363,166 | 49,028 | 35,762 | 58,114 | 12,714 | 1,518,784 |
| Canadian Government Elevator | 315,899 | 108,248 | 22,644 | 93,500 | 7,044 | 547,335 |
| Davidson and Smith | 6,653 | 985 | 1,067 | ..... | 422 | 9,127 |
| Total Public Terminal Elevators | 6,840,456 | 885,939 | 705,347 | 257,468 | 265,377 | 8,954,587 |
| Total Private Terminal Elevators | 1,343,927 | 393,095 | 118,435 | 67,518 | 23,400 | 1,946,375 |
| Saskatoon: Can. Gov't Elevator | 10,714 | 8,517 | 181 | 1,654 | ..... | 21,066 |
| Moose Jaw: Can. Gov't Elevator | 107,907 | 31,485 | ..... | 1,253 | 5,554 | 146,199 |
| Calgary: Can. Gov't Elevator | 20,693 | 43,377 | 4,865 | 29 | 155 | 69,119 |
| Vancouver, B.C.: Can. Gov't Elevator | 858 | 594 | ..... | 8,828 | ..... | 10,280 |
| *Total Interior Terminal Elevators | 140,172 | 83,973 | 5,046 | 11,764 | 5,709 | 246,664 |
| Midland— | | | | | | |
| Aberdeen Elevator Co. | 2,100 | ..... | ..... | ..... | ..... | 2,100 |
| Port McNicoll | 436,346 | 200 | ..... | ..... | ..... | 436,546 |
| Goderich— | | | | | | |
| Elevator and Transit Co. | 56,894 | 2,699 | ..... | ..... | ..... | 59,593 |
| West Can. Flour Mills Co., Ltd. | 49,246 | ..... | ..... | ..... | ..... | 49,246 |
| Toronto: Campbell Flour Mills Co. | 5,739 | 16,078 | 7,828 | ..... | ..... | 29,645 |
| Kingston— | | | | | | |
| Commercial Elevator Co. | 5,145 | 6,173 | 3,161 | ..... | ..... | 14,479 |
| Port Colborne— | | | | | | |
| Dom. Gov't Elevator | 578,126 | ..... | ..... | ..... | ..... | 578,126 |
| *Maple Leaf Milling Co., Ltd. | 149,920 | ..... | ..... | ..... | ..... | 149,920 |
| Harbor Commissioners No. 1 and 2 | 3,572,099 | 355,640 | 291,454 | 7,256 | ..... | 4,226,449 |
| Montreal Warehousing Co. | 949,217 | ..... | ..... | ..... | ..... | 949,217 |
| Ogilvie Flour Mills Co. | 46,974 | ..... | ..... | ..... | ..... | 46,794 |
| Quebec Harbor Commissioners | 2,629 | 15,427 | ..... | ..... | ..... | 18,056 |
| Total Public Elevators | 5,854,435 | 396,217 | 302,443 | 7,256 | ..... | 6,560,351 |
| *Total Country Elevators | | | | | | |
| Total U.S. Atlantic Seaboard Ports | | | | | | |
| Baltimore, Md. | 109,050 | ..... | ..... | ..... | 12,316 | 121,366 |
| U.S. Atlantic Seaboard Ports— | 109,050 | ..... | ..... | ..... | 12,316 | 121,366 |
| Total Quantity in Store | 14,288,040 | 1,759,224 | 1,131,271 | 344,006 | 306,802 | 17,829,343 |

*Overshipped.

## Direct Cable Communication Between Great Britain and Canada.

The Secretary of the British Post Office issued a circular to British Chambers of Commerce, etc., recently, as follows:—"I am directed by the Postmaster General to draw the attention of your chamber to the fact that a state owned cable is now working between this country and Canada, and that telegrams for North America, the West Indies and Australia may be sent over it if handed in at the post office. It is the desire of His Majesty's Government that this cable, which is known as the Imperial cable, should be used mainly, if not exclusively, for traffic between this country and British Dominions. It is well adapted for this purpose, as it works direct between the Central Telegraph Office, London, and Halifax, N.S., where connection is made with Canadian land lines as well as with a British cable to the West Indies. Australasian traffic is sent by a special line direct from Halifax to Bamfield (Vancouver Island), and thence by the state owned Pacific cable to Australia and New Zealand. A telegram from London to Australia thus reaches the Pacific cable with only one retransmission (at Halifax).

"The rates for ordinary telegrams sent by the Imperial cable are the same as those by other Atlantic cables; but the Imperial route is at present the only Atlantic route on which the deferred service has been restored. Deferred telegrams can be sent by the Imperial cable at the following rates per word: Canada —Eastern Provinces, 4½d.; Manitoba, 7d.; western Provinces (excluding the more inaccessible parts of British Columbia and the Yukon), 7½d.; Jamaica and Bermuda, 1s. 3d.; Australia, 1s. 6d.; New Zealand, 1s. 4d. A deferred service is in operation at the same rates in the reverse direction, for telegrams routed for transmission by the Imperial cable —or, in the case of Australasia, by the Pacific cable."

# Telegraph, Telephone and Cable Matters.

The British Radio Corporation of America Ltd. has been incorporated under the Dominion Companies Act, with $10,000 authorized capital and office at Montreal, to manufacture and deal in wireless telegraph and telephone apparatus.

A London, Ont., press dispatch of Oct. 19 states that the Direct United States Cable Co.'s shareholders have accepted the British Government's offer of £570,000 for the company's cables and equipment. It is said that the shareholders will receive about £6 a share.

The Manitoba Government telephones show a deficit on operation for the current year of about $200,000 and the Premier is reported to have stated at Winnipeg, Oct. 15, that this was due to increased wages and operating expenses, and that an increase of rates will be necessary.

The British Columbia Forestry Department is reported to have placed a contract with the Canadian Marconi Co. for the erection of 4 land stations and 5 launch equipments for use in forestry fire protection work. It is stated that the central station at Vancouver, and the equipment of one of the boats, have already been completed.

The Great North Western Telegraph Co. has opened offices at Flamand, Que.; Colborne, Grafton, James Bay Jct., Thor Lake, Ont.; and Lucky Lake, Sask., and has closed its offices at Kiskisink Club House, Little Metis Beach, Manoir Richelieu (Pointe au Pic), and Pointe au Pic, Que.; Clifton House, Niagara Falls, Lake Joseph, Muskoka Lakes, Royal Muskoka Hotel and Sparrow Lake, Ont.; East Selkirk, Grand Beach, Scanterbury and Victoria Beach, Man.; and Alberta Beach, Alta.

Amongst the interesting items of the war period, which are now being made public, is one relating to cable connections between Canada and Great Britain, reported recently by F. J. Brown, C.B.E., Assistant Secretary to the British Postmaster General, and one of the delegates at Washington, D.C., to consider the final allocation of the cables owned formerly by Germany. He is reported to have stated that the two cables formerly connecting Germany with the U.S., were cut by the British Navy, and diverted, one to France and the other to operate between Great Britain and Canada. The latter was cut about 30 miles from Penzance, on the southwest coast of England, and again in the Atlantic Ocean, about 600 miles from New York, the ends being connected to other cables, giving a direct cable between London, Eng., and Halifax, N.S. This cable was utilized entirely for Government business during the war, but is now open for general commercial business, and is being operated by the Imperial Cable Co. in conjunction with the C.P.R. Telegraphs.

**United States Radio Stations** are steadily growing in number. It is stated that the government shore radio stations number 135, of which 88 are in continental United States, 20 in Alaska, 19 in the Philippines, 3 in the Canal Zone, 2 in Hawaii, and one each in Porto Rico, Guam and Samoa. The government ship stations total 470.

**Cable Construction.**—Despite the great development of wireless telegraphy, submarine cables are still being constructed, and with the great increase in commercial and newspaper messages are still regarded as a necessary alternative to wireless, and by no means obsolete or likely to fall into disuse. In fact, a new cable to the Far East from Great Britain through the Mediterranean, involving a length of 7,000 miles, is being laid section by section as ready, and the possibility of a new cable from Vancouver to Fanning Island is being discussed.

**Britain's Wireless Chain.**—The long-contemplated plan to connect all parts of the British Empire by wireless telegraph has received fresh impetus through the issue of a report of the committee appointed by the government to formulate such a scheme. The committee's report, which is unanimous, recommends that the Empire shall be linked up wirelessly by stages of about 2,000 miles each and that the system employed shall be that of the generation of radio-telegraphic energy by vacuum tubes. The scheme contemplates two main chains of wireless, one receiving dispatches from Africa, and the other from Asia and Australasia, both with Cairo as their first station. For the first link of the first chain a connection would be made on the Poulsen arc system between Oxford and Cairo, which the Post Office Department has nearly completed.

**High Speed Wireless.**—Manual operation is apparently doomed as far as long distance radio traffic is concerned. The ever increasing cost of high powered stations makes it necessary to handle a far greater volume of traffic than can be handled by the usual method. Thus some of the present transatlantic stations are operating at 50 to 100 words a minute by means of automatic transmitters and receivers. In England experiments have been going on for some time with automatic transmitters capable of a normal speed of 450 words a minute, and even 1,000 words a minute during demonstrations. The recording is effected by means of a special electro chemical apparatus, which consists of a specially prepared paper drawn between a roller and a marking pointer. The arrival of a signal causes a current to pass through the paper, producing discoloration.

**France's Wireless Plans.**—A dispatch from Paris states that the French Government has announced plans for an elaborate wireless system whose center will be in Paris and which will cover Europe, Asia, Africa and South America and connect with North America. If this system, part of which is already in existence, is in part of which is already in existence, is integrally applied as now proposed, France's wireless communications throughout the world will be able to rival with Great Britain's cable communications. According to the details made public at a recent meeting at Rennes, wireless communication was established with Hungary May 20, and will soon be opened with Belgrade. For commercial communication with the United States there is a station at Doual, near Lyons, in addition to the Lafayette station near Bordeaux. Between France and its colonies there will be stations with a range of 7,500 miles at Saigon and at Tahiti. Stations with a radius of at least 4,375 miles will be established at Djiboutil, Antananarivo, Noumeau, and French Guinea. In Africa the system will include stations at Saida and Bamako, which will take care of the traffic between Paris, Algeria and West Africa; another station in Senegal, near Dakar, and finally that of Brazzaville.

## Among the Express Companies.

Among the many interesting incidents of the war, which can be contemplated with considerable pride by those who were concerned, some details of which have been made public, the transportation of bullion safely across both the Atlantic and Pacific Oceans, occupies a position of some prominence. V. G. R. Vickers, formerly in charge of the Money Order Department, Dominion Ex. Co., and now Vice President, The Holden Co., Montreal, is the authority for the information that during the war, $700,000,000 in gold was received at Halifax, N.S., and on the Pacific coast $262,000,000 of Russian gold was landed and shipped to Ottawa. The Russian shipments came in at different times, the smallest shipment being $40,000,000 in gold bullion, while the largest was $98,000,000, which took an all steel train of 13 cars to transport it from Vancouver to Ottawa. These shipments were usually taken from Japanese warships at sea by H.M.C.S. Rainbow, which put to sea under sealed orders and steamed in various directions to deceive any enemy craft as to her possible destination or object, then she made for some small cove on the coast, as remote from shipping as possible, and uninhabited for preference, where the bullion ship would be met. The ships would warp alongside each other, and the cases would be transferred through chutes slung between the ships. All this work was done under the supervision of Dominion Government and Dominion Ex. Co.'s officials. The Rainbow would then proceed to Vancouver by devious routes and get alongside the C.P.R. wharf in darkness, and transfer her cargo to a waiting train. These trains were amply guarded by long service Dominion Ex. Co.'s men and C.P.R. special police, heavily armed, and the train was equipped with telephone communication throughout. On one occasion after the enemy menace on the Pacific coast had been reduced to a practical nullity, the transfer of bullion took place in Esquimalt harbor, and at another time, two Japanese warships steamed into Vancouver in broad daylight, and the bullion was transferred to the train direct. At Halifax, bullion was received in the harbor direct from British cruisers, which ran alongside the Naval Dockyard piers, the cases being discharged into wagons under a guard of marines, who walked alongside the wagons to the waiting train at the south gate of the yard. No traffic was permitted near the bullion train, and guards were placed at every possible point. Some shipments were sent to New York, and others to Ottawa.

### Canadian Express Co.

M. J. Dundas, general chairman of express employes of the Canadian Brotherhood of Railway Employes, announced in Ottawa, Oct. 19, that the Canadian Ex. Co. had been served with a notice by its employes asking for increased wages. It is stated that the employes are asking for the same proportionate raise as has been granted to railway employes.

### Canadian National Express Co.

Offices have been opened at Orleans, Ont., Notre Dame des Lourdes, Libeau, Man.; the office at St. Proser, Que., has been abandoned and the agent transferred to St. Proser Jct., Que., and the following offices have been closed:—Norway Bay, Que., Lake Joseph and Balla Park, Ont., and Cardiff Jct., Alta.

# Electric Railway Department

## Proposed Purchase of Ottawa Electric Railway.

The Ottawa City Council had under consideration on Oct. 5 a recommendation from the board of control that the ratepayers be asked to vote at the municipal elections on Jan. 1 on the question "Are you in favor of the city applying for legislation enabling it to borrow money, without a further vote of the electors, to acquire the property and assets of the Ottawa Electric Ry. under the agreement between the city and the company, at a price to be fixed by arbitration, as provided for by the agreement. And in the event of the question being answered in the affirmative, that legislation be applied for conferring the necessary borrowing powers. The Board of control further recommended that the council give it authority to obtain a valuation of the Ottawa Electric Ry. before the vote is taken.

After a lengthened discussion, the council decided not to adopt the recommendation of the board of control for an immediate valuation of the company's property, but agreed to the taking of a vote on the lines suggested, and adopted a suggestion of Alderman Ellis for taking a vote on the same day asking if the ratepayers are in favor of application being made for legislation to provide that the city will not be compelled to acquire the property and assets of the Ottawa Electric Ry., pursuant to the agreement between the city and the railway company, unless a bylaw setting out the amount of the arbitration award shall first be submitted to and receive the assent of the electors entitled to vote on money bylaws, or for such plebiscite as in the opinion of the city solicitor will carry out the intention of this motion.

The Ontario Legislature passed an act at its last session authorizing the Ottawa City Council to appoint a commission with the title of the Ottawa City Transportation Commission; such commission to be a body corporate, and to consist of three resident electors of Ottawa, appointed by the City Council upon the nomination of the Board of Contral. The first appointment to the Commission shall be for one, two and three years respectively, so that annually thereafter one member shall be elected for the full term of three years. A member of the Commission is eligible for reappointment, but no member of the City Council may be appointed a commissioner. A bylaw may be passed providing for the payment of salaries to the commissioners.

Upon the acquisition by the city of the Ottawa Electric Ry. Co.'s property used in connection with the working thereof, under the terms of the agreement of June 28, 1893, the control and management thereof, and of all extensions of and additions thereto shall be vested in the Commission, which shall have all the powers conferred upon or exercisable by the City Council, except the power to borrow money upon debentures or by way of a charge upon the plant or property of the railway.

The Commission is given power to complete, alter, extend, maintain and operate a railway, tramway, and any other system of local transportation operated otherwise than by steam, in Ottawa and Hull, and in Gloucester and Nepean Tps., as may be authorized, but no rights shall be exercised in the Province of Quebec until authorized by the Dominion Parliament or the Quebec Legislature. The Commission may buy rolling stock, plant and other equipment necessary for its lines; carry passengers and freight; appoint workmen, officers, etc., set out their duties and enter into agreements with the same for periods of not exceeding three years at a time; provide a pension fund for its officers and employes; and make agreements with banks for temporary advances.

The Commission may regulate and fix the fares and tolls so that they will produce a sufficient revenue for the operation and maintenance of the railway, provide for renewals and replacements, and for the payment of principal and interest of all outstanding debentures, encumbrances, fixed and floating liabilities. Should the revenue in any one year fall short of meeting these obligations, the Commission shall increase the fare for the ensuing year to such an extent as will wipe off the deficit and provide sufficient to meet the estimated expenditures for the ensuing year. In the event of the accounts of any year showing a surplus over all expenditures, it shall remain at the disposal of the Commission, to be expended by it for the purposes authorized by the act. The financial year is to end Oct. 31, and the Commission is to present report, with an audited statement of accounts, to the City Council on or before Dec. 15; and on or before Feb. 15 is to present to the Council an estimate of the revenues and expenditures for the then current year. The money necessary to pay principal and interest on debentures is to be paid over at due times by the Commission to the City Council. When debentures are required for the purposes of the Commission, the Council, by a two thirds vote may pass a bylaw to provide the same, without obtaining the ratepayers' consent, but in the event of such bylaw not obtaining a two thirds vote, or in the event of the Council failing to vote a bylaw within six weeks of receiving the Commission's application, the Commission shall submit a question to the ratepayers whether such debentures should be issued, and should the electors assent thereto the Council shall, within a month thereafter pass the necessary bylaw.

The Council may, by bylaw, authorize the Commission to have charge of and supervision over the negotiations for acquiring the Ottawa Electric Ry. The Council is authorized to acquire the O.E. Ry. property outside the province of Ontario, but such agreement shall not be binding on the City unless, within three months, it shall have been approved by the Ontario Railway and Municipal Board. The Council is authorized to borrow money upon debentures, after obtaining the ratepayers assent, for the purpose of paying for the property taken over from the Ottawa Electric Ry., in Ottawa, and in the adjoining municipalities, together with the costs of the Council in the valuation proceedings. Provision is made for the payment of such price by the City's debentures, and the Commission may assume outstanding mortgages and liabilities of the company in connection with the purchase. The value of the lines outside Ottawa, situated in Ontario, is to be determined by a board of arbitration.

### Canadian Electric Railway Association.

**Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.**

**Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.**

**President, A. Gaboury, Superintendent, Montreal Tramways Co.**

**Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.**

**Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.**

**Executive Committee, The President, Vice President, and F. D. Burpee, Manager, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.**

**Official Organ—Canadian Railway and Marine World, Toronto.**

## Electric Railway Connection with Toronto Island.

A press report states that the Dominion Minister of Public Works has advised the Mayor of Toronto that directions have been given to the Department's District Engineer at Toronto to report upon the advisability of building a tunnel under the western gap, Toronto harbor, so as to permit the passing of street cars from the city to Toronto Island, as a substitute for the proposed bascule bridge over the gap.

The Assistant City Engineer is credited with saying:—In view of the fact that it is proposed to dredge the channel for ocean going vessels, the tunnel would have to be considerably over 30 ft. below water level. It would depend upon the nature of the soil as to how deep the tunnelling would be. That under the bay, for the water supply, is 200 ft. deep at the island side. The approaches would have to be at least 1,000 ft., to give the proper grades at the two ends of the tunnel.

**Winnipeg Electric Ry. Wages Payments:**—For the first eight months of this year the gross earnings from operation of the Winnipeg Electric Ry. totalled $3,406,068.76. Out of these receipts the company paid in wages and salaries to its employes (exclusive of managerial and office expenses), $2,985,-031.88. This means that 59.2% of the company's gross takings, or in other words, 59.2c. out of every dollar the company received from January to August, was paid out again to more than 1,300 workers in the company's employ.

# Montreal Tramways Co's Annual Report, Etc.

Following are extracts from the report for the year ended June 30:—

| | |
|---|---|
| **Revenue:** | |
| Allowance from contract | $2,317,444.80 |
| Other revenue | 58,134.78 |
| Gross revenue | $2,375,579.58 |
| **Expenses:** | |
| Interest on bonds | $1,044,169.20 |
| Interest on debentures | 850,000.00 |
| Other expenses | 28,902.25 |
| Total expenses | $1,923,071.45 |
| Net income | $ 452,508.13 |
| Less dividends of 2½% for quarters ended Dec. 31, 1919, Mar. 31, 1920, June 30, 1920 | 290,550.00 |
| Surplus for the year | $ 161,958.13 |
| Add surplus at June 30, 1919 | 1,039,817.86 |
| Total . . | $1,201,775.99 |
| From which has been appropriated for: | |
| Donation to Mrs. Robertson | $ 5,000.00 |
| Deferred dividends on common stock: 2½% for quarters ended June 30, Sept. 30, and Dec. 31, 1918 . . | 255,600.75 |
| Total . . | 260,600.75 |
| General surplus | $ 941,175.24 |

The gross revenue for the year was $2,375,579.58, and the expenses $1,923,-071.45, leaving a net income of $452,-508.13, from which there have been declared three quarterly dividends of 2½% each, amounting to $290,550.00, leaving a balance carried to the credit of the general surplus account of $161,958.13, which added to $1,039,817.86 at the credit of this account in 1919 makes a total of $1,201,775.99, from which there has been appropriated $260,600.75, of which $255,-600.75 was on account of deferred dividends paid during the year, and $5,000 voted by your directors to the widow of one of the company's oldest and most valued officials, Donald S. Robertson, who died during the past year; leaving a balance at the credit of the general surplus account of $941,175.24.

Your directors desire to point out that from the coming into force of the contract, viz., Feb. 10, 1918, to June 30, 1920, the revenue has not been sufficient to meet the requirements of the contract, the shortage being $1,728,811.94, of which $1,192,694.05 is papable to the City of Montreal, when received; and $223,546.80, which should be placed to the credit of contingent reserve fund under the terms of the contract. The amounts to be received by the company from revenue for account of the City of Montreal of $1,-192,694.05, and for the contingent reserve fund of $223,546.80, are only payable when the revenue received by the company, under the terms of the contract, is sufficient to pay these charges, after payment of all prior charges. These amounts have not been brought into the statement of assets and liabilities, but are shown on statement of operations under new contract.

Under the terms of the contract the company has to provide from its own funds a guarantee fund amounting to $500,000, in amounts of not less than $100,000 a year. Your directors beg to report that $200,000 is on deposit with a trust company, in accordance with the provisions of the contract.

During the year the company resumed paying its usual quarterly dividends on its common stock at the rate of 2½% per quarter, starting from the quarter ended Dec. 31, 1919; and also paid the quarterly dividend in arrears for the quarters ended June 30, Sept. 30 and Dec. 31, 1918, leaving three quarterly dividends still in arrears.

The employes submitted a demand for a general increase in wages, amounting to about $3,500,000 a year, which the company declined to accept. The matter was referred to a board of conciliation, appointed under the Industrial Disputes Act of 1907, who unanimously agreed to grant them an increase of approximately $800,000, which was accepted.

The Tramways Commission, after consideration of the operations of the past year, and after taking into consideration the requirements for the forthcoming year, decided on an increase in fares, effective Sept. 1, 1920.

The company commenced during the course of the year the construction of a modern sub-station at Cote St., and has placed orders for all the equipment thereof. It is hoped to have the same in operation during the coming year.

**Statement of Operations under New Contract.**

| | Feb. 10, 1918 to June 30, 1919 | Year ended June 30, 1920 | Feb. 10, 1918, to June 30, 1920 |
|---|---|---|---|
| Gross earnings | $11,572,210.48 | $10,782,470.09 | $22,354,680.57 |
| Operating expenses and taxes | 6,640,715.22 | 5,849,911.89 | 12,490,627.11 |
| Operating profit | 45,927.82 | 46,606.68 | 92,534.50 |
| Maintenance and renewals | 2,098,120.81 | 2,190,557.43 | 4,288,678.24 |
| Total . . | 8,784,763.85 | 8,087,076.00 | 16,871,839.85 |
| Balance . . | 2,787,446.63 | 2,695,394.09 | 5,482,840.72 |
| Allowances due company:— | | | |
| 6% on capital value | 3,018,224.42 | 2,177,177.70 | 5,195,402.12 |
| 6% on working capital | 40,645.44 | 23,832.96 | 64,478.40 |
| 7% on additions to capital | 32,919.35 | 69,827.46 | 102,746.81 |
| Expense of financing | 251,353.01 | 181,431.47 | 432,784.48 |
| Total . . | 3,343,142.22 | 2,452,269.59 | 5,795,411.81 |
| Balance debit | 555,596.59 | *243,124.50 | 312,571.09 |
| Payable when earned:— | | | |
| City of Montreal rental | 692,694.05 | 500,000.00 | 1,192,694.05 |
| Contingent reserve | 115,722.10 | 107,824.70 | 223,546.80 |
| Total . . | 808,416.15 | 607,824.70 | 1,416,240.85 |
| Deficit . . | $1,364,111.74 | $364,700.20 | $1,728,811.94 |

*Surplus.

The annual meeting was held Sept. 28. The directors and officers, who were re-elected, were as follows:—E. A. Robert, President; J. W. McConnell, Vice President; Hon. G. G. Foster, K.C., Vice President; W. C. Finley, P. J. McIntosh, W. G. Ross, J. M. McIntyre, Hon. J. M. Wilson and Hon. L. C. Webster. Lt. Col. J. E. Hutcheson is General Manager.

The Montreal Tramways Commission has also issued its report for the year ended June 30, stating it had 226 meetings during the year. Following are extracts from the report.

**General Statistics.**

| | |
|---|---|
| Total tracks ..... miles | 264.60 |
| Tracks in operation ..... miles | 246.03 |
| Gross receipts per mile of total tracks | $40,750.07 |
| Gross receipts per mile of tracks in operation | 43,825.83 |
| Percentage of gross receipts devoted to operating expenses and taxes | 54.68% |
| Percentage of gross receipts devoted to maintenance and renewals | 20.32% |
| Percentage of gross receipts devoted to operating expenses | 75.00% |
| Passengers, total number of | 255,685,986 |
| Revenue passengers | 191,941,835 |
| Transfers | 63,744,151 |
| Percentage of transfers to number of revenue passengers | 33.21% |
| Gross receipts per passenger, total | 4.22c. |
| Gross receipts per revenue passenger | 5.62c. |
| Receipts per passenger (transportation of passengers only) | 5.51c. |
| Total operating expenses and taxes per revenue passenger | 4.21c. |

In referring to the deficit on the year's operations, the Commission says:—"The contract has not foreseen the existence of deficits. In order to avoid an excessive rate of fare, the interested parties have agreed not to exact immediately the payment of the amounts due them. The company's receipts must be applied in the following order to the payment of: 1. Operating expenses and taxes. 2. Maintenance and renewals fund. 3. Remuneration of capital value. 4. City rental. 5. Contingent reserve fund.

"At the end of the fiscal period of operation (Feb. 10, 1918, to June 30, 1919), the gross receipts could only meet the operating expenses and taxes, the maintenance and renewals expenses and a part of the remuneration on capital value ($2,787,446.63, out of $3,030,208.66). The accompanying statement shows that at the end of the past year the gross receipts were ufficient to pay not only the operating expenses and taxes and the maintenance and renewals fund, but the whole of the interest on capital value, also on addition to capital, and working capital as well as a part of the financing expense ($120,212.39 out of $432,784.48). There is every indication that, at the end of this year, the situation will be further improved so that the City of Montreal will receive at least a portion on the $500,000 annual rental."

## Answers to Electric Railway Questions.

The following are among answers to question sent to the American Electric Railway Association's question box:—

Near or Far Side Stops.—Do you use the near side or far side stop or a combination of both? Is this required by ordinance or other legal measure? In view of the increase in vehicular traffic, which do you now recommend and what are your reasons for same?

A. Gaboury, Superintendent, Montreal Tramways Co., Montreal: (1) Near side stop is used in general, though far side is used in a few instances, where stop is at the foot of a hill. Near side is much preferable in order to facilitate movement of crossing traffic. Law obliges vehicles to stop behind a standing street car, therefore in case of far side stop at congested corners vehicles behind car would block crossing traffic. In case of far side stop at heavy traffic cross streets car would have to make near side top until crossing traffic had cleared. Near side stop tends to prevent accidents as car is under control ready to stop before reaching cross streets.

## The Toronto Railway's Future Management.

The Toronto Transportation Commission, which is arranging matters in connection with the taking over of the Toronto Ry., by the city, in 1921, has appointed H. H. Couzens, General Manager, Toronto Hydro Electric Commission, as General Manager, Toronto Transportation Commission, and has also made the following appointments:—

E. M. Ashworth, heretofore Assistant General Manager, and now acting General Manager, Toronto Hydro Electric Commission, is to be also acting Secretary, Toronto Transportation Commission.

I. S. Fairty, heretofore Assistant City Solicitor, to be Solicitor, Toronto Transportation Commission.

The Commission has also appointed R. C. Harris, City Commissioner of Works; E. L. Cousins, General Manager of the Harbor Commission; and F. A. Gaby, Chief Engineer of the Hydro Electric Power Commission of Ontario, in a consulting capacity, with a view to co-ordinating the interests which they represent and obtaining the benefit of their advice on the problems with which they are familiar.

The Toronto Transportation Commission, which, as stated in Canadian Railway and Marine World for September, consists of P. W. Ellis, wholesale jeweller, President Toronto Hydro Electric Commission and Chairman Queen Victoria Niagara Falls Park Commission, as Chairman; Fred. Miller, of Roger Miller & Sons, railway and harbor contractors, Toronto; and Geo. Wright, hotel proprietor, who is a member of the Toronto Hydro Electric Commission, was appointed under the authority of an act passed at the Ontario Legislature's last session, authorizing the Toronto City Council to pass a bylaw establishing a Commission under the title of the Toronto Transportation Commission, which shall be a body corporate. The Commission is to be composed of three resident ratepayers of Toronto, who shall hold office for three years, and until their successors are appointed, and shall be eligible for reappointment. No member of the City Council is eligible to be appointed a member of the Commission. Appointments to the Commission are to be made by the City Council, on the nomination of the Board of Control, or by a two thirds vote of the Council in the absence of such nomination. The members of the Commission are to be paid such salary as may be fixed by bylaw.

Upon the City Council acquiring the Toronto Ry. under the terms of the agreement, schedule A, chap. 99, Ontario statutes of 55 Victoria, it shall by bylaw transfer the control, maintenance and operation of the same to the Commission, and the Council may, by other bylaws transfer to the Commission the control, maintenance and operation of the civic railway lines, or authorize it to construct and operate tube and subway lines, and operate lines of motor busses. It shall be the duty of the Commission to consider generally all matters relating to local transportation in Toronto, to construct such new lines of street railway, and to provide such plant, equipment and other facilities as it may consider necessary to be constructed or provided, in anticipation of the taking over by the city of the Toronto Ry.

The Commission shall, in particular, but not so as to restrict its general powers and duties, have power to construct and operate new lines of street railway in addition to or in extension of existing lines; fix such tolls and fares so that its revenue shall be sufficient to make all transportation facilities under its control and management self sustaining, after providing for maintenance, renewals, depreciation and debt charges; and to make requisitions upon the City Council for all sums of money necessary to carry out its powers and duties. The Commission is to make an annual report to the City Council, and publish an audited balance sheet.

The City Council may pass bylaws, without submitting them to the ratepayers, to borrow money to acquire the Toronto Ry. under its agreement; to provide for such plant, equipment and other facilities as may be necessary to be provided in anticipation of the taking over of the railway, and to meet such other expenditures as may be necessary in making arrangements for the operation of the property when taken over; and to provide the Commission with money to construct new lines, and extensions of existing lines, to procure rolling stock, buildings, equipment, etc. The debentures issued for these purposes shall not be counted in ascertaining the limit of the city's borrowing powers for other purposes.

## The London Street Railway Situation.

The London, Ont., City Council's special street railway committee is reported to have decided, after a conference with a number of representative men, to recommend to the city council to submit five questions to a vote of the ratepayers, as follows:—

1. Cancellation of the London St. Ry. Co.'s franchise and purchase by the city at a price to be fixed by arbitration.
2. Purchase and operation on behalf of the city by the Hydro Electric Power Commission under hydro radial legislation.
3. Continuance of present ownership with operation by the Ontario Railway Board on a service at cost agreement.
4. Company ownership and operation, with a service at cost agreement.
5. Cancellation of the franchise, ejection of the company from the city streets and establishment of some other municipally owned transportation system, probably motor busses.

Further consideration was given to these questions by the committee on Sept. 29, and prior to the city council's meeting on Oct. 4, when the recommendations were to have come up, Sir Adam Beck is reported to have stated that a vote on the questions suggested would not settle anything, and further that he would not recommend, and the Legislature was not likely to pass, the legislation necessary to give the Hydro Electric Power Commission of Ontario authority to operate the railway for the people.

Suggestions are reported to have been made subsequently to have a vote taken on Jan. 1, as to the purchase of the railway, but up to the time of writing nothing had been settled.

A press report states that owing to the fact that no arrangement has been made between the London City Council and the London St. Ry. as to the various matters about which they differ, A. B. Ingram, Vice Chairman of the Ontario Railway and Municipal Board, having charge of the operation of the railway, has intimated that the Board does not intend to go on indefinitely with the management, and may relinquish control.

Employes of the London St. Ry. are, it is reported, taking steps to enforce a demand for an increase of wages from 48c. to 52c. an hour; and a press report of Oct. 13 stated that the city council's finance committee has asked the Ontario Railway and Municipal Board to forego payment of bond redemption charges, so that increased wages may be paid.

## Increases in Electric Railway Passenger Fares.

**British Columbia Electric Ry.** — The Victoria, B.C., City Council on Oct. 4 agreed to allow the company to increase its fare on city lines from 5c. to 6c., with six tickets for 35c., and school children's tickets 3c. each, all fares to carry transfer privileges. The company had asked for a 7c. fare, but A. T. Goward, Local Manager, wrote, stating that the increase to that amount would not be pressed and that the company's final offer was a 6c. fare with tickets, etc., as stated above. Heretofore the fare has been 5c. straight, with no transfer privileges or reduced rates for school children. The council also agreed to take steps to eliminate jitney competition. The company is to take over the maintenance of certain portions of the streets. The final details of the agreement are now worked out, and it is not anticipated that there will be much delay in putting the new rates into effect.

**Hull Electric Co.**—A letter from G. Gordon Gale, Vice President, Hull Electric Co., is reported to have been read at a meeting of the Hull, Que., City Council, Oct. 4, asking that the present agreement governing street car fares which has some years to run yet, be set aside and new rates based on the present cost of operation be made effective. In the letter Mr. Gale claims that since the agreement with the city was made about 26 years ago, an uninterrupted street car service has been provided. He also states that the same fares as charged in 1896 are still being charged, that in the meantime the wages of employes have increased 300%, and that the cost of materials for car repairs, track renewals, and repairs to pavements have increased in like manner, and further that during this long period, the company has been unable to make a profit.

**Saskatoon Municipal Ry.**—Cash fares on the Saskatoon, Sask., Municipal Ry. were advanced on Oct. 1 from 7c. to 10c., and unlimited tickets are now cold 4 tickets for 25c., instead of 6 for 35c. No change has been made in school children's tickets. Following is a comparison of the old and new rates:—

| | New. | Old. |
|---|---|---|
| Cash . . | 10c. | 7c. |
| Unlimited tickets | 4 for 25c. | 6 for 35c. |
| School children's tickets | 8 for 25c. | 8 for 25c. |

**Sudbury-Copper Cliff Suburban Electric Ry.**—A press report states that, on Oct. 1, the company put in operation a 5c. increase on the return fare between Sudbury and Copper Cliff, Ont., the new fare being 30c.

**Winnipeg Electric Ry.**—The Winnipeg City Council on Oct. 11 made an interim appropriation of $5,000 to carry on an appeal against the Manitoba Public Utilities Commissioner's order of Aug. 23 authorizing an increase of fares on the W. E. R., which went into effect Sept. 1.

## Why Winnipeg Electric Railway Asked Abolition of Workmen's Tickets.

The Winnipeg Electric Ry. has published the following statement in reference to the recent abolition of workmen's tickets:—"When we applied to the Manitoba Public Utilities Commission to readjust fares, we asked the Commission to abolish workmen's tickets for the following, among other reasons:—

"To relieve rush hour peak traffic. We found that because red tickets were cheaper than ordinary tickets, shoppers waited until red ticket hours to travel. The shopper load, coupled with the other rush hour traffic, accentuated the peak. It is well known that in order to take care of this peak traffic we have to maintain extra crews, and these extra crews had to be paid standby time; so we found ourselves in the position of giving a more expensive service in the rush hours and getting less for it.

"Sunday car service costs more than week day service. The reason for this is that we have to pay our motormen and conductors 5c. an hour more for the time they work on Sundays than on week days. It surely is not sound business to sell service on Sundays at a lower rate than we sell it for on week days, when it actually costs us more to supply it on Sundays than on week days.

"There was no justification for discrimination. Red tickets meant cheaper fares for those workers who happened to finish work earlier than another set of workers. Probably, when the street cars started operating in 1892 the laboring man received $1 a day. These workmen's tickets were designed to be used by the workers travelling to and from their work. But the $1 a day man is no longer with us, and we are all workers now. There is no justification for any particular class in the community being permitted to buy its street railway transportation at a lower rate than any other class. Some one has to pay for the service, and our contention is that the man who uses the cars should pay a fair price for the service he receives, and no one should get any special consideration."

## Electric Railway Employes' Wages, Working Conditions, Etc.

**British Columbia Electric Ry.** — Some time ago the employes applied for an increase in wages, the conductors and motormen asking for an increase from the existing rate of 60c. an hour to 75c. A press report of Oct. 5 stated that the company had offered increases varying from 1c. to 8¼c. an hour, according to the class of work engaged in. The company's offer was laid before the employes at Vancouver, New Westminster and Victoria, and the men voted to accept it. The report states that the new rates, as compared with the old rates are as follows:—

| | Per hour. New. | Old |
|---|---|---|
| City motormen and conductors | 65c. | 60c. |
| Interurban motormen and conductors | 67c. | 62c. |
| Car repairers | 70c. | 62c. |
| Mechanics' helpers | 65c. | 62c. |
| Car cleaners | 58c. | 58c. |
| Carpenters | 77c. | 69c. |
| Blacksmiths and machinists | 80c. | 71c. |
| Trackmen | 60c. | 59c. |

The Sherbrooke Ry. & Power Co. has bought 2 safety one-man operated cars, and is in the market for another 2 of the same, or similar, type.

# Mainly About Electric Railway People.

**E. H. Bronson**, who died at Ottawa, Ont., Oct. 19, aged 76, after a long illness, was a director of the Ottawa Electric Ry. Co.

**Henry Herbert Couzens**, A.M.I.E.E., who has been appointed General Manager, Toronto Transportation Commission, was born at Totnes, Devonshire, Eng., Oct. 16, 1877, and was educated at the Independent College (Taunton School), Taunton, Eng. He subsequently served as an articled pupil in both mechanical and electrical engineering, with Allen & Sons, Taunton, and the Taunton Corporation Electrical Works respectively, and in 1898 was appointed Assistant Engineer, Bristol Corporation Electrical Department, Bristol, Eng., and held that position until 1901, when he was appointed Deputy City Electrical Engineer, Bristol. He resigned in 1909 on his appointment as Manager and Engineer, West

H. H. Couzens,
General Manager, Toronto Transportation Commission.

Ham (London, Eng.) Corporation Electric Supply, and in 1912 was appointed to a similar position with the Hampstead Borough (London, Eng.) Council, and continued for a year as Consulting Engineer for West Ham. He resigned that position at the end of 1912, on his appointment as General Manager, Toronto Hydro Electric System, and took up the duties of the latter position early in 1913. He has been given an indefinite leave of absence pending the full organization of the Transportation Commission, after which, it is said, that he will act as General Manager of the combined systems.

**A. H. Dion**, Manager, Moose Jaw Electric Ry., Moose Jaw, Sask., is contemplating resigning to engage in commercial work.

**W. Marrigan**, member of the Public Utilities Commission, Port Arthur, Ont., who died there, Oct. 18, aged 60, was formerly a railway and general contractor, and carried out several subcontracts on the Intercolonial Ry., New Brunswick Ry., Bangor & Aroostook Rd., Baie des Chaleurs Ry., Soulanges and Welland canals and Port Colborne breakwater.

**Fred. R. Miller**, who has been appointed one of the members of the Transportation Commission, which has charge of the preparation for the taking over of the Toronto Railway by the city, and which will be in charge after this is accomplished, was born at St. Catharines, Ont., Oct. 31, 1878. He was educated at Ingersoll, Ont., and the Applied Science Faculty, Toronto University, graduating in civil engineering in 1898. He was subsequently associated with Haney & Miller, general contractors, Toronto, and from 1902 to 1909 was engaged in the construction of the waterworks tunnel under Toronto Bay, the Montreal Locomotive Co.'s plant at Montreal, the breakwater at Port Stanley, Ont., and other works. In 1909 he joined the firm of Roger Miller & Son Ltd., and was elected Vice President in 1917. In 1916 he took charge of the production of munitions under the Imperial Munitions Board in Toronto district, and until the winding up of that company was Vice President and General Manager of British Forgings Ltd., Toronto.

**G. Pettingell**, formerly Superintendent, Winnipeg, Selkirk & Lake Winnipeg Ry., a subsidiary of the Winnipeg Electric Ry., has resigned, and the position is being filled temporarily by L. E. McCall.

**P. Pocock**, Vice Chairman, London, Ont., Railway Commission, is spending some months in Europe.

Miss **Eleanor A. Soper**, daughter of Warren Y. Soper, Vice President, Ottawa Electric Ry., Ottawa, was married at Ottawa, Oct. 9 to A. C. Bethune.

**John F. Zebley**, a Boston, Mass., banker, who is reported to have died suddently there recently, is said to have financed the construction of the St. John, N.B., Ry., the contractor being his brother, H. B. Zebley, of New York. The first cars were operated Oct. 17, 1887. A prior street car line from Indiantown to Market Square, St. John, was built in 1869, but was abandoned after a few years operation.

**The Toronto Ry. city percentage case** was before the High Court at Toronto, during October, on the company's application for a declaratory judgment that the unpaid percentage payments due to the city by the company as provided for in the franchise agreement, constitute a lien on the company's assets in priority to the claims of the bondholders. Mr. Justic Orde, in delivering judgment, Oct. 22, stated that he was unable to see what rights of the company were affected, the matter being one as between the city and the bondholders, who had expressed no desire to have the question determined, and therefore dismissed the motion with costs.

**Winnipeg Electric Ry. Expenditures, Etc.**—The Winnipeg Electric Ry. states that it has disbursed among its employes during the past 4½ years $8,700,000; that the number of people in the city which it supports aggregates about 5,000; that during the past 4½ years it has purchased goods and material from local business houses which represent $5,400,000; that it is one of the biggest individual employers of labor in the city.

# Electric Railway Projects, Construction, Betterments, Etc.

Calgary Municipal Ry.—The new intersection for Eighth Ave. and Centre St. has been delivered in Calgary, Alta., and is being installed. When the work is completed the running of some lines will be rearranged, thereby effecting improvements in the service. (Oct., pg. 561.)

Grand River Ry.—The Board of Railway Commissioners has authorized the company to make deviations, changes, repairs, etc., on its line in North Dumfries Tp., and in Galt, Ont.; to build a station immediately south of Main St., Galt; to cross certain G.T.R. tracks, and to build under the C.P.R.; to cross the G.T.R. south of Dundas Road, and to instal diamond with interlocking plant, derails, home and distant signals, etc.; to connect with the C.P.R. and cross at grade 10 streets or roads in Galt, and three roads in North Dumfries Tp. The Board has also authorized the company to build an additional track (double track) across Speedwell and Bresleau Roads, Waterloo Tp., Ont. (Oct., pg. 561.)

Hydro Electric Power Commission of Ontario.—A press report states that the Commission has filed plans of its projected electric railway lines through the City of Hamilton, and the County of Wentworth. The plans, it is stated, provide for a terminal station on James St., Hamilton, near Stuart St. Hamilton city officials are reported to have said that the filing of the plans was necessary to conform with the Railway Act, in order that they may be examined by interested parties, and objected to if necessary. The plans filed, so far as they affect Hamilton, will be examined by the City Council's railway committee.

Hydro Electric Ry., Essex Division.—We are officially advised that the work in progress on this railway consists of the replacement of the existing single track line extending from Ouelette Ave., along London St., Windsor, Ont., to the Michigan Central Rd., a little over one mile. The work has been undertaken to facilitate operating conditions, and it is expected to have it completed during this year.

A press report states in order to provide funds for the extensions of the street railway system in Windsor and adjacent municipalities, the Hydro Electric Power Commission of Ontario will ask authority to sell another block of debentures, and that when the Ontario Government has taken the necessary action, the municipality may then submit the plan to the people. (Oct., pg. 561.)

London & Port Stanley Ry.—The Board of Railway Commissioners has under consideration an application for authority to build a second track across Bridge St., Port Stanley, Ont. (Oct., pg. 561.)

New Brunswick Power Co.—The St. John, N.B., City Council has been asked to have the company's car tracks removed from Queen St. West. It was stated that the laying of the tracks in this area had been opposed by the residents, and that the city had finally given its approval for the laying of the tracks for three years. This period has expired, and it is desired to have the tracks removed. An alternative route for the tracks was suggested and the applicants were asked to submit their desires in writing in order that the city officials could take up the matter with the company.

Port Burwell, Aylmer and London, Ont. A press report states that the project, discussed at length some years ago for the construction of an electric railway from Port Burwell, on Lake Erie, via Aylmer to London, is again being agitated.

Quebec Ry., Light & Power Co.—Work is reported to have been started on the construction of the extensions on St. Valier St., and in Belvedere Ward, Quebec. It is expected that they will be completed by the end of November. (Oct., pg. 561.)

Sarnia St. Ry.—A press report states that public support is being given to a suggestion that this railway be extended to Corunna, Ont.

Saskatoon Municipal Ry.—We are officially advised that there is now being built about 3,000 ft. of double track on existing lines in Saskatoon, Sask. A contract has been given L. S. Masterson, Pas, Man., for 5,000 track ties, and another contract has been given C. S. Sutherland, Edmonton, Alta., for 65 gross tons of 56 lb. relaying rails with angle bars, bolts, etc. (Sept., pg. 503.)

Tobique to Bathurst, N.B.—A press report states that a proposition is being considered for the building on an electric railway from Tobique to Bathurst, N.B., about 110 miles. Tobique Narrows is a station on the C.P.R. branch line from Perth Jct. to Plaster Rock, and Bathurst is a station on the Canadian National Rys. Such a line would run through Victoria, Northumberland and Gloucester Counties, a very large undeveloped territory containing considerable resources of timber and water powers.

Winnipeg Electric Ry.—A press report of Oct. 11 stated that it was expected to start laying the stone sets on Logan Ave. on Oct. 13, that the loop will be the first part to be completed, and that the car tracks will be laid on Catherine Ave. and Quelch St. instead of Gallagher Ave., this bringing it 300 ft. closer to the C.P.R. shops than its original location. (Sept., pg. 503.)

## Public Utilities Should be Self Supporting.

The recent congress of chambers of commerce of the British Empire, in Toronto, adopted the following resolution, moved by E. P. Fredericks, Secretary-Manager, Belleville, Ont., Chamber of Commerce:—"In the operation of public utilities throughout the Empire such utilities, where operated by the nation or a municipality, should be conducted on a self supporting basis and charges for such service should be sufficient to pay the actual cost of the service rendered, without having to make up a deficit by taxation, and thus adding to the already heavy burdens of taxpayers in all parts of the Empire."

Mr. Fredericks said that the resolution was founded on the very sound commercial principle that any business worthy of the name should be at least self supporting. He pointed out that there is a growing tendency, particularly on this side of the Atlantic, to foist broken down public utilities on communities, with the idea that by some process of magic the community can conduct the business at a loss without anyone having to make up the deficit. He added that most cities are running just about all the charity institutions that they can afford at present, and he urged that public utilities be made to pay their own way, by charging the people who use the service enough to cover the cost of such service. As the congress was being held in Toronto, he used that city as an example of how a public utility would probably work out under public operation. He said that if a reasonable charge for street railway fares of about 5c. had been permitted two years ago the people would have been able to secure the improvements in service for which they have been clamoring. As the matter stood he did not see how it would be possible to get these improvements now inside of two or three years, and at that time the people will be fortunate if they did not have to pay more than 25c. for four rides. He used these figures, because he assumed that the transportation commission which will operate the road will endeavor to make the service at least break even in the matter of cost, because he did not believe that the city should be asked to make up any annual deficit in the operation of this important utility. The people who use the service should pay for it and this opinion was unanimously endorsed by the congress, in fact, the resolution, after being seconded by Wm. Taylor of Owen Sound, Ont., was adopted without a dissenting voice, and after it had been thoroughly considered by representatives of some of the biggest business interests from all parts of the Empire.

## Ottawa's Traction Problem.

O.E.R. News, published by Ottawa Electric Ry., has the following in a recent issue:—Those of our readers who have followed the reviews of the United States Federal Commission's report on street railway conditions in that country will now be in a position to appreciate the local electric railway problem, the features of which may be summed up in a few words. In Aug., 1923, the Ottawa Electric Ry. Co.'s franchise expires. Two courses will then be open to the citizens of Ottawa, to purchase the street railway under arbitration, as provided for by the franchise, or to effect a new operating agreement with the company. If the citizens of Ottawa desire that the electric railway become the property of the city, and be operated municipally, the company will do everything in its power to effect a transfer of its property with as little delay as possible. If the citizens decide not to purchase, a new contract with the company becomes necessary if the present good service is to be permanently maintained.

In Ottawa today we have an operating company with an expiring franchise. Such a situation is one that has been duplicated in many cities on this continent, and because the two parties to the contract were unable to get together in good time and decide upon the best course for the future, many places have passed through a period that has been most unfortunate for the business and social life of the community. There is no doubt that in the course of a very few years extensions will be required here into new areas, and possibly additional traffic routes in the districts now served. To finance such construction will require a definite clear cut understanding that will permit those who will operate the railway to regard the future without fear.

We believe that a contract somewhat along the lines of the Tayler Grant,

which has been in operation in Cleveland for the past 10 years, would be the best possible arrangement for Ottawa. The Cleveland contract has been described by a prominent U.S. public service commission as supplying "the best street railway service at the lowest cost of any city in the U.S." It provides competent public supervision and at the same time expert and practical operation under men who have devoted their lives to successful railway management. Contracts of this kind require a flexible fare, which means that the rates of fare are adjusted by a publicly appointed commission at the end of each year's operations. If the commission find the revenue more than sufficient, the rates for the following year are reduced, and if not sufficient they are advanced. In this manner the revenue is always just enough to properly operate the railway, and provide a reasonable return to the owners of the property, thus making it possible at any time to make such extensions and improvements as the citizens through their commission, desire. The flexible fare idea has proved conclusively to be the proper modern system of street railway operation, so much so that a number of municipalities that own and operate their street railways are adopting it. The U. S. Federal Commission found that "the fixed fare contract failed to meet the requirements of the industry and was a relic of a bygone age."

Perhaps our readers know of some better way of dealing with the problem. If so, their suggestions should be put into workable form, for mere theorizing is of no avail where the situation demands a practical conclusion. The service at present provided is good. Is it not wise to carefully consider the whole matter in good time, and adopt the best possible means to make sure that the present good service be permanently maintained?

## "The Company Spirit" in British Columbia.

Geo. Kidd, General Manager, B. C. Electric Ry., has addressed the following to the employes:—"At the beginning of another winter season, let me extend to every employe of the company my heartiest wishes for a thoroughly enjoyable time. As the various social and recreational organizations in the company get under way, I hope everyone will enter into the spirit of comradeship and good feeling that has been a feature of the company's existence in the past.

"We have passed our trying times, both as a country and as a company, and while we have problems to face every day, there is no reason why, through the clubs and social organizations of the company, we should not at the proper time forget such worries and join together in the spirit of friendship rather than merely as fellow workers. To this end, the management has provided such facilities as should enable employes to get together from time to time, and I trust they will be made full use of.

"Club rooms, billiard tables and such material goods, however, do not make a company spirit. It is the human factor that counts, the living organization built up of the will to help. Nothing the company can do will provide pleasant relations among the employes unless each employe puts his heart into the game. Neither is everybody constituted the same way. Some are born leaders, some are not. But those who are not can be receptive to the company spirit that others are fostering. By taking an interest in social gatherings, by entering into competitions, by attending club functions and otherwise expressing their desire to help, employes can do a lot in their individual ways to make it pleasanter for everyone else. Maybe you are not much of a mixer, but you can at any rate meet others half way. This is especially necessary for new employes of the company. Needless to say, we welcome them to our winter activities and I hope the older employes will make them feel at home.

"If it is true that we should know how to work, it is equally so that we should know how to play and when to play. It is the earnest hope of the management that every employe will enter fully into the spirit of the social activities around the company so that the coming season may be the most enjoyable and successful we have ever had."

## Electric Railway Finance, Meetings, Etc.

**Brantford Municipal Ry.**—Brantford, Ont., press dispatch, Oct. 6.—A statement from the Brantford Municipal Ry. Commission shows for eight months of this year gross receipts $120,419 and gross expenditures $98,307.49, a gross gain of $28,111.55. After deducting therefrom interest on bonds and debentures, and making provision for sinking fund, the net gain for the eight months was $2,584. From the net gain are deducted $1,666 for depreciation of pavement and $800 for injuries and damages, leaving a small surplus of $117.57. The rate of operating expense has gone up from 73.32% in 1919 to 79% this year. Patronage of the West Brantford bus service is growing rapidly.

**British Columbia Electric Ry. and allied companies:—**

| | Aug. 1920 | Aug. 1919 | 2 mos. to Aug 31, 1920 | 2 mos. to Aug. 31, 1919 |
|---|---|---|---|---|
| Gross | $756,543 | $667,170 | $1,496,743 | $1,309,260 |
| Expenses | 568,559 | 500,362 | 1,134,074 | 993,343 |
| Net | 187,984 | 166,808 | 362,669 | 315,917 |

**Cape Breton Electric Co:—**

| | Aug. 1920 | Aug. 1919 | 8 mos. to Aug. 31, 1920 | 8 mos. to Aug. 31, 1919 |
|---|---|---|---|---|
| Gross | $56,886 | $50,927 | $397,491 | $377,110 |
| Expenses | 49,691 | 38,023 | 353,155 | 290,343 |
| Net | 7,195 | 12,904 | 44,336 | 86,767 |

**Regina Municipal Ry.**—A Regina, Sask., press dispatch of Oct. 2 states that notwithstanding the recent increase in fares the Regina Municipal Ry. had then a deficit of $40,882 for this year, and that there is a net deficit on the three public utilities of $79,213, the waterworks department alone showing a surplus.

**Toronto Civic Railway.—**

| | Sept. 1920 |
|---|---|
| Passenger revenue | $ 46,558 |
| Passengers carried | 2,775,708 |

**Toronto Railway.—**

| | 1920 Receipts | 1920 City percentage | 1919 Receipts | 1919 City percentage |
|---|---|---|---|---|
| Jan. | $ 652,350 | $110,950 | $ 588,923 | $ 88,339 |
| Feb. | 595,861 | 119,172 | 545,771 | 96,563 |
| Mar. | 745,706 | 149,141 | 615,526 | 123,105 |
| Apr. | 653,340 | 130,668 | 600,231 | 120,046 |
| May | 644,458 | 132,892 | 620,068 | 124,014 |
| June | 544,833 | 108,966 | 431,082, | 86,217 |
| July | 641,793 | 128,539 | 534,412 | 128,359 |
| Aug. | 631,521 | 126,304 | 629,540 | 125,908 |
| Sept. | 690,546 | 55,243 | 641,422 | 51,313 |
| | $5,820,408 | $1,061,695 | $5,206,975 | $943,864 |

**Toronto Ry., Toronto & York Radial Ry. and allied companies:—**

| | Aug. 1920 | Aug. 1919 | 8 mos. to Aug. 31, 1920 | 8 mos. to Aug. 31 1919 |
|---|---|---|---|---|
| Gross | $1,225,682 | $1,083,741 | $9,460,745 | $8,194,209 |
| Expenses | 871,180 | 721,687 | 6,504,758 | 5,060,010 |
| Net | 354,502 | 362,054 | 2,955,987 | 3,161,289 |

**Winnipeg Electric Ry. and allied companies:—**

| | Aug. 1920 | Aug. 1919 | 8 mos. to Aug. 31, 1920 | 8 mos. to Aug. 31, 1919 |
|---|---|---|---|---|
| Gross | $368,616 | $353,194 | $3,405,002 | $2,565,812 |
| Expenses | 284,990 | 288,650 | 2,537,871 | 2,030,151 |
| Net | 83,626 | 64,544 | 867,131 | 535,661 |

There was a deficit for August after allowing for fixed charges, of $1,294.34.

## Electric Railway Notes.

Winnipeg Electric Ry. employes reported joining of the One Big Union is denied.

The Point Grey, B.C., Municipal Council is reported to have notified the British Columbia Electric Ry. that a 20-minute service is required on Oak, Dunbar and Crown Sts., as provided for in the franchise.

The Montreal Tramways Co. took proceedings in the Recorder's Court recently against E. Renaud and Mrs. I. Maggell for using transfers illegally, by giving them away. The accused were fined $40 each, or in default of payment, two months in jail.

The Regina, Sask., City Council is reported to have decided to take another vote of the ratepayers on the bylaw to authorize the operation of one-man cars on the municipal railway, which was defeated by 428 to 321 when it was submitted in July.

The London, Ont., Railway Commission, has under consideration a suggestion for the reduction of the train service between London and Port Stanley. A report on the matter is being prepared by the Manager for consideration at an early meeting of the Commission.

The Assiniboia, Man., municipal council is reported to be making arrangements for operating motor bus lines in the municipality, owing to some differences with the Winnipeg Electric Ry. An effort is being made to have the difficulties adjusted through the Public Utilities Commissioner.

The Winnipeg City Council's transportion committee has recommended "that on the advice of solicitors, application be made to the Attorney General for a stated case as to the constitutionality of The Public Utilities Act and that any action that may have been taken by the solicitors with this end in view be confirmed."

The British Columbia Electric Ry. has issued a folder, "Fishing and Shooting along the B.C. Electric," which contains very full information about fish and game to be found near the company's lines, with maps of districts, dates of open seasons, particulars of train service and a map of the company's mainland system, which includes the interurban to Chilliwack, "the longest interurban line in Canada."

The Dominion labor party in Winnipeg has the following in its platform programme for the forthcoming municipal elections:—"We demand that the street railway company live up to the terms of the original contract with the city, or surrender the monopoly; and that if the street railway company does not accede to this demand, this party will seek to elect a city council pledged to the establishment of a municipal motor bus service and take such other steps as may be necessary to remove the city's transportation system from private control."

The Quebec Public Service Commission at Montreal, Oct. 7, heard the Montreal

Tramways Co.'s appeal against the Montreal Tramways Commission's decision regarding $16,000 which the company had charged as interest on the unpaid return of the past two years, which the company claimed was provided for in the contract between the company and the city. The Tramways Commission disallowed the claim. The Public Service Commission adjourned the hearing of the matter pending the decision of a court on two other points arising out of the amount of capital on which the company is entitled to a return of 6%.

## Motor Busses Cannot Compete with Trolley Cars in Winnipeg.

The Winnipeg Electric Ry.'s experience with its motor bus service, in operation since May, 1918, proves fairly conclusively that the motor bus is not an adequate substitute for an electric street railway, and can best be used to advantage in a new district where travel does not justify the initial cost of railway construction. The company is operating seven 16-passenger busses, on routes which serve as feeders to the railway. Only five are in regular operation, the others being held in reserve for emergencies. The bus services were inaugurated as an expedient, and it is the company's intention to replace these services with electric railway service when conditions warrant.

The results of operation show that the motor bus, in Winnipeg at any rate, is not as economical as the electric car operated over steel rails. In the matter of regular and dependable service, too, the motor bus does not compare favorably with the street car; the severe climatic conditions of that northern city making all the year round efficient operation of the motor bus almost impossible. The company has furnished Canadian Railway and Marine World with the following statement of the cost of operating five of these busses for the seven months ended July 31, 1920. The cost of the five busses was $12,930, and the total miles operated 66,183:—

| | Total costs | Cost per mile |
|---|---|---|
| Drivers | $5,366.30 | 8.12c. |
| Tires | 980.84 | 1.48c. |
| Gasoline | 3,593.14 | 5.42c. |
| Oil | 328.90 | .48c. |
| Labor for repairs | 2,056.42 | 3.11c. |
| Materials for repairs | 1,072.91 | 1.62c. |
| Storage rental | 350.00 | .53c. |
| Insurance— | | |
| Liability | $630.00 | |
| Fire | 52.78 | |
| | 682.78 | 1.06c. |
| Taxes, including driver's licenses, provincial and city car licenses | 152.00 | .23c. |
| General expenses, including supervision, accounting and other overhead expenses | 312.93 | .47c. |
| | $14,896.22 | 22.52c. |
| Depreciation | 1,508.50 | 2.28c. |
| Interest on investment | 603.40 | .91 |
| Total costs | $17,008.12 | 25.71c. |

It will be noted from the table that motor bus costs total 25.71c. a bus mile. The cost of electric street railway service in Winnipeg during the same period was 27.60c. a car mile. In a comparison it is seen that there is a difference of 1.89c. a mile in favor of the bus, but when consideration is given to the relative carrying capacity of the bus and the street car, there is no question that street car operation is the more economical. Another factor bearing on this point is the increasing price of gasoline, and the comparatively constant price of electricity. Gasoline in Winnipeg cost 37c. a gallon in January last, 47c. in June and 51c. in October.

In commenting on this matter, the Winnipeg Electric Ry. says:—"Anyone who suggests that Winnipeg can operate a municipal bus service in competition with the street railway, at rates less than those charged at present in the city, is not well informed. Even if there were no trolley system at all to compete against, a bus service could not provide anything like adequate transportation for the people of Winnipeg, and could not be operated as cheaply as the present trolley system.

"Picture for yourself the situation in Winnipeg during the evening rush period. Although sometimes in severe weather in the 90 minutes between 5 and 6.30 p.m. as many as 120 street cars pass through the 'neck of the bottle' at the corner of Portage Ave. and Main St. going west on Portage Ave., the street cars at times are taxed to the utmost to carry all the people who want to ride. A street car can carry four and five times as many passengers as a bus, and if busses were to take the place of street cars it would take 500 busses to handle the crowd going west on Portage Ave. alone.

"But apart altogether from the service point of view, there is the question of cost. We operate several motor busses ourselves, and our experience with them is common to the experience of other cities where a bus service is operated. The service life of a motor bus averages three years. After this period they have to be replaced. The average life of a street car is 25 years. Then again there is the cost of motive power. A street car will use up 2c. worth of electricity in going a mile. To go the same distance a motor bus absorbs about 6c. worth of gasoline, a difference of 200% in the cost of motive power for one mile of operation. Elsewhere, as in Winnipeg, experience shows that it costs practically as much for a bus to travel one mile as it does for a street car to travel one mile, but—the street car carries five times as many people as the bus. In other words, for the same cost of operation per car mile, a street car can produce five times as much revenue as a bus."

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**One-man cars in St. Thomas.**—The St. Thomas Street Ry., which is owned by the City of St. Thomas, is operating one-man cars, which are old single truck cars, converted for one-man operation with double end drive. It still has two cars which are operated by two men each, on busy days or holidays. An official writes: "We find these one-man cars very satisfactory. One of our greatest troubles is to get the people educated to have their fares ready when getting on the cars. We have put out tickets among the merchants for sale, so that people can get them easily, and thus save time for the one-man operator."

**Ontario Hydro-Electric Railways Commission.**—The Commission appointed by the Ontario Government, with Mr. Justice Sutherland as Chairman, to investigate matters connected with the proposed construction and operation of radial electric railways by the Hydro-Electric Power Commission of Ontario, held its first public sitting in Toronto, Sept. 29, and had several other sittings during October for examination of witnesses, most of the time being occupied in the examination of F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario.

### MARINE DEPARTMENT.

## Australian Port Improvements.

B. Millin, Canadian Government Commercial Agent at Sydney, New South Wales, writes:—Sydney continues to outgrow its wharfage accommodation, and the Harbour Trust Commissioners have in view a scheme which contemplates the provision of a large amount of additional accommodation. This scheme is to be undertaken in stages and its development will take place in accordance with the rate of increase of shipping trading to the port. In 1901, with few exceptions, the Sydney wharves were in private hands, and owing to the steep nature of the foreshores access was in most cases very difficult. All this has been altered and communication is now easy and convenient. In the year before mentioned, the wharves were assumed by the Sydney Harbour Trust at a cost of £4,700,000, and since that date an additional £4,000,000 has been spent in new wharves and reconstruction.

The port of Newcastle is to have better provision made for deep sea ships, which at present are unable to load to their full capacity, owing to lack of sufficient depth of water at the entrance. At present the bar's mean depth is 24 ft. at low water, and it is to be deepened to 33 ft. The rise and fall of tides at Newcastle is from 4 to 6 ft., and when the proposed work is completed the port will be able to deal with the largest vessels that come to Australia.

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**Dredging in St. John Harbor.**—The Dominion Public Works Department has awarded a contract to J. A. Gregory, of West St. John, N.B., for the following dredging: — Completing deep water berths 5, 6 and 7 to 30 ft. below low water; deep water berths 1, 2, 3 and 4 to 25 ft. below low water; deep water berth no. 7 extension to 15 ft. below low water; deep water berths 15 and 16 to 30 ft. below low water level, and to complete the berth on the east side of Canadian National Rys. long wharf to 30 ft. below low water. The names given above are those by which the berths are known, which correspond with their location in the harbor.

**Intensity of Wireless Signals.** — A method of measuring and comparing the intensities of signals received by a radio station has been worked out in France with good results. This method, which can be employed only for undamped waves, essentially consists in comparing the intensities of reception of the signal and of the sound produced by a local source of oscillations, of the same frequency and form, constituted by an ordinary heterodyne. By modifying the intensity of the action of the auxiliary oscillation generating device upon, say, the antenna, a rough equalization is first obtained, afterwards, by manoeuvering convenient shunts to the telephone an absolute equality of intensity is obtained. The ratio of intensities is proportional to the shunt resistances. Moreover, by inserting a thermo galvanometer in the antenna the absolute value of the intensity of the auxiliary signals can be obtained.

**Marpole Coal Co. Ltd.** has been incorporated under the British Columbia Companies Act, with authorized capital of $200,000, to take over a contract made between Canadian Collieries (Dunsmuir), and R. F. Marpole, for handling coal, and to own and operate steam and other ships, railways, etc.

# Marine Department

## The Port of Victoria, British Columbia

By Thos. C. Sorby, Secretary, Inner Harbor Association of Victoria.

The Port of Victoria, B.C., is situate at the southeastern end of Vancouver Island, and is the first landfall of ships coming inward from the Pacific Ocean toward lower British Columbia or Puget Sound, and it is a port of call for nearly all ships passing inward or outward. It has a wireless telegraph station which can communicate with ships 250 to 300 miles in the open Pacific Ocean and has cable communication with all parts of the globe. Victoria is the capital of British Columbia, with direct railway, telegraphic, telephonic and water communication to all parts of Vancouver Island and the mainland. Victoria is so geographically placed that it enjoys a remarkably equable climate, free from storms, with a temperature that seldom exceeds 80 degrees in summer or descends below 20 degrees in winter. It has a moderate rainfall (about 29 in.) and a maximum of sunshine and relatively small amount of fog, and outdoor work is practicable nearly every day throughout the year. The climate is moderated greatly by the Japanese current to the south in winter and the cool winds from the mountains in summer, and it is by reason of this equable climate that the Dominion Government selected Victoria for the location of its astrophysical observatory, erected a short distance north of the city limits. The city is exceptionally well paved and lighted, and abundantly supplied with water; its residential streets are boulevarded, with pretty homes on either side in well kept private gardens. Beacon Hill Park, with its placid lakes, surrounded still by numbers of old forest trees, its shady glades and, in its season, the hill ablaze with the golden broom, overlooks the Straits of San Juan de Fuca, with a magnificent view of the distant snow-clad mountains, and presents a scene of ever varying beauty. The presence of the arbutus tree and the native dog-wood tree are evidences of the mildness of the climate.

Victoria, B.C.—James Bay, Inner Harbor, from the Causeway, showing Canadian Pacific Ry. wharves at the left and Grand Trunk Pacific Coast Steamship Co.'s wharves at the right.

The port and harbor of Victoria is situate on an arm of the sea, the entrance being between McLaughlin Point and the western end of Ogden Point breakwater, from which the Dominion Government has recently completed a breakwater 2,750 ft. long, at a cost of $2,000,000. This structure protects about 90 acres of water from the heavy, southeasterly seas. Inside the breakwater are two concrete piers, erected at a cost of $2,300,000, providing about 4,000 ft. of berthage in 35 ft. of water at low tide. On the piers are sheds, one 700 x 200 ft. and another 200 x 200 ft. These have rails along the sides and down the center, connected with the car ferry slip, enabling the cars of all the mainland systems to be run from the manufactories of the east, alongside the ships or into the center of the sheds.

The wharves of the inner harbor are privately owned, and have a developed frontage of about 15,500 lin. ft. (exclusive of shipyards) and have a large shed area with a depth of water ranging from 16 to 20 ft. at low tide, the latter being the objective depth throughout the harbor. Amongst these commercial wharves are included the outer wharf (Rithet's), with a water frontage of about 2,680 ft. in 30 to 33 ft. of water at low tide and a freight capacity of some 7,000 tons; the whole property covering 16 acres; the Brackman-Ker mills and wharf; the Victoria Chemical Co.'s wharf, 336 ft. frontage in 20 ft. of water; British American Paint Works, with a wharf frontage of about 300 ft.; the wharves of the C.P.R. (British Columbia Coast Service), with a wharf frontage of 1,600 ft; the Victoria Dock Co., about 360 ft.; the Grand Trunk Pacific Coast Steamship Co., about 1,200 ft.; the Canadian Puget Sound Timber & Lumber Co., about 550 ft.; the Consolidated Whaling Co., with a frontage of about 300 ft., and many small wharves.

**Railway Communication.**—Victoria is the southern terminus of the Esquimalt & Nanaimo Ry., running from Victoria to Nanaimo and Courtenay, the coal fields on the north, and Alberni on the west coast. This line is an integral part of the C.P.R.'s great transcontinental sys-

tem, and cars from all parts of the Canadian and United States systems are delivered at the Victoria freight station by car-barge ferries from Vancouver to Ladysmith and Esquimalt.

The Canadian Northern Pacific Ry. (now part of the Canadian National Rys.) has built a temporary trestle bridge across Selkirk Water, with a 70 ft. bascule bridge. The temporary terminals of the railway are on the northern side of the Esquimalt Road, at the west end of Point Ellice bridge. This will be the temporary terminus of the Saanich Peninsular branch. In connection with its temporary terminus at Point Ellice, the C.N.R. proposes erecting a car ferry slipway, south of the bridge, so that cars to or from the mainland can be taken at any time to or from the slip at the ocean docks at Ogden Point, or to or from any of the wharves in the harbor.

Car Ferry Service.—The development of the car ferry coasting trade is having an important effect upon industries on the Pacific coast, and is doing much to assist their growth. These ferries call at various points along the coast, bringing railway freight cars to mills and other concerns which are not situated near a railway. The cars are either landed and loaded, or loaded directly on their barges. In this way, industrial concerns that are actually a considerable distance from a railway are given direct rail connection. A car ferry service is maintained every day in the year by the C.P.R., with four car barges and three tugs between Vancouver and Victoria and Vancouver Island points.

The Canadian National Rys. are maintaining a similar service between Port Mann, on the south side of the Fraser River, and Patricia Bay, on Vancouver Island, by the new car ferry Canora, which is 308 ft. long, with a beam of 52 ft. and a moulded depth to the shelter deck of 28 ft. The draft loaded is 14½ ft., with a displacement of 3,400 tons, and capacity of 20 cars. Her speed on service is 14 miles an hour.

The B.C. Electric Ry. has a complete street railway service, about 42 miles in extent, connecting Esquamilt and the Naval Station on the west, Oak Bay on the east; and also by interurban line (some 23 miles long), giving rapid service to the municipalities, summer resorts and villages on the Saanich Peninsula.

Thus it will be seen that the greater part of Vancouver Island is directly connected with the Port of Victoria as the distributing center of an island of 16,000 square miles in area, which occupies a most conspicuious position both geographically and strategically on the map of Western Canada. This area is one of infinite and undeveloped wealth; its forests, coal mines, mineral deposits and fisheries all accessible from a lengthy coast line, or by rail.

Coastwise Service.—The C.P.R. Co. has about 2,500 ft. of wharfage in James Bay, with spacious warehouse accommodation. Its B.C. Coast Steamship Service is operating 16 steamships out of Victoria this year, giving semi-weekly service in summer, and fortnightly in winter, to Alaska, and a weekly service to Prince Rupert throughout the year; a regular service to the west coast of Vancouver Island; two ships a day to and from Vancouver, and a daily ship to Seattle every afternoon. These ships all use the Victoria inner harbor and make their headquarters at the company's piers, and connect with their main line and continental system at Vancouver.

Victoria, B.C.—Head of James Bay, near C.P.R. landing, looking north, showing Empress Hotel on the left, and Legislative Buildings to the right.

There is a weekly service to west coast points on the mainland and three trips a month to the west coast of Vancouver Island and four trips a month to the Gulf Islands.

The Grand Trunk Pacific Coast Steamship Co. has a wharf frontage on James Bay of about 1,450 ft., and operates four steamships, using its own piers in the inner harbor. This fleet makes trips twice a week between Seattle, Victoria, Vancouver, Ocean Falls, Swanson Bay, Prince Rupert, and Anyox. The G.T.P. Ry., with its western terminus at Prince Rupert, is operating transcontinental trains between Prince Rupert and points east, making direct connection with steamships both northbound and southbound.

The Puget Sound Navigation Co. operates steamship between Seattle and Victoria, B.C., and all other important points on Puget Sound.

Steamship Lines, running in and out of the port of Victoria, calling at the outer wharf:—

Canadian Pacific Ocean Services, Ltd., to and from China and Japan.

The Ocean S. S. Co., (Blue Funnel Line), sailings every 28 days to Japan, Hong Kong, Philippine Islands, etc.

Nippon Yusen Kaisha (Japan Mail S. S. Co.), sailings every 10 days to and from Japan and China, in connection with U.S. railways.

The Harrison Direct Line, monthly sailings, to and from Antwerp, Glasgow, London, Liverpool, etc.

The Royal Mail Steam Packet Co., monthly sailings to and from Europe, Hong Kong, China, Ceylon, Manila, and the North Pacific Coast.

The Pacific S.S. Co., weekly sailings to and from San Francisco and California ports.

The Grace Line, to and from Mexico and South American ports, via San Francisco, and from New York via the Panama Canal.

The Osaka Shosen Kaisha, to and from Japan, Hong Kong, Manila, in connection with the Milwaukee Railway.

The Canadian-Australian Royal Mail, Line with monthly sailings to and from Auckland, Sydney, Honolulu, Suva, etc.

In addition to these lines of steamships, there are a number of tramp steamships, carrying sulphur, nitrate of soda, superphosphate of lime, fuel oil, rice, fish, etc. The low port charges make it possible for these lines to call and discharge freight and passengers for Victoria and Vancouver or Seattle in passing.

**Ordinary Port Charges, Victoria.**

| | |
|---|---|
| Hospital dues, per net ton, payable three times annually | $0.01½ |
| Harbor dues, payable twice annually | 5.00 |
| Bill of health | 1.00 |
| Port agency | Up from $15.00 |

Dockage charge (no cargo landed), $4 for first 200 tons and 1½c. for each additional ton.

**Stevedoring.**

| | |
|---|---|
| Loading— | |
| Salmon or general cargo, per ton | 70c. to 80c. |
| Lumber and timber, per m. ft. | $2.25 to $2.50 |
| Discharging— | |
| General cargo (weight and measurement), per ton | $0.65 |
| Coal, per ton | 1.10 |

Bunker Coal.—At Union Bay, 120 miles from Victoria, the Canadian Collieries (Dunsmuir) Ltd. has ample facilities for the rapid bunkering of all classes of steamships with Comox steam coal. Dispatch can be given at the rate of 400 tons an hour. The company contracts for the supply of this coal to the British Admiralty, Imperial Japanese Navy, Canadian Pacific, Nippon Yusen Kaisha, Blue Funnel, and other steamship companies.

There are also the Canadian Western Fuel Mines at Nanaimo, and the Pacific Coast coal mines at South Wellington.

**Fuel Oil.**—Inside McLaughlin Point and opposite the outer wharf is the Imperial Oil Co.'s wharf, where fuel oil, gasoline, distillate, lubricating oils, etc., may be obtained.

**The principal industries** of the port of Victoria are lumbering, shipbuilding with steel and wood, ship repairing, whaling, grain milling, fish canning, and fruit growing and preserving.

**The lumbering business** is in a very flourishing condition, the present monthly cut of the five mills bordering the harbor being about 8,000,000 ft. and of the shingle mill about 600,000 ft., and these figures would be considerably inincreased if a sufficiency of tonnage was available for the transportation of the manufactured products to the markets needing the goods.

Douglas Fir Trees, on the road to Alberni, Vancouver Island.

**Wood pulp** and paper making woods, in inexhaustible quantities, border the ocean and navigable waters within easy transportation to Victoria. The products of the mills find ready market in Australia, Japan, China, Great Britain, Europe and the northwestern United States. The Powell River mills have a daily capacity of 250 tons of news print. For export purposes ships can load direct at Swanson Bay. The sulphite and fiber mills are capitalized at $2,500,000 and have a capacity of from 60 to 70 tons a day, the product being shipped to Vancouver and Prince Rupert for rail transportation. These mills are situate in a forest stand of hemlock and spruce, from which there are cut 250,000 ft. a day and there are exported 65 tons of the finished product, about half of which is sulphite, bleached or unbleached. With the development of the adjacent water power these figures would rapidly be increased.

**Shipbuilding.**—The Harbour Marine Co. has two ways about 400 ft long for building ships of about 8,100 d.w. tons. This yard is fitted with the most modern shipbuilding appliances, including the largest bar-bending furnace on the coast. The 2 ships now building are for the Canadian Government Merchant Marine Ltd., 400 ft. long, 52 ft. moulded breadth, 31 ft. moulded depth, with a draft of about 25 ft. loaded. They will have carrying capacity of about 8,100 tons, with an estimated speed of 12 knots. They are of the two-deck type, with poop, bridge and forecastle, straight stem and elliptical stern.

The Cholberg Ship Co., established for the building of wooden ships, has built 4-masted sailing schooners 210 ft. long, 45 ft. beam, 22 ft. moulded depth, cargo capacity 1,500 d.w. tons, or 1,100,000 ft. b.m. lumber, built to British Lloyd's requirements, adapted for the installation of auxiliary engines on their completion. The ships now building will be of 2,400 d.w. tons, with a capacity of 1,500,000 ft. of lumber. Heavy metal knees of forged steel will replace the usual wooden ones, resulting in there being room for 75,000 ft. more lumber than with ordinary methods. The timbers and bolts are heavier than usual, and the construction generally will be above classification requirements. The barquentines will have a large sail spread and will have fine lines, permitting fast sailing. Provision is being made for the complete repairing of wooden ships, this being the nearest yard to the open ocean immediately available to a ship in distress.

The Douglas fir, of which these vessels are mainly built, is indigenous to Vancouver Island and grows to greater size and of finer quality on the island and western slope of the mainland than anywhere else. Douglas fir is exceptionally strong for its weight, a fact more important in the shipbuilding industry than almost any other business. It is important that the material used in ship construction be as light as the desired strength will permit, and Douglas fir is one of the few woods whose strength is above the value set by the well established law of weight vs. strength, and frequently squares 45 in. for a length of 90 ft. In addition to the large timbers and planks obtainable from Douglas fir trees, the stumps yield the finest and largest ship knees in the world. These knees are an important item to the shipbuilder, for as many as 200 or 300 are used in a single boat. For many years the large masts and spars for ships built in various shipyards of the world have been supplied from the Douglas fir forests.

**Ship Repairing.**—In the upper harbor, or basin, are the Victoria Machinery Depot Co.'s works, having a frontage of about 360 ft. The marine ways are fitted with a cradle 280 ft. long by 60 ft. wide, providing dry dockage for repairing, cleaning, etc., for ships up to 3,000 tons displacement; larger ships are docked by the firm at Esquimalt drydock. At the plant are up to date machine shops, boiler shops, blacksmith's shop, foundry and pattern shop and an extensive wharf area for receiving and storage of goods. A 9-ton steam hammer, an oil furnace and another oxy-acetylene welder have been added to the equipment of the company's blacksmith shop, which was recently enlarged by an addition measuring 36 x 40 ft. The old steam hammer in the shop delivers a blow of three tons, while the new one is the largest in the city.

Yarrows Limited shipbuilding, engineering and ship repairing plant is situated in Esquimalt Harbor near Victoria, close to the government drydock, and is adjacent to the site of the new dry dock. This yard is specially equipped to cope with ship repair work and the facilities for the quick dispatch of repairs have been steadily improved and added to. The marine railway can accommodate ships up to 315 ft. long and 3,000 tons displacement, larger ships up to 480 ft. being accommodated in the adjacent drydock. The wharf is 600 ft. long, can accommodate ships on both sides up to 23 ft. draft, and is equipped with shearlegs capable of lifting 60 tons, and is fitted with compressed air, water and electric leads, etc. There is a floating crane of 10 tons capacity, and also a floating compressed air plant and other facilities. The yard is equipped with up to date machine shops, boiler shops, joiner shop, pattern shop, and foundry, also coppersmith and pipe shop, powerful portable electric welding and galvanizing plant.

**Dry Docks.**—The Esquimalt drydock, near Victoria, is owned by the Dominion Government. Length of dock to gate, 450 ft. at keel blocks; 480 ft. at curb; width at gates, 65 ft.; depth of water, 27 to 29 ft.; minimum charge, $100 a

day. The Dominion Government proposes to commence shortly the construction of a new drydock in Esquimalt harbor, immediately adjacent to Yarrow's shipyard. The plans propose the following dimensions: Length from caisson stop to head wall, 1,150 ft.; width of entrance, 120 ft.; depth on sill at ordinary high water spring tides, 40 ft.; width at coping of dock walls, 144 ft. The dock will be divided into two sections, 650 ft. and 500 ft. respectively, each part to be closed by a ship steel caisson. For the purposes of emptying the dock, three centrifugal pumps, each with a pumping capacity of 60,000 gal. a minute, will be installed. Electric power, generated by the dock power plant, will run the pumps and other machinery. The walls of the dock will be of concrete with granite copings. The keel and bilge blocks will rest on granite strips extending the full length of the dock, and granite will be used for the caisson stops. A basin, 560 x 200 ft., will be provided on the south side of the drydock, for the repairing of ships while afloat and to permit the unloading of cargoes before ships enter the graving basin. The structure around the basin will be built of reinforced concrete. Other units of the drydock plant will include: boiler shop, 128 x 60 ft.; machine shop, 240 x 100 ft.; copper and pipe shop, 120 x 60 ft.; general store, 123 x 60 ft.; forge and smith shop, 144 x 60 ft.; smith repair shop, 240 x 80 ft.; slab furnace and angle smith shop, sail loft, paint shop and store. Other buildings to be erected in connection with the drydock will include a spacious generator house, oil service tanks, and oil cistern, lined with concrete, office buildings and various details associated with an industrial plant of this magnitude.

**Fishing Industry.**—The B.C. salmon fisheries are a most important industry, the activities of which spread over all the rivers and inlets of the B.C. coast. One cannery at Esquimalt, close to Victoria, puts up about 30,000 cases a year. The fish are caught in traps in Straits of San Juan de Fuca. They are shipped mostly over the C.P.R. and other railways to the European markets. There are two or three other canneries on Vancouver Island doing an extensive business, and many more on the mainland. The total pack in B.C. in 1919 was 1,393,156 cases, valued at $15,000,000, of which the Vancouver Island pack was 165,000 cases, made up principally of sockeyes, red springs, cohoes and pinks, the balance being chums and white springs. The annual export of salmon is about 175,000 tons, of cod about 1,000 tons, of herring 23,000 tons, with halibut, oolachans, trout and clams in corresponding large quantities. Seventy-five per cent. are exported to Great Britain and other large consumers are France, Italy and Greece.

The Consolidated Whaling Corporation Ltd. (late Victoria Whaling Co.) has been incorporated recently with head offices at Toronto and a capital of $2,500,000. Large consignments of whale oil have been brought to Victoria recently from the various stations on the west coast of Vancouver Island and the Queen Charlotte Islands. The oil is loaded at the wharf side into tank cars, owned by the whaling company, each having a capacity of 200 barrels. The Canadian National Rys. ferry barge, with a capacity of eight cars, is towed to Port Mann, on the mainland, where the oil is shipped to eastern markets. Victoria is the home port for the company's fleet.

The Vancouver Island Whaling Co. operates from Barkley Sound. Its ships are the largest on the coast, fitted with the most modern appliances and having a speed of 14 knots. In addition to oil production, the company manufactures fertilizer, for which there is considerable demand, from the whale, dog-fish and other fish offal.

**Fruit Industry.**—At the southern end of Vancouver Island, the district around Keetings and Gordon Head, contiguous to Victoria, is remarkable for fruit-growing. It produces the finest strawberries on the American continent for flavor, color and keeping qualities. The fruit begins to ripen early in June, and picking lasts about six weeks. The earlier pickings are larger and firmer, packed in boxes and used fresh; the later pickings are smaller, and are mostly used for jam. Next to the strawberry is the logan berry, a most delicious fruit, either eaten fresh or made into jam. It grows rapidly to a large size, over trellis work. It is seldom attacked by pests, continues to bear for years, and forms a valuable crop each succeeding year, with but little attention. Amongst the pit fruits, cherries and Italian prunes are the most profitable ones to cultivate in this locality and yield good results. There is practically an unlimited market for these small fruits and producers need not be afraid of over-producing.

**Poultry Raising.**—The climatic conditions of the southern portion of Vancouver Island are particularly favorable for poultry raising. With a small capital investment, the poultry business shows a greater income return than any other branch of industry.

The foregoing paper will be read before the American Association of Port Authorities at Chicago in October.

**The manufacture of Portland cement** by the British Columbia Cement Co. at Pemberton and Todd Inlet ,is one of the important industries in the immediate neighborhood of Victoria. These two plants are capable of turning out 1,500,000 barrls a year. Both plants are on tidewater and possess the latest manufacturing machinery.

**Water Powers.**—Vancouver Island is rich in available sources of hydraulic and hydro electric power, and this factor is one of its great natural assets. Taking Jordan River and Goldstream as strategic to Victoria, the B.C. Electric Ry. Co. has 25,000 h.p. developed out of an estimated capacity of 38,000 h.p.; and out of the 25,000 h.p. there is still 12,000 available for prospective industrial use, over and above the present maximum demand, enough to supply the needs of Greater Victoria and the Saanich Peninsula. On the Puntledge River, near Comox, there is a development of 19,000 h.p., of which 9,500 is installed, and approximately 5,000 h.p. available over and above the present maximum load. In the Alberni district there are about a dozen available sites of varying capacities from 1,000 to 20,000 h.p., at present undeveloped, at Quatsino some 10,000, at Nanaimo River some 20,000, and at Campbell River there is upwards of 100,000 h.p. available at one site, which is specially suitable for electric transmission over a considerable area of mining country within feasible transmission distance. On the mainland, within a radius of 100 miles from the City of Vancouver, there is upwards of 750,000 h.p. available, present developments being greatly in excess of the demand. The same plentitude of available power facilities is found along the lines of railway development all over the province, only waiting to be harnessed up for industrial purposes. The water powers along the coast are within a short distance of tidal water; the harbors are open and accessible at all times of the year.

## Longshoremen's Wages at Prince Rupert.

A board of conciliation, to adjust longshoremen's wages at Prince Rupert, B.C., presented a unanimous report recently, and an agreement was entered into between the Pacific Stevedoring & Contracting Co., Grand Trunk Pacific Ry., and G.T. Pacific Coast Steamship Co. and International Longshoremen's local 38-41, the following rates of wages being agreed on, retroactive to July 16:—

General longshore work—90c. per hour day time and $1.10 overtime. Eight hours to constitute a day's work.

Coal and ore in bulk—$1 per hour day time and $1.20 overtime.

Cement in lots of over 25 tons.—$1 per hour day time and $1.20 overtime.

Fertilizer and plaster in lots of over 25 tons.—$1.15 straight time.

Powder, any quantity.—$1.10 straight time.

Sulphur in bulk, any quantity.—$1.25 straight time.

Creosoted lumber and piles.—$1.10 straight time.

Double winch drivers.—$1.10 day time and $1.50 overtime.

The following conditions also govern: Eight hours, viz., 8 a.m. to 12 noon and 1 to 5.00 p.m. will constitute a day's work. All time before 8 a.m. and after 5 p.m. and meal hours when worked will be considered overtime.

Longshoremen will line up to G.T.P. no. 2 shed each morning at 8 o'clock, remaining for half an hour. If men are not hired in that time. they may retire to hall, where they will be subject to call up to 11 a.m. The men shall line up for work in the afternoon at 1 o'clock, remaining for half an hour, when they shall then retire to the hall, and will be subject to call up to 5 p.m. The men required for night work shall be notified at the hall not later than 5 p.m., when information as to requirements for night duty is possible to be obtained at that time. In either cases, if there are not sufficient men, either at dock or hall, the union shall endeavor to supply the requisite number, and failing that the employer shall obtain men wherever available.

All men hired for night work and reporting for duty between 7 p.m. and midnight, shall be entitled to a minimum of two hours pay at regular rates. After midnight up to 6 a.m. to four hours pay, when boat fails to arrive at the time for which the men are ordered. If kept under orders for longer periods, they shall receive regular rates for such further time they are kept under orders.

It is understood that these rates of wages and conditions will govern longshoremen employed on the docks at Prince Rupert, B.C., and shall be applicable to coastwise work only, subject to 30 days notice of cancellation or revision from either party.

**Toronto Harbor Commission.** — The City of Toronto has re-appointed, for a further term of three years, its three representatives on the Commission, viz., Lieut. Governor Lionel Clarke, Mayor T. L. Church and R. Home Smith. The other members of the Commission are John Laxton, appointed by the Dominion Government, and R. S. Gourlay, appointed by the Dominion Government on the Toronto Board of Trade's nomination. Their terms of office expired Oct. 22 and at the time of writing no announcement had been made as to the re-appointment.

## Port Arthur Shipbuilding Co.'s Annual Report.

Following are extracts from the Port Arthur Shipbuilding Co. Ltd. annual report for the year ended June 30, 1920:—

The company has this year experienced a reduction in gross earnings due to a decrease in volume of business. The falling off of work has been in ships for new construction; business from dry dock and repair work being very satisfactory, showing an increase of 80% over last year. A falling off in the building of ships has been general, affecting all the shipyards in Canada. The chief causes have been the international exchange situation, which has operated against Canadian yards securing contracts from European countries requiring tonnage, and the cessation of building by the Canadian Government.

Of ships, construction of which was commenced last year, the company completed and delivered four freight steamships of 3,400 d.w. tons each, and launched two freight steamships of approximately 4,500 d.w. tons each, which will be completed and delivered one in September and one in October. All of these ships are for the Canadian Government Merchant Marine fleet. New ship construction commenced this period consists of one freight steamship of approximatly 4,000 d.w. tons for the Canadian Government, and one freight steamship of about 3,000 d.w. tons.

In view of the present situation in regard to ship construction, your directors have deemed it advisable to authorize the company to enter upon other work than shipbuilding to which your plant is adaptable. Work has already been commenced upon a contract for 20 compressed air mine shovels for one company, and negotiations with other companies requiring this class of machine have advanced to a point where other contracts seem assured. The undertaking of other suitable work, including the manufacture of pulp machinery and digesters, is also contemplated. If nothing unforeseen arises to interfere with plans at present under consideration, which appear as far as investigation has gone to be entirely feasible, developments along these lines may, within a short time, result in an amount of business equal to, if not greater, than the falling off in new construction, and this at very small additional capital expenditure.

During the year the company redeemed $126,500 par value of preferred stock, and retired $60,000 par value of mortgage bonds. Capital expenditures made this year have been for ordinary additions and betterments only, including the installation of some improved machinery, and amounted to $94,846. A recent appraisal of the company's permanent assets, book value of which is $2,091,522, shows the present net cash value to be $3,250,000.

**Financial Statement, June 30, 1920.**

ASSETS.

| | |
|---|---|
| Cash, accounts receivable and merchandise inventory | $1,088,960.65 |
| Construction work in process | 1,974,027.15 |
| Land, buildings, machinery, etc. (less depreciation) | 2,091,522.13 |
| Good will | 713,359.51 |
| Miscellaneous accounts, notes and prepaid expenses | 114,292.69 |
| | $5,982,162.13 |

LIABILITIES.

| | |
|---|---|
| Acceptances, accounts payable and accrued | $ 166,274.40 |
| Dividends payable | 49,141.00 |
| Provision for Dominion tax (estimated) | 241,512.95 |
| Advances on construction contracts | 1,801,910.00 |
| Bonded debt | 450,000.00 |
| Reserves for construction work | 127,701.92 |
| Capital stock— | |
| Preferred, 7% cumulative | $ 665,200.00 |
| Common | 1,500,000.00 |
| | 2,165,200.00 |
| Surplus | 980,421.86 |
| | $5,982,162.13 |

**Earnings for June 30, 1920.**

| | |
|---|---|
| Gross profit from operations after deducting cost of material, labor, and manufacturing overhead | $ 538,369.28 |
| Less, general and administrative expense | 164,183.24 |
| | $ 374,186.04 |
| Add, miscellaneous income | 109,110.08 |
| | $ 483,296.12 |
| Deduct, amortization of plant additions, bond interest and miscellaneous charges, including estimated Dominion tax | 182,081.56 |
| Net earnings for year | $ 301,214.56 |

The directors are: Jas. Whalen, Port Arthur, President; P. G. Chace, Port Arthur, First Vice President; R. D. Hubbart, Chicago, Second Vice President; A. J. McComber, Port Arthur, Third Vice President; Jno. Burnham and E. W. Rogers, Chicago, and Jas. Playfair, Midland, Ont. The principal officials are: J. H. Smith, General Manager; A. B. Conmee, Secretary-Treasurer, and N. S. Thrasher, Purchasing Agent.

## Oil Fuel Results on s.s. Empress of Britain.

Engineer Rear Admiral G. W. Roome, O.B.E., Chief Superintendent Engineer, Canadian Pacific Ocean Services, London, Eng., is reported to have made the following statement recently, on oil versus coal for liners, as exemplified by the recent double voyage of the reconditioned Empress of Britain between Liverpool and Quebec:—

"The use of oil fuel on this double trip of the Empress of Britain was an unqualified success, about 20% above the full power designed was obtained on the trip westward. The speed was as great as the fastest run ever made when the ship was new. The run eastward was intended to show the most economical possible running to maintain the scheduled time on arrival. The speeds were approximately, 18¼ knots outward, and 17½ knots homeward.

"The whole installation for burning oil fuel worked perfectly throughout, and the machinery, which is now 14 years old, did not give the slightest trouble. At present it is more expensive to burn oil than coal, but the wage cost of about 100 men is saved, with the consequent reduction in the pay and food account. There is also a saving in the cost of cleaning the ship. The inherent dustiness of coaling used to involve days of cleaning work by 300 to 400 men each trip. Also, only half a dozen men are required to put oil on board, whereas 150 to 200 were required to coal the ship. Finally, with oil, a more uniform steam pressure is obtainable, and less dirt forms in the boilers and furnaces, all of which lead to economy.

"Experience over a period will show whether there will be a total saving in cost. We have four ships being built, all fitted to burn oil fuel only. A trial with them will decide whether we will have our other ships converted from coal to oil."

## Navigation Lights on Great Lakes and St. Lawrence River.

All Canadian lights and fog alarms on Lake Superior will be kept in operation this autumn until the close of navigation, with the exception of those at Otter Island, Caribou Island, Quebec harbor, Davieux Island, and Michipicoten Island east end, which will be closed on Dec. 15, and with the exception of Gargantua, Michipicoten harbor, Corbeil Point, and Ile Parisienne, which will be closed on Dec. 20; also Slate Island, Battle Island, Lamb Island, Shaganash, Point Porphyry, Thunder Cape, Welcome Island, Pie Island, and Victoria Island, which will be closed after the last sailing to or from Port Arthur and Fort William. All Canadian lights and fog alarms on Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie, Lake Ontario, and connecting waters, will be maintained in operation until the close of navigation, excepting the southeast shoal lightship, Lake Erie, which may be removed after Dec. 1, and also Lonely Island light, Georgian Bay, which may be closed before the general close of navigation. All Canadian lights on the River St. Lawrence will be maintained in operation until the close of navigation. All gas buoys and other floating aids to navigation will be maintained in position as long as ice conditions will permit, and in cases where it is necessary to remove gas buoys before the close of navigation, the more important points will be marked by spars.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during September, 1920:

| Articles | | | Canadian Canal | U.S. Canal | Total |
|---|---|---|---|---|---|
| Lumber | Eastbound | M. ft. B. M. | 2,372 | 30,020 | 32,392 |
| Flour | " | Barrells | 151,460 | 469,550 | 621,010 |
| Wheat | " | Bushels | 2,253,015 | 9,371,473 | 11,624,448 |
| Grain, other than wheat | " | Bushels | 838,000 | 2,264,770 | 3,102,770 |
| Copper | " | Short tons | 1,658 | 4,809 | 6,467 |
| Iron Ore | " | Short tons | 169,966 | 8,551,446 | 8,721,412 |
| Pig Iron | " | Short tons | ..... | ..... | ..... |
| Stone | " | Short tons | 2,137 | 3,200 | 5,337 |
| General Merchandise | " | Short tons | 600 | 2,373 | 2,973 |
| Passengers | " | Number | 2,824 | 1,956 | 4,780 |
| Coal, soft | Westbound | Short tons | 42,364 | 1,998,410 | 2,040,774 |
| Coal, hard | " | Short tons | ..... | 177,123 | 177,123 |
| Iron Ore | " | Short tons | ..... | 26,320 | 26,320 |
| Manufactured Iron and Steel | " | Short tons | 4,125 | 1,146 | 5,271 |
| Salt | " | Short tons | 1,768 | 12,.616 | 14,384 |
| Oil | " | Short tons | ..... | 60,627 | 60,627 |
| Stone | " | Short tons | ..... | 71,844 | 71,844 |
| General Merchandise | " | Short tons | 31,062 | 30,597 | 61,659 |
| Passengers | " | Number | 3,025 | 1,160 | 4,185 |
| **Summary** | | | | | |
| Vessel Passages | | Number | 490 | 2,184 | 2,674 |
| Registered Tonnage | | Net | 645,616 | 7,823,527 | 8,469,143 |
| Freight—Eastbound | | Short tons | 285,662 | 9,004,467 | 9,290,129 |
| Westbound | | Short tons | 79,319 | 2,378,683 | 2,458.002 |
| Total Freight | | Short tons | 364,981 | 11,383,150 | 11,748,131 |

# Canadian Government Merchant Marine Ltd., Shipbuilding, Operation, Etc.

Passenger Accommodation for West Indian Trade.—As stated in Canadian Railway and Marine World for October, the upper structures of the steel cargo steamships Canadian Fisher and Canadian Forester, each approximately 5,100 d.w. tons, which are being built by Tidewater Shipbuilders Ltd., Three Rivers, Que., for Canadian Government Merchant Marine, have been changed from the original plans, so as to provide accommodation for 28 passengers on each ship. The Canadian Fisher was launched Aug. 14, and Canadian Forester, Sept. 20, and it is expected that they will start running, early in 1921, for the winter season, between St. John, N.B., the Bahamas, Jamaica and British Honduras, as provided for in the Canada-West Indies Trade Agreement, entered into at Ottawa in July, between the Dominion Government and the governments of the other colonies mentioned, which calls for a fortnightly service.

The last four steel cargo steamships ordered by the Marine Department from Canadian Vickers Ltd., Montreal, for Canadian Government Merchant Marine, each of approximately 8.390 d.w. tons, viz., Canadian Victor, which was delivered Aug. 25; Canadian Conqueror, which was delivered Sept. 30; Canadian Commander, the launching of which was fixed for Oct. 20, are each being provided with accommodation for four passengers, so that commercial travellers and others may be carried. The accommodation, which is located on the bridge deck, consists in each ship of 2 staterooms, one outside and one inside, each 9 x 12 ft., and each containing two berths, sofa, wardrobe and folding lavatory; dining room 18 x 12 ft., containing 2 tables, each with 3 chairs and couch, to accommodate 12 at a sitting; smoking room, 18 x 12 ft., containing 2 tables, 4 chairs, and couch seats all round. Illustrations of these rooms on s.s. Canadian Victor are given herewith.

Keel Laying.—Since Canadian Railway and Marine World for October was issued we have been advised of the following laying of keel for steel cargo steamship for Canadian Government Merchant Marine.

Oct. 14, s.s. Canadian Skirmisher; Marine Department contract 56; builder's yard no. 104; approximately 8,390 d.w. tons; Wallace Shipbuilding & Dry Dock Co., North Vancouver, B.C.

Launching of Steamships.—Since Canadian Railway and Marine World for October was issued, we have been advised of the following launchings of steel cargo steamships for Canadian Government Merchant Marine.

Sept. 29, s.s. Canadian Traveller; Marine Department contract 30; builder's yard no. 22; approximately 8,390 d.w. tons, Harbour Marine Co., Victoria, B.C.

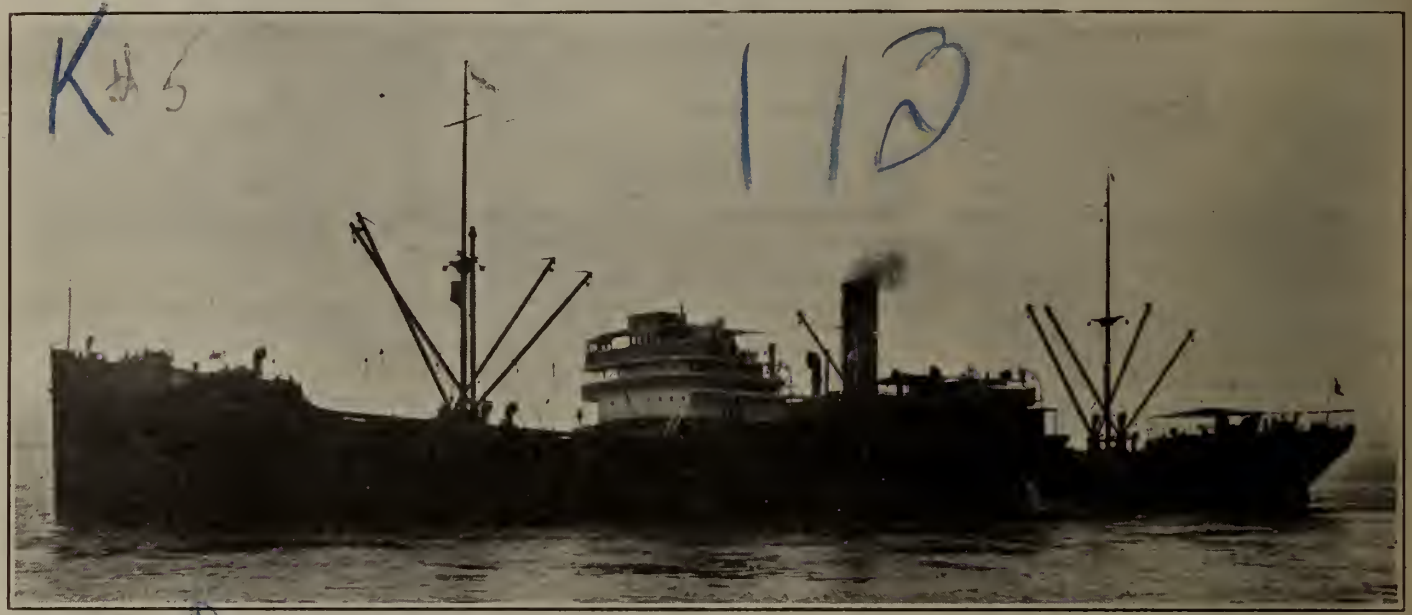
Oct. 14, s.s. Canadian Highlander; Marine Department contract 55; builder's yard no. 103; approximately 8,390 d.w. tons; Wallace Shipbuilding & Dry Dock Co., North Vancouver, B.C.

Oct. 19, s.s. Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont.

Oct. 30, s.s. Canadian Commander; Marine Department contract 52; builder's yard no. 79; approximately 8,390 d.w. tons, Canadian Vickers Ltd.

Deliveries of Steamships.—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following have been delivered to Canadian Government Merchant Marine, for operation.

Sept. 30, s.s. Canadian Conqueror; Ma-



Steel Cargo Steamship, Canadian Victor, 8,433 d.w. tons, built for Canadian Government Merchant Marine, Ltd., by Canadian Vickers, Ltd., Montreal.

Passenger Stateroom, s.s. Canadian Victor, Canadian Government Merchant Marine Ltd.

rine Department contract 51; builder's yard no. 78; approximately 8,39 d.w. tons; Canadian Vickers Ltd., Montreal. This ship loaded a general cargo at Montreal, and sailed thence, Oct. 5, for Liverpool.

Corner of Dining Room, s.s. Canadian Victor, Canadian Government Merchant Marine Ltd.

Oct. 4, s.s. Canadian Runner; Marine Department contract 32; builder's yard no. 43; approximately 4,350 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont. This ship, after taking a cargo of coal from Port Arthur to Port Colborne, was cut in two for taking through the Welland and St. Lawrence canals, and was joined together at Canadian Vickers Ltd. plant at Montreal. After delivery to Canadian Government Merchant Marine, she loaded a cargo of lumber at Campbellton, N.B., for the United Kingdom.

Oct. 15, s.s. Canadian Carrier; Marine Department contract 33; builder's yard no. 43; approximately 4,350 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont., This ship was cut in two on Lake Erie, to go through the Welland and St. Lawrence canals, and was joined together at Canadian Vickers Ltd. plant at Montreal. After delivery to Canadian Government Merchant Marine, she loaded a general cargo at Montreal for Glasgow and was expected to sail thence about Oct. 26.

**Officers of Steamships.**—The following officers have been appointed to Canadian Government Merchant Marine steamships since those mentioned in our last issue:—

Masters.—Canadian Carrier, Capt. H. W. Robson; Canadian Highlander, Capt. R. J. Fisher, formerly of Canadian Trooper; Canadian Signaller, Capt. D. O. Davies, vice Capt. R. D. Maxwell, transferred; Canadian Trader, Capt. G. Foy, vice Capt. J. Murray; Canadian Trooper, Capt. R. D. Maxwell, formerly of Canadian Signaller, vice Capt. R. J. Fisher transferred; J. A. McKee, Capt. J. F. Smeltzer, vice Capt. J. Lintlop; Sheba, Capt. M. Fraser, vice Capt. J. C. Shaw, deceased.

Engineers.—Sheba, J. A. McLarty; T. J. Drummond, C. B. Scott.

**Canadian Coaster Ltd.** has been incorporated, under the Dominion Companies Act, as another Canadian Government Merchant Marine Ltd. subsidiary, to operate the steamship Canadian Coaster, approximately 8,390 d.w. tons, built recently by Collingwood Steamship Co.

**British American Shipbuilding Co.**, Welland, Ont., advised us Oct. 13 that the two sections of the s.s. Canadian Squatter, which was cut in two to go through the Welland and St. Lawrence canals, were docked on Oct. 13, at Canadian Vickers Ltd. plant, Montreal, and that it was expected to have them joined together, and the ship delivered to Canadian Government Marine by the end of October.

**Canadian Vickers Ltd.**, Montreal, delivered the steel cargo steamship Canadian Conqueror; Marine Department contract 51; builder's yard no. 78; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine, on Sept. 30. She was loaded with general cargo at Montreal, and sailed Oct. 5 for Liverpool.

Canadian Vickers Ltd. advised us Oct. 12 that it expected to launch steel cargo steamships for Canadian Government Merchant Marine as follows:—s.s. Canadian Commander; Marine Department contract 52; builder's yard no. 79; approximately 8,390 d.w. tons; on Oct. 30. Canadian Leader; Marine Department contract 53; builder's yard no. 80; approximately 8,390 d.w. tons; on Nov. 20.

Canadian Vickers Ltd., launched the steel cargo steamship Canadian Commander; Marine Department contract 52; builder's yard no. 79; approximately 8,390 d.w. tons; on Oct. 30, the christening being performed by Mrs. C. C. Ballantyne, wife of the Minister of Marine and Fisheries and of the Naval Service.

**Collingwood Shipbuilding Co.**, Collingwood, Ont., launched the steel cargo steamship Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons, for Canadian Government Merchant Marine, Oct. 19, the christening being performed by Mrs. H. B. Smith, wife of the Collingwood Shipbuilding Co.'s President.

After the launching, Mr. Smith entertained a number of the business and professional men of Collingwood at luncheon there, and in speaking referred to the Collingwood Shipbuilding Co.'s industry, and in regard to shipbuilding and steel manufacturing generally. J. S. Leitch, Managing Director, responded to the toast of the company, which was proposed by the Mayor.

Corner of Smoking Room, s.s. Canadian Victor, Canadian Government Merchant Marine Ltd.

**J. Coughlan & Sons**, Vancouver, B.C., advised us Oct. 6 that they expected to lay the keels of steel cargo steamships Canadian Transporter and Canadian

Freighter; Marine Department contracts 62 and 63; builder's yard nos. 20 and 21; each approximately 8,390 d.w. tons; shortly thereafter.

Dominion Shipbuilding & Repair Co., Toronto, when it assigned on July 31, had under construction for Canadian Government Merchant Marine, two steel cargo steamships, Canadian Pathfinder and Canadian Engineer, each approximately 3,500 d.w. tons. They were both in frame, awaiting shell plates before further erection of the hulls could be proceeded with. As stated in Canadian Railway and Marine World for October, the interim liquidator, Osler Wade, intimated to the Marine Department his willingness to cooperate, so that the loss sustained by the Government might be reduced to the minimum, either by the liquidator continuing the work on a cost plus basis, or by permitting the Government to proceed itself. The liquidator advised us Oct. 13 that the court had made an order directing him to deliver the hulls, engines, etc., to the Dominion Government, and that bills of sale had been executed, but that he had not had any advice as to when the Government proposed to commence operations for the completion of the ships.

Halifax Shipyards Ltd., Halifax, N.S., expects to deliver the steel cargo steamship Canadian Mariner; Marine Department contract 21; builder's yard no. 1; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine; between Nov. 15 and 20.

The company expects to launch the steel steamship Canadian Explorer; Marine Department contract 22; builder's yard no. 2; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine; early in December.

The launching dates of steel cargo steamships Canadian Cruiser and Canadian Constructor; Marine Department contracts 38 and 39; builder's yard nos. 3 and 4; each approximately 10,500 d.w. tons; will depend entirely on weather conditions during the winter, but if they are normal the launchings will probably be in April and June, 1921.

Harbour Marine Co., Victoria, B.C., launched the steel cargo steamship Canadian Traveller; Marine Department contract 30; builder's yard no. 2; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine; Sept. 29, the christening being performed by Mrs. McIntosh, wife of J. C. McIntosh, M.P. for Nanaimo. We are advised that this is the 153rd ship to be built under the direction of J. S. Clark, M.I.N.A., who is now the company's naval architect. Ex-service men provided 85% of the labor for this ship.

Harbour Marine Company expects to deliver the steel cargo steamship Canadian Winner; Marine Department contract 29; builder's yard no. 1; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine, during the first week in November.

Nova Scotia Steel & Coal Co., New Glasgow, N.S.—We were advised Oct. 5, that the contract between this company and the Marine Department, for building the steel cargo steamship Canadian Sapper; Marine Department contract 59; builder's yard no. 8; approximately 2,800 d.w. tons; for Canadian Government Merchant Marine, had been agreed upon and was in the Department's hands for signature.

The company expects to launch the s.s. Canadian Sapper on November 9.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—The steel cargo steamship s.s. Canadian Runner, Marine Department contract 32; builder's yard no. 43; approximately 4,350 d.w. tons, built by this company for Canadian Government Merchant Marine, and which left Port Arthur, Aug. 8, with a cargo of grain for Port Colborne, was cut in two for taking through the Welland and St. Lawrence canals, and was joined together at Canadian Vickers Ltd. plant, Montreal, being delivered to Canadian Government Merchant Marine for operation on Oct. 4. She loaded a cargo of lumber at Campbellton, N.B., for the United Kingdom.

The s.s. Canadian Carrier; Marine Department contract 33; builder's yard no. 44; approximately 4,350 d.w. tons; built by the Port Arthur Shipbuilding Co. for Canadian Government Merchant Marine, and which was cut in two on Lake Erie, to go through the Welland and St. Lawrence canals, and was joined together at Canadian Vickers Ltd. plant at Montreal, was delivered to Canadian Government Merchant Marine, for operation, on Oct. 15, when she proceeded to load a general cargo for Glasgow and was expected to sail from Montreal about Oct. 26.

The company advised Canadian Railway and Marine World recently that it expected to launch the steel cargo steamship Canadian Harvester; Marine Department contract 61; builder's yard no. 45; approximately 3,890 d.w. tons; for Canadian Government Merchant Marine, on Oct. 30.

Wallace Shipbuilding & Dry Dock Co., North Vancouver, B.C., which laid the keel of the steel cargo steamship Canadian Highlander; Marine Department contract 55; builder's yard no. 103; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine, on Mar. 30, launched her on Oct. 4.

The company laid the keel of the steel cargo steamship Canadian Skirmisher; Marine Department contract 56; builder's yard no. 104; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine on Oct. 14.

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The Bear River Steamship Co. Ltd., the incorporation of which, with office at Bear River, N.S., was announced in a recent issue, has an authorized capital of $150,000 and intends operating a steam packet service between Bear River, N.S., and St. John, N.B. It will take over the shipping business carried on heretofore by Clark Brothers, Ltd., Bear River. The company has a subsidy from the Provincial Government of $650 a year for a local steamship service and at one time the Dominion Government also gave a subsidy. The officers are:—President, W. W. Clark; Vice President, A. G. McIntyre; Secretary, J. H. Cunningham.

## The Necessity of Increasing British Shipbuilding Urged.

The recent congress of chambers of commerce of the British Empire, in Toronto, adopted the following resolution, moved by E. P. Fredericks, Secretary Manager, Belleville, Ont., Chamber of Commerce:—"That the British merchant marine be maintained in its commanding position and that every colony possessing the facilities to aid in this purpose be encouraged to maintain shipyards and to contribute all the British bottoms possible, thus retaining for the benefit of the Empire the skilled mechanics who are being sought by other countries, and also to ensure British marine supremacy."

In supporting the resolution, Mr. Fredericks said it was inspired by the apparent falling off in British shipbuilding operations, which had been made evident by the fact that Canada, as well as the mother country, has within the past year lost several thousand mechanics skilled in shipbuilding work, because of the letting down of shipbuilding operations of this character throughout the Empire. He pointed out that the clearances at Canadian ports as well as ships passing through the Panama Canal, indicated that other countries were pressing the British Empire very closely in the number of ships in commission, and that, where three or four years ago Great Britain had a commanding lead, the figures of the past year showed that the margin in her favor was so slight as to be almost negligible. He contended that if the British supremacy on the sea was to be maintained, and if the extension of trade throughout the world was to be realized, it would be necessary to keep shipbuilding very prominently in the foreground of present activities.

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Prince Edward Island Car Ferry Service.—In consequence of the large freight traffic between Prince Edward Island and the mainland of New Brunswick, particularly in potatoes, it was thought possisible, early in the autumn, that the car ferry steamship Prince Edward Island might not be able to handle all the business offering. We were advised Oct. 1, that the car ferry Scotia No. 1, used heretofore on Canso Strait, had been altered at one end, so that she could be operated between Port Borden, P.E.I., and Cape Tormentine, N.B., and that if the business warranted it she would be put on that route, to assist the car ferry Prince Edward Island, and would be kept running until ice conditions and storms were too heavy to permit of her operating.

## Ships Added to and Deducted From the Canadian Register During July, 1920

| | Steam. | | | Sailing. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| Added. | No. | Gross. | Registered. | No. | Gross. | Reg'red |
| Built in Canada | 31 | 6,983 | 4,084 | 12 | 2,036 | 1,865 |
| Purchased from foreigners | 7 | 6,754 | 3,918 | .... | ..... | ..... |
| Transferred from British Possessions | 1 | 229 | 54 | .... | ..... | ..... |
| Other ships | 2 | 54 | 50 | .... | ..... | ..... |
| Added on remeasurements | 2 | 27 | 24 | .... | ..... | ..... |
| Totals | 43 | 14,047 | 8,130 | 12 | 2,036 | 1,865 |
| Deducted. | | | | | | |
| Wrecked or otherwise lost | 4 | 66 | 49 | 12 | 1,194 | 1,150 |
| Broken up or unfit for use | 17 | 1,706 | 1,137 | 18 | 1,329 | 1,051 |
| Sold to foreigners | 5 | 3,801 | 2,639 | 1 | 17 | 17 |
| Transferred from British Possessions | 2 | 953 | 593 | 3 | 274 | 249 |
| New registers | .... | ..... | ..... | 2 | 78 | 78 |
| Other vessels | 1 | 192 | 49 | .... | ..... | ..... |
| Totals | 29 | 6,718 | 4,467 | 36 | 2,892 | 2,545 |

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with tbe finally ascertained deadweight tons multiplied by the price per ton,the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of tbe vessels to be built: s.d., single deck; 2.d., two deck; 3.d., three deck: lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4.575 | $207. | $ 947,025 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11. 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " | 67 | *8,408 | 180. | 1,513,440 | 2.d.. p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3. 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbldg. Co., C'wood. | 61 | *3,995 | 205. | 818,975 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21. 1918 | Apr. 26. 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipbldg. & Dry Dock Co. | 100 | *4.495.75 | 207. | 930,620.25 | 2.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1. 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | *4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | 2.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9. 1919 | Nov. 15. 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5.100 | 210. | 1,071,000 | 2.d., p., b. and f'c's'le | " | 11 | May 31. 1919 | Dec. 11. 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbldg. Co., C'wood. | 62. | *3.964 | 205. | 812,620 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Jan. 3, 1919 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | *3,975 | 205. | 814,926.25 | 2.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28. 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | *3,978 | 205. | 815,541.25 | 2.d., p., b. and f'c's'le | " | 9 | Feb. 10. 1919 | Oct. 4. 1919 | Nov. 6. 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1.020,000 | S.d., p.. b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20. 1919 | Dec. 2. 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | *4,850 | 200. | 967,000 | 2.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1. 1919 | July 11, 1920 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 20. 1919 | Aug. 14. 1920 | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5.100 | 200. | 1,020,000 | 2.d.. p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | Sept. 20, 1920 | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | *4,992 | 200. | 998,400 | 2.d., p., b. and f'c's'le | " | 12 | Mar. 11. 1919 | Oct. 9. 1919 | June 24, 1920 |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | *4,992 | 200. | 998,400 | 2.d., p., b. and f'c's'le | " | 12 | Mar. 28. 1919 | May 7. 1920 | Aug. 10. 1920 |
| 19 | Sept. 4. 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | *3.341 | 205. | 684,905 | Lake, s.d., p.. b. and f'c's'le | " | 10½ | Dec. 9. 1918 | May 5, 1919 | July 18. 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3.408 | 210. | 715,680 | Lake, s.d., p., b. and f'c's'le | " | 10 | Mar. 31. 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | *3.357 | 205. | 688.185 | Lake, s.d., p., b. and f'c's'le | " | 10½ | Dec. 10. 1918 | May 31. 1919 | Aug. 7. 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3.406 | 210. | 715,207.50 | Lake. s.d., p., b. and f'c's'le | " | 10 | Mar. 31, 1919 | Oct. 9. 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1.636.050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24. 1919 | Sept. 4, 1920 | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " | 2 | 8.390 | 195. | 1.636.050 | 2.d.. p.. b and f'c's'le | " | 10 | Mar. 15, 1919 | | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | *4,581 | 215. | 984.915 | 2.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18. 1919 | Nov. 22. 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8.382 | 188. | 1.575,816 | 2.d.. p., b and f'c's'le | " | 11 | Aug. 26. 1918 | Apr. 19, 1919 | May 23. 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8.391 | 188. | 1,577.508 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30. 1918 | May 7. 1919 | Aug. 14. 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | *8.390 | 188. | 1.577,320 | 2.d.. p.. b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16. 1919 | Sept. 24. 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8,393 | 188. | 1,577,884 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23. 1919 | Nov. 8, 1919 | Dec. 6. 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | *8,399.30 | 188. | 1.579,068.40 | 2.d.. p.. b and f'c's'le | " | 11 | May 10. 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Winner | Harbour Marine Co. Ltd. | 1 | 8.390 | 198. | 1.661,220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | June 29. 1920 | ..... |
| 30 | Jan. 24, 1919 | Canadian Traveller | " " | 2 | 8.390 | 198. | 1.661.220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | Sept. 29. 1920 | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co.. Kingston | 15 | *.3,972.50 | 205. | 855.348.54 | 2.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7. 1919 | Dec. 10. 1919 | May 11. 1920 |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4.350 | 215. | 935,250 | 2.d., p., b. and f'c's'le | " | 11 | Aug. 29, 1919 | May 8. 1920 | Oct. 4. 1920 |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,350 | 215. | 935.250 | 2.d., p., b. and f'c's'le | " | 11 | Aug. 29. 1919 | June 26. 1920 | Oct. 15. 1920 |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | *8,381 | 198. | 1,659.438 | 2.d.. p.. b and f'c's'le | Lloyd's | 11 | Apr. 26, 1919 | Dec. 6, 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | *8,380 | 198. | 1,659.240 | 2.d., p.. b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | Mar. 6, 1920 |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | *8.350 | 198. | 1,653,300 | 2.d.. p., b and f'c's'le | " | 11 | July 24. 1919 | Jan. 24, 1920 | July 17. 1920 |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | *8.350 | 198. | 1,653.300 | 2.d.. p., b and f'c's'le | " | 11 | Sept. 26. 1919 | Feb. 24, 1920 | June 15. 1920 |
| 38 | Dec. 10. 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10.500 | 197.50 | 2.073.750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10. 1918 | Canadian Constructor | " " | 4 | 10.500 | 197.50 | 2,073.750 | 3.d. p.. and f'c's'le | " | 12 | Oct. 6. 1919 | ..... | ..... |
| 40 | Mar. 31, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | *2.776.50 | 210. | 583.065 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8. 1919 | Dec. 20. 1919 |
| 41 | Mar. 31, 1919 | Canadian Miner | " | 6 | *2.778 | 210. | 583,380 | S.d.. p.. b. and f'c's'le | " | 8½ | Mar. 31. 1919 | Apr. 3, 1920 | May 7, 1920 |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1.661.220 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21. 1919 | Canadian Thrasher | " " | 2 | 8,390 | 198. | 1.661,220 | 2.d., p.. b and f'c's'le | " | 11 | Oct. 20. 1919 | ..... | ..... |
| 44 | Jan. 23. 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983.625 | 2.d., p., b. and f'c's'le | " | 11 | Mar. 29. 1919 | Apr. 13, 1920 | Aug. 18, 1920 |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " | 5 | 4.575 | 215. | 983.625 | 2.d., p., b. and f'c's'le | " | 11 | July 14. 1919 | July 26. 1920 | ..... |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbldg. Co., C'wood. | 65 | *3,954 | 180. | 711,720 | 2.d.. p., b. and f'c's'le | " | 11 | Sept. 3. 1919 | Dec. 27. 1919 | Apr. 28. 1920 |
| 47 | Sept. 11, 1919 | Canadian Observer | " " | 66 | *3.981.75 | 180. | 712,910 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | May 8, 1920 | June 15, 1920 |
| 48 | Sept. 2, 1919 | Canadian Pathfinder | Dominion Shipbuilding & Repair Co | 10 | 3,500 | 180. | 630.000 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | Nov. 8. 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " | 11 | 3,500 | 180. | 630.000 | Lake. s.d.. p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8.390 | 170. | 1,426.300 | 2.d. p.. b. and f'c's'le | Lloyd's | 11 | Dec. 10. 1919 | June 22. 1920 | Aug. 25, 1920 |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8.390 | 170. | 1,426.300 | 2.d. p., b. and f'c's'le | " | 11 | Jan. 17. 1920 | July 27, 1920 | Sept. 30. 1920 |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8.390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | June 2, 1920 | Oct. 30, 1920 | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8.390 | 170. | 1,426.300 | 2 d. p., b. and f'c's'le | " | 11 | June 29. 1920 | ..... | ..... |
| 54 | Feb. 26. 1920 | Canadian Logger | Midland Shipbuilding Co. | 10 | 3,890 | 182.50 | 709,925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | June 9. 1920 | ..... | ..... |
| 55 | Mar. 18, 1920 | Canadian Highlander | Wallace Shipbldg. & Dry Dock Co. | 103 | 8.390 | 167.50 | 1,405,325 | 2.d. p.. b. and f'c's'le | Lloyd's | 11 | Mar. 30. 1920 | Oct. 14, 1920 | ..... |
| 56 | Mar. 18, 1920 | Canadian Skirmisher | " " " | 104 | 8.390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | Oct. 14, 1920 | ..... | ..... |
| 57 | Mar. 13, 1920 | Canadian Rover | Collingwood Shipbldg. Co., C'wood. | 67 | 3,890 | 182.50 | 709,925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | June 5. 1920 | Oct. 19, 1920 | ..... |
| 58 | Mar. 13, 1920 | Canadian Coaster | Collingwood Shipbldg Co., Kingston | 16 | 3.890 | 185.50 | 709,925 | 2.d., p., b. and f'c's'le | " | 11 | May 6, 1920 | ..... | ..... |
| ..... | ..... | Canadian Sapper | Nova Scotia Steel & Coal Co. | 8 | 2.800 | 190. | 532.000 | 2.d., p., b. and f'c's'le | Lloyd's | 8½ | May 4. 1920 | ..... | ..... |
| 60 | Feb. 2. 1920 | Canadian Challenger | Davie Shipbuilding & Repairing Co. | 476 | 8.390 | 167.50 | 1.405.325 | 2.d. p., b. and f'c's'le | " | 11 | May 14. 1920 | ..... | ..... |
| 61 | Feb. 26. 1920 | Canadian Harvester | Port Arthur Shipbuilding Co. | 45 | 3,890 | 182.50 | 709.925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | Mar. 30, 1920 | ..... | ..... |
| 62 | April 7, 1920 | Canadian Transporter | J. Coughlan & Sons | 20 | 8.390 | 167.50 | 1,405.325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 63 | April 7, 1920 | Canadian Freighter | " | 21 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 379,296.80 | | $72,818,073.19 | | | | | | |

# General Shipbuilding Matters Throughout Canada.

B.C. Marine Ltd., Vancouver, B.C., advised Canadian Railway and Marine World recently that it expected to launch the auxiliary powered schooner, which it is building for the Hudson's Bay Co., about the end of October, or early in November, and to deliver the completed ship by the end of November.

B.C. Marine Engineers & Shipbuilders Ltd., Vancouver, B.C., which was incorporated recently, as stated in Canadian Railway and Marine World for October, to acquire B.C. Marine Ltd., as a going concern, has been organized, with the following directors:—Innes Hopkins, Chairman and Managing Director; J. K. McKenzie, General Superintendent; C. J. Isted, Secretary; G. G. Bushby, H. F. Buller, Capt. W. M. Crawford.

Steel Cargo Steamship, City of Vancouver, approximately 8,800 d.w. tons, built for Vancouver Steamships Ltd., by J. Coughlan & Sons, Vancouver, B.C.

**Canada Steamship Lines.** — We were advised Oct. 2, that it had not been decided whether to fabricate the material for this company's 4,000 passenger steamship, for the Toronto-Niagara route, at Collingwood, and ship it to Toronto for erection, or to have it fabricated at Toronto. At stated in Canadian Railway and Marine World for September, the steel has been ordered, but it is impossible to say when work on the ship will commence, as deliveries of steel are very uncertain.

**J. Coughlan & Sons,** Vancouver, B.C.—The s.s. City of Vancouver, which was launched Sept. 10, as announced in our last issue, underwent her trial trips Oct. 2, when she attained a speed of 12.3 knots over the measured mile, and passed her endurance trial of six hours without a hitch. She is being operated by Vancouver Steamships Ltd., a subsidiary company of the builders, and loaded lumber at Vancouver recently for the United Kingdom.

**Fraser, Brace, Ltd.** has been incorporated under the Dominion Companies Act as a private company, with $550,000 authorized capital, and office at Montreal, to take over the shipyards and other businesses of Fraser, Brace & Co. Ltd., and Fraser, Brace Shipyards Ltd.

**Harbour Marine Co,** Victoria, B.C., reports that good progress is being made in building the car ferry for the C.P.R. and that it should be ready for launching early in November.

**Newfoundland.**—Canadian Trade Commissioner W. B. Nicholson writes as follows:—"The shipbuilding industry was fairly active during the war, though not on a large scale. A Norwegian company operating at Harbour Grace went into liquidation, while other plants, anticipating a fall in prices through the belief that business was being overdone, reduced operations. Marine underwriters recorded a disastrous year for Newfoundland sailing ships, the losses of foreign and local ships numbered more than 130, exceeding anything in previous years. It is said that the tendency in future will likely be for the production of smaller ships, it being alleged that the timber available is not suitable for ships of more than 150 tons."

**Nova Scotia Steel & Coal Co.,** New Glasgow, N.S., completed its seventh steel cargo steamship, Volunda, approximately 2,800 d.w. tons, on Sept. 25. This ship, which will be employed in the coal and iron trade on the Atlantic coast, and to and from Newfoundland, was described in Canadian Railway and Marine World for September, pg. 510.

**Port Arthur Shipbuilding Co.,** Port Arthur, Ont.—The company's annual report, published on another page of this issue, refers to the construction of a steel cargo steamship of about 3,000 d.w. tons. We were advised, Oct. 11, that all the material for this ship was on hand, and that the keel would be laid about the end of October, the intention being to complete the ship by the opening of navigation next spring. It is being built on the company's account, and negotiations for its sale are going on.

**Wallace Shipbuilding & Dry Dock Co.,** North Vancouver, B.C., advised us, Oct. 15, that it expected to lay the keel for a steamship for the C.P.R. British Columbia Coast Steamship Service, about the end of October. Particulars of this ship were given in Canadian Railway and Marine World for October, pg. 564.

# Canadian Notices to Mariners.

The Marine Department has issued the following:—

**British Columbia, Queen Charlotte Islands.**—A gas beacon, consisting of a white acetylene light, automatically occulted at short intervals, visible 8 miles from all points of approach, at an elevation of 22 ft., on a concrete base, surmounted by a staff carrying a slatwork ball with light on top, has been established on the most easterly islet of the Straie Islet group on the west side of the entrance to Masset harbor.

The radiotelegraph station at Ikeda Point, call letters V.A.I., has been permanently discontinued.

**Newfoundland, Placentia Bay.** — The occulting white light on Point Verde has been replaced by a flashing white acetylene gas light showing 14 flashes every minute. The light is at an elevation of 90 ft. with square open wooden frame work with sloping sides.

Ragged Harbor.—A fixed white light on a red wooden stand has been established on White Point at the northwest entrance to Ragged Harbor. The light will only be in operation during open navigation.

Jacques Cartier Island.A flashing white acetylene light, giving one flash of 0.3 sec. duration every 3 sec., has been established on the northeast point of Jacques Cartier Island (Noble Island), at the entrance to Quirpon harbor. The light is at an elevation of 78 ft., and has a white square wooden structure with sloping sides surmounted by a red lantern.

**New Brunswick, Bay of Fundy.**—The St. John harbor range lights on the west side will be discontinued without further notice. The fixed white light on the northeastern corner of freight shed 16 will be changed to red light.

Northumberland Strait. — Temporary range lights have been fixed at St. Louis gully, Kouchibougouac Bay.

A green spar buoy has been established on the channel side of an old wreck, which lies about 900 ft. 57° from the north end of the south breakwater in Richibucto harbor, Northumberland Strait.

St. John Harbor.—A black wooden spar buoy has been established off Collins point at the entrance to Glenwood channel; a red wooden spar buoy has been established off the inner end of Catons Island bar and about 300 yards east of Glenwood public wharf.

Shippigan Island.—A fixed red light, shown from an anchor lens lantern, at an elevation of 26 ft., has been established on the warehouse, on the outer end of the wharf, at Lamek, on the west coast.

**North Atlantic Ocean.**—The captain of the steam trawler Commandant-Roquigny reported passing a capsized wooden ship on Sept. 6 in lat. n. 44° 6′ 0″, long. w. 52° 12′ 0″.

A floating mine was sighted Oct. 2 in lat. n. 47 53′ long. 38 5′.

**Nova Scotia, Cape Breton Island.** — The fixed white catoptric light on the summit of the middle of Sea Wolf Island at Margaree will be replaced by group occulting white lights of the second order, with the following characteristic:— light 6 sec, eclipse 3 sec, light 18 sec., eclipse 3 sec.

The group revolving white light on the summit of Henry Island, on the west coast, at the entrance to Port Hood, has been replaced by a flashing white catoptric light showing two flashes, with an interval of 7½ sec. between, every 30 seconds. For half the revolution, or 15 secs., the light will be totally eclipsed, and for the other half a fixed light of 500 c.p. will be visible, through which the flashes of 50,000 c.p. will show.

**Ontario, Lake Erie.** — The Dominion Public Works Department, during 1920, carried out the following dredging at Port Stanley,—the area between the entrance piers, the outer harbor, and in the car ferry slip to a least depth of 18 ft.; the channel between the piers running northerly from the outer end of the west pier to 675 ft. north of Government warehouse, to a least depth of 17 ft. for a width of 50 ft.; and the turning basin in the inner harbor to a least depth of 14 ft.

A steel cylindrical gas and bell buoy, painted in black and white vertical stripes, showing a white light, automatically occulted at short intervals, and with bell rung by motion of the waves, has been established on line of range about 3 miles from front range light at the entrance to Port Colborne.

Lake Huron.—W. W. Ransbury, Tobermory, reports the existence of a shoal in the main channel north of Cove Island. The locality will be examined by a Hydrographic Survey officer as soon as possible.

Lake Superior.—A diaphone fog alarm, operated by air compressed by an oil engine, giving two blasts of 2 secs. duration every minute, has been established, in a white square wooden building, near the edge of the cliff, about 400 ft. west of the lighthouse at Otter Island.

An uncharted rock has been discovered almost midway between the southwest corner of Commercial pier and the outer end of the railway wharf, at Michipicoten harbor. The following sextant angles fix the position of the rock,—flagstaff on Clergue Island 0°; east tangent of west point 104° 40′; southwest tangent of ore dock 64° 05′; back range light (old position) 98° 35′.

**Prince Edward Island.** — The Public Works Department has dredged berths at Charlottetown as follows; between Queens wharf and Buntin and Bell's wharf, a berth 345 ft. long, 80 ft. wide at the outer end and narrowing to 50 ft. at the inner end, to a depth of 20 ft. at the outer end, grading up to 14 ft. at the inner end; on the east side of the wharf a berth 425 ft. long, averaging 50 ft. wide, has been dredged to a depth of 20 ft. in the outer half and 12 ft. in the inner half; at the C.N.R. wharf on the west side a berth 400 ft. long and 110 ft.

**Steel Cargo Steamship Volunda, approximately 2,800 d.w. tons, built by Nova Scotia Steel & Coal Co., for its coal and iron trade on the Atlantic coast and to and from Newfoundland.**

wide has been dredged, the outer 75 ft. widening to 190 ft., to a depth of 20 ft. in front of the 225 ft., and 16 ft. for the remainder; on the west side of Pickard's wharf a berth 450 ft. long, averaging 80 ft. wide, has been dredged, the outer 100 ft. widening to 120 ft. and the inner 80 ft. narrowing to 30 ft., to a depth of 14 ft. for the outer 300 ft. and grading up to 12 ft. for the remainder.

Quebec, Gulf of St. Lawrence. — The steel lightship, with two masts and no bowsprit, has been replaced on her station in 22 fathoms, 8 miles, 104° from Heath Point, Anticosti. At the close of navigation in the Gulf of St. Lawrence she will be replaced on the Sambro station.

A new front range light has been established on the outer end of the Government wharf at Great Fox River, Gulf of St. Lawrence, consisting of a fixed red light, shown from a reflector lantern, at an elevation of 20 ft. The back range light has been placed 1,100 ft. 183 15′ from the front, and consists of a fixed red light, shown from a reflector lantern at an elevation of 35 ft.

Hydrographic information is issued relating to uncharted shoals off the Magdalen Islands, Gulf of St. Lawrence, as follows:—Clark shoal, 8¼ miles from Old Harry Head, at a depth of 21 ft.; Goodwin shoal, 6¾ miles from Old Harry Head, at a depth of 18 ft.; Glawson patch, 4½ miles from North Cape, at a depth of 5¾ fathoms. A shoal shown on the charts, 6 miles, 102° from Old Harry Head, does not exist, and should be expunged from charts. The Grindstone light 1033.5 in the list of lights is in lat. n. 47 23′ long. w. 61 50′ 45″, as given, and not in the position as shown on the chart.

Magdalen Islands.—A black wooden spar buoy has been established on the western end of Meule rock, about 1,500 ft. southwest from the outer end of the breakwater; and a red wooden spar buoy has been established on the east side of the channel, about ¾ mile off shore, in the entrance to House harbor, Church rock.

River St. Lawrence, below Quebec.—The Port Joli gas buy 65B will, without further notice, be moved to a new position 750 ft. 334° from its present position.

River St. Lawrence, Lake St. Louis.—A temporary steel cylindrical gas buoy, painted black, showing a fixed red light, has been established at the west entrance to the Lachine Canal.

United States, St. Clair River.—A gas buoy flashing a red light of 0.3 sec. duration every 3 secs. has been established to mark an isolated spot with a least depth of 18½ ft. off south end of Woodtick Island.

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St. John, N.B., Pilotage District.—The pilotage district of St. John, which has for some time been indirectly under the jurisdiction of the Minister of Marine, came directly under his jurisdiction Oct. 1, when the regulations as published in Canadian Railway and Marine World for October became effective. J. C. Chesley, Agent, Marine Department, at St. John, has been appointed acting Superintendent of Pilots, and G. U. Thomas, formerly Secretary of Pilotage Commission, has been appointed pilotage clerk. The pilotage office has been moved to the customs house and collections are being made through the collector of customs. The supperannuation office has been transferred to Ottawa and will be administered directly by the Marine Department.

## Wreck of Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert, which ran aground in Swanson Bay, B.C., 426 miles north of Vancouver, Sept. 29, and eventually sank in about 70 ft. of water, was built at Wallsend-on-Tyne, Eng., in 1910, with steel hull, and was screw driven by engine of 800 h.p. Her dimensions are,—length 306.7 ft., breadth 42.2 ft., depth 23.9 ft.; tonnage, 3,379 gross, 1,626 net.

She left Swanson Bay, B.C., bound north, Sept. 29, about 3.50 a.m., the weather being foggy, and closing in to thick fog as she entered the channel. She struck on the east side of the channel, 3½ or 4 miles north of Swanson, damaging herself so that holds 1 and 2 were both flooded, and making water very rapidly. As the captain could not find a proper place for beaching her, he started back for Swanson Bay, where the ship was beached at the mouth of the creek entering the bay. As she was beached on a soft bottim, it was seen that no immediate danger would occur and such steps as were possible were taken to protect other than the damaged holds being filled. The rising tide, however, soon made it advisable that passengers and crew be landed, which was done without unusual discomfort, no casualties nor accidents occuring. At about 11 a.m., the tide had risen so high that the main deck became flooded through the hatches of holds 1 and 2 and as a result the after portions of the ship, including boiler and engine spaces, filled, and she sank rapidly, taking an awkward list of from 55 to 60° to starboard, and resting in that position, her stern being in about 70 ft. of water. Most of the mails, express, passengers' check baggage, and all the cargo, excepting some iron on deck, were submerged.

The Pacific Salvage Co.'s salvage steamship Algerine was ordered to proceed to the wreck, with all dispatch, and left Victoria on Sept. 30 at noon, with Capt. W. H. Logan, of the London Salvage Association, on board. She proceeded to Nanaimo, and left there for the north at 10 p.m. The steamship Prince Albert was especially dispatched to the wreck, with A. L. Brownlie, the company's Superintendent Engineer, and arrived at Swanson Bay early on Oct. 1. C. H. Nicholson, Manager, G.T.P. Coast Steamship Co., left Vancouver on the s.s. Prince George, on Sept. 30, arriving at Swanson Bay Oct. 2. It is expected that the salvage work will be long and tedious, and will probably necessitate rolling the ship to an upright position, and then probably building a coffer dam, before pumping operations can be undertaken. The damage will probably be some $350,000. The interior fittings will probably require renewal, on account of being so long submerged, and damaged by fuel oil. An official investigation into the circumstances attending the wreck has been asked for.

Steamship Empress of Canada, about 20,000 gross tons, being built for Canadian Pacific Ocean
This ship was fully described in Canadian Railway and Marine World for September, pg. 511.

## Canadian Government Awards to Seamen.

The Dominion Government has awarded silver cups to Capt. Wilfred Fairchild Gore, Master; Gordon Grieve, Chief Officer; W. A. Michie, Second Officer; Walter Greenwood, Third Officer, and Thomas Nicholson Littlewood, Chief Engineer, and a sum of money to Chang Ching, Storekeeper, of the s.s. British Isles of London, in recognition of their services to the shipwrecked crew of the s.s. Manxman of Montreal, which was abandoned in the North Atlantic Ocean on Dec. 18, 1919.

Silver cups have also been given by the Dominion Government to Capt. M. W. Mackay, Master, and J. D. Dryburgh, Chief Officer of the s.s. War Jandoll of London, for their services to the shipwrecked crew of the schooner B. B. Hardwick of Annapolis, N.S., which was abandoned in the North Atlantic on Oct. 6, 1919. Monetary awards have been made to C. W. Masson, Wireless Operator; Albert Hornby, Boatswain, and Jos. Schooler, Fireman of the War Jandoll.

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Former Enemy Merchant Ships Sold. A London, Eng., press dispatch of Oct. 19 states that the British Government has sold 48 enemy steamships, aggregating 247,409 tons, to British purchasers, for £4,786,975.

## Atlantic and Pacific Ocean.

The Cunard Line reopened its steamship service between London and Canada, Oct. 6, with the sailing of the s.s. Caronia from London, Eng., for New York, calling at Halifax, N.S.

Elder Dempster & Co.'s s.s. Chama, outward bound to African ports, ran aground on Bellechasse Island, 15 miles below Quebec, Oct. 21. She was released subsequently by the s.s. Lord Strathcona, without material damage.

The Fracanda Line's s.s. Georgie, which ran ashore in the St. Lawrence River, shortly after leaving Quebec for Montreal, Oct. 21, was released the following day and put back to Quebec, where, it was stated, some slight repairs would be made.

The s.s. Lagerfos, which docked at Montreal late in September, under the management of the Walford Shipping Co., is stated to be the first direct steamship to Canada from Iceland. She carried 34 first class and 39 second class passengers, mostly for Winnipeg, and stated to be natives of Iceland.

The Icelandic Steamship Co. is reported to be arranging for the establishment of a direct steamship line between Iceland and Canada, with Montreal as the summer port and Halifax for the winter. It is proposed to operate two steamships in the service, and attempts are being made to interest the Dominion Government in the project.

Furness Withy & Co.'s report for the financial year ended Apr. 30, published recently, shows a profit of £1,004,821, to which has been added £120,583, brought forward, giving an available surplus of £1,125,404, compared with £873,083 for the previous year. Of this surplus, £500,000 has been placed to depreciation, and £452,500 is being paid in dividends on preference and ordinary stock, that on the ordinary stock being at the rate of 10% free of income tax. A balance of £172,900 has been carried to the current year's accounts.

The s.s. Kron Prinz Friedrich Wilhelm, one of the German passenger steamships assigned to Great Britain, and loaned to Canadian Pacific Ocean Services for the purpose of deciding whether she could be suitably used in that company's service, has been returned to Great Britain as unsuitable. It is stated that although she was the largest passenger steamship which had come up the St. Lawrence, there were serious drawbacks. The third class accommodation planned on the German standard would have to be entirely remodelled to come up to the Canadian standard.

## Maritime Provinces and Newfoundland.

The s.s. Hugo Stinnes I, which went ashore early in October, off Cape John, N.S., was refloated Oct. 6, and towed to Pictou for examination.

The Maggie Belle Shipping Co.'s shareholders met at St. John's, Nfld., Oct. 30, to receive and act on the report of the liquidator, G. Somerville.

The Reid Newfoundland Co. has restarted its Bonavista Bay steamship service, and added Bunyan's Cove as a calling place, instead of Broad's Cove, for its steamships Charlottetown and Watchful.

The suction dredge, which is owned and in use by the St. John Drydock & Shipbuilding Co., on the Courtenay Bay development works at St. John, N.B., is the Tornado, not Toronto, as stated in Canadian Railway and Marine World for October.

The Dominion Public Works Department advised Canadian Railway and Marine World that plans and specifications had been prepared for the wharf at Sydney, N.S., for which $100,000 was voted by the Dominion Parliament last session, and that tenders would probably be invited early in November.

The Minister of Customs and Inland Revenue, is reported to have stated at St. John, N.B., Oct. 7, that the extension of the Negro Point breakwater to Partridge Island would be commenced immediately and that an order had been issued for the transfer of stone from the site of the dry dock at Courtenay Bay, to protect any ships mooring at the new docks this winter.

The Reid Newfoundland Co.'s s.s. Meigle was drydocked at the company's plant at St. John's recently, for general overhaul and repairs, and for the extension of her first class passenger accommodation. It is stated that it is the intention to utilize her in the regular passenger and freight service between St. John's, Halifax and Sydney.

### Dominion Marine Association.

President, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

Second Vice President, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

Executive Committee, W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

General Counsel, Francis King, M.A., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

Two steam trawlers and three drifters sailed from Halifax, N.S., Oct. 10, for Inverness, Scotland, and, on Oct. 14, one of the trawlers returned to port and reported the loss of two of the drifters during heavy weather off the Cape Breton coast. She brought the crews of both the drifters with her, and reported that the other trawler, when last seen, was headed for Sydney with the third drifter in tow. These ships are a part of a number of similar ones built during the war in Canadian shipyards for war purposes, and which are now being utilized in the British fisheries.

The Newfoundland Government has confirmed a contract entered into by it with the Susu Shipping Co. last year, for the operation of the s.s. Susu, between St. John's, Catalina, Greenspond, Wesleyville, Outer Wadham Islands, Musgrave Harbor, Ladle Cove, Fredericton, Gander Bay, Cat Harbor, Inner Wadham Islands, Peckfords, Carmanville, Main Point, Victoria Cove, Indian Island, Tilting Harbor, Joe Batt's Arm, Change Islands, Horwood's (Dog Bay), Seldom Come By and Fogo, Nfld., in the postal mail service, commencing May 1, to the close of navigation in each year for seven years, for $4,000 a month.

## Province of Quebec Marine.

The water gauge at Montreal showed a depth of 28 ft. 9 in. in the St. Lawrence channel, Oct. 19, which is stated to be within an inch of the lowest mark ever reached.

Canada Steamship Lines' s.s. Saguenay ran ashore at Sillery Cove, near Quebec, Oct. 21, but refloated with high tide, without damage, and proceeded to Quebec.

A somewhat complicated suit respecting a steamship is in progress in the Quebec Admiralty Court, on claims against the s.s. Maplecourt, registered as owned by Davie Shipbuilding & Repairing Co. The history of the case commences with the purchase of the s.s. North West from the Northern Steamship Co., Buffalo, N.Y., and the cutting in two of the ship there, for the passage of the canals to Levis, where she was to be rejoined. It appears that the two parts of the ship were insured, on the understanding that if one of the sections became a loss, the full insurance was to be paid. One section did become a total loss, the other section arriving at Levis in safety, where a new section was added and she became the Maplecourt. Some seizures have been made on account of claims against the ship, and the matter has become greatly complicated.

## Ontario and the Great Lakes.

The Great Lakes Transportation Co. will not moor a ship at Windsor, Ont., for hotel purposes, as stated in a recent press report. The company only operates freight ships.

Canada Steamship Lines' s.s. Joyland, which went ashore near Garden Island, opposite Kingston, early in October, with a cargo of grain for Montreal, was released by the Donnelly Wrecking & Salvage Co., Oct. 13, and proceeded to her destination.

The U.S. s.s. Lakeport, operating between Conneaut, Ohio, and Canadian ports, was tied up at Conneaut, recently, and the passports of the master, Capt. T. B. Greenway, taken away, and he was sent to Cleveland, Ohio, to appear on a charge of illegally transporting intoxicating liquors.

The Toronto Harbor Commissioners have deposited with the Public Works Department, Ottawa, a description of the site and plans of a breakwater to be built in Toronto harbor, extending northwesterly into Lake Ontario, from the westerly extremity of the northerly pier of the west entrance to Toronto Bay.

The new channel for down bound ships in the St. Clair River, which is being provided by the U.S. Government, will not, it is reported, be ready for the opening of navigation next spring, as was expected, but it is stated that every effort will be made to have it ready as early as possible, to accommodate the large increase of freight traffic which is anticipated next year.

The Steamship Julius Kessler Corpor-

ation, Montreal, has bought the s.s. Julius Kessler, built recently at Duluth, Minn., and has registered her in Canada, whence, it is said, she will be operated in the interests of the Pure Cane Molasses Co. She is screw driven by engine of 140 h.p., and has the following dimensions,—length 251 ft., breadth 43.7 ft., depth 22.2 ft.; tonnage, 2,456 gross, 1,472 net.

The s.s. James Davidson was launched at Wyandotte, Mich., Oct. 9, by the Detroit Shipbuilding Co., for G. A. Tomlinson, Duluth, Minn., the christening being performed by Mrs. G. A. Tomlinson, daughter of Capt. Jas. Davidson, after whom the ship was named, and who was present at the launching. This ship is the third of the type to be launched this year for the same owner, by the same building company. Her dimensions are,—length over all 600 ft., breadth 60 ft., depth 32 ft., with carrying capacity for 13,500 tons of iron ore. The propelling machinery will consist of triple expansion engine, with cylinders 24, 54.1 and 65 in. diar. by 42 in. stroke, supplied with steam by 3 Scotch boilers each 13.5 ft. diar. by 11 ft. 0½ in. long.

J. F. Sowards, of the Sowards Coal Co., Kingston, is reported to have bought the s.s. Maplegrove from Canada Steamship Lines, for the coal trade between Detroit, Oswego and Montreal. The Maplegrove was formerly the Cherokee, and was built at Marine City, Mich., in 1889, and underwent considerable repairs in 1913. She has an oak hull, and is of the well deck type, with diagonal strapping on the frames, steel arches, and with bow sheathed for operating in ice. Her dimensions are,—length 208 ft., breadth 35¾ ft., depth 14 ft.; tonnage, 1,177 gross, 630 net. She is equipped with fore and aft compound engine, with cylinders 25 and 50 in. diar. by 40 in. stroke, 575 i.h.p. at 86 r.p.m., and supplied with steam by a firebox boiler 11 ft. 4 in. diar by 16 ft. long at 124 lb.

The s.s. G. R. Crowe, which was wrecked by an explosion, presumably of her oil cargo, at New York, Oct. 7, was owned formerly by the St. Lawrence & Chicago Steam Navigation Co., Toronto, and, in the early stages of the war, was sold to the Montezuma Transportation Co., Toronto, and equipped as an oil tanker for ocean service. She was built at Dundee, Scotland, in 1907, and was lengthened 72 ft. in 1910. Her hull was of steel, with steel tank tops where no wood ceilings are fitted, 3 watertight and 2 non watertight bulkheads, steel boiler house, steam pump wells and electric lighting. Her dimensions were,—length 324 ft., breadth 43¼ ft., depth 26 ft.; tonnage, 2,939 gross, 2,346 net. She was equipped with triple expansion engines with cylinders 18, 29½ and 48 in. diar. by 36 in. stroke, 1,079 h.p. at 81 r.p.m., and supplied with steam by 2 Scotch boilers, each 13¾ ft., by 10½ ft. at 180 lb.

## British Columbia and Pacific Coast.

The Yukon River was reported closed by ice Oct. 17, the earliest date on record.

The Nanaimo Navigation Co. Ltd. has had its name removed from the register of companies incorporated under the British Columbia Companies Act.

The C.P.R. s.s. Princess Victoria had a new mast stepped by the Victoria Machinery Depot, Victoria, recently. The one replaced had done duty since the ship was built in 1903. While she was out of service, her place was taken by the s.s. Princess Mary.

H.M.C.S. Rainbow, the hull of which was sold to Nieder & Marcus, Seattle, Wash., recently, for $67,777, after all armament had been removed, will, it is said, be converted into an ore hulk at Seattle, for the transportation of ore from northern ports.

A Victoria press dispatch states that the C.P.R. is considering the establishment of a tourist steamship service around Vancouver Island, on a weekly schedule, for next summer. It is stated that the s.s. Princess Maquinna, now running to Quatsino Sound, will be used for the purpose.

Contract no. 2, covering the erection of the pier and sheds of the Ballantyne pier on Burrard Inlet, Vancouver, is reported to have been awarded to the Northern Construction Co. for approximately $4,000,000. The pier will be 1,250 ft. long and 340 ft. wide, with 4 concrete sheds, each approximately 500 ft. long, equipped with the most modern cargo handling appliances.

The s.s. James Carruthers, owned by the Canadian Fish & Cold Storage Co., Prince Rupert, B.C., collided with the U.S. s.s. Surveyor, Oct. 12, off Green Island, during a storm, cutting a hole in the Surveyor about 8 ft. above the waterline, after which she sank in deep water. Four of the crew of the James Carruthers were reported missing. The James Carruthers was built at Beverley, Eng., in 1912, and was of steel, screw driven, by engine of 50 h.p. Her dimensions were—length 118 ft., breadth 22 ft., depth 11.5 ft., tonnage 233 gross, 97 net.

Some anxiety was felt at Juneau, Alaska, towards the end of October, on account of the non arrival to the White Pass and Yukon Ry. steamships Casca, Nasutlin and White Horse, with passengers. The closing of the Yukon River by ice was very much earlier this year than before, and it was feared that the ships were stuck on a bar about 100 miles up stream from Dawson, and that they might be frozen in for the winter. The company's s.s. Washburn, which was sent out from White Horse, Oct. 20, to help the other ships over the Kirkman bar, struck a rock near Little Salmon on the Upper Yukon River, and sank, being regarded as a total loss. There was no loss of life.

**Coal Exportation and the s.s. Lydia.**—Mention was made in our last issue of the holding of the s.s. Lydia at Port Hastings, N.S., with her cargo of 4,500 tons of coal, which it was intended to export to Europe in contravention of the Board of Railway Commissioners' order prohibiting the export of Canadian coal, except to a Newfoundland or U.S. port. As then stated, the ship was released Sept. 10, after having given a $10,000 bond, that the coal would be sold and delivered to a Canadian or Newfoundland port, or discharged and consumed at a U.S. port. It was announced at Ottawa, Oct. 20, that despite the fact of the bond having been given, the s.s. Lydia had arrived at Rotterdam with a cargo of Inverness coal.

Steamship Empress of Britain, Canadian Pacific Ocean Services Ltd.
A full description of this ship, as reconditioned after war service, was published in Canadian Railway and Marine World for August, pg. 459.

**Japanese Shipbuilding.** — The United States Consul General at Yokohama reports that the shipbuilding programme of Nippon Yusen Kaisha, which called for the construction of 500,000 tons in five years, has been revised, owing to the recent depression in the shipbuilding business. Orders have already been placed for some 100,000 tons with Japanese and British shipyards. The decision is to suspend shipbuilding from the next financial year.

**Gulf of St. Lawrence Shipping Co. Ltd.** has been incorporated under the Dominion Companies Act, with $500,000 authorized capital, and office at Montreal, to transport passengers, mail, freight, etc., on land and water, and to own and operate steam and other ships for such purposes, and for towing, wrecking and salvaging.

## The Royal Mail Steam Packet Co.'s Canada-West Indian Service.

Jno. Alsop, General Agent, R.M.S.P. Co., Halifax, N.S., is credited, in a press dispatch as having stated there recently that the company is losing $15,000 to $20,000 a trip on its Canada-West Indies service, and that if an increase in freight rates, for which it has applied to the Dominion Government, is not granted, it will have to discontinue the service. He attributes the loss to increased cost of operation, especially bunkering, and to a heavy slump in north bound freights from the West Indies.

The R.M.S.P. Co. operates the following steamships between Halifax and the West Indies, viz., Caraquet, Chaleur, Chaudiere, and Chignecto, for which it receives a subsidy from the Dominion Government, the estimates for the year ending Mar. 31, 1921, having the following item, among mail subsidies and steamship subventions: "Canada and West Indies, or South America, or both, $340,666." Under the subsidy agreement, the freight rates are subject to the Dominion Government's approval, and the R.M.S.P. Co. has applied for authority to advance them.

In this connection Sir Geo. Foster, Minister of Trade and Commerce, is reported to have said at Ottawa on Oct. 21: "In consequence of the fact that the Canadian Government Merchant Marine has placed ships on the different routes connecting with the West Indies, which to some extent interferes with the freight carryings of the R.M.S.P. Co., especially on the northbound passage during the slackness of the sugar season, and the fact that the freight rates of this company have been controlled by the Government, and the company has not been free, therefore, to take advantage of the greatly increased rates during the war and since, and also owing to the great increase in the price of coal, as well as ship commodities, the company has made application for an increase in freight rates, which is being considered by the Trade and Commerce Department, as also by the St. John, N.B., and Halifax, N.S., Boards of Trade."

## Newfoundland Steamship Services.

Canadian Trade Commissioner W. B. Nicholson writes from St. John's, Nfld., as follows:—"Transportation was retarded during the year ended June 30 by the shortage of sea tonnage and the run down condition of the railway system, which had been overworked and underrepaired during the period of the war. The volume of freight carried by the Reid Newfoundland Co.'s railway and steamships far exceeded that of previous years.

"The steamship service with the outside world showed some improvement during the year. The Furness-Withy Co. resumed sailings between Liverpool, Halifax and St. John's, and return, and an excellent passenger and freight steamship has been put on the New York, Halifax and St. John's route by the Red Cross Line, while the Canadian Government Merchant Marine has established an efficient line of freight steamships on the Montreal-St. John's, Nfld., route, which calls at Gulf ports for freight offering, and the steamship Sable I., Farquhar & Co., performs a weekly passenger and freight service between North Sydney and St. John's. The Nova Scotia Steamship Co. has two steamships running between Boston, Halifax and St. John's. It is the intention of the latter company to put two passenger and freight steamships on this route next season, accommodating about 200 passengers, and a steamship from Halifax to develop Canadian trade in flour and other Canadian manufactures on the west coast of Newfoundland. A. E. Hickman Co., St. John's, are agents for the Nova Scotia Steamship Co."

## Removal of Shipping Offices from the U.S. to Canada.

London, Eng., Oct. 12.—Canada promises to benefit from some proposed discriminatory United States legislation, such as the Jones Shipping Act, and the reported taxation of the total profits of foreign companies with branches in the U.S. A director of George Wills & Sons, merchant shippers and London agents for the Holt Line, which is now putting on a new steamship service to the Far East in co-operation with the Canadian Government Merchant Marine, states that his company is considering transferring its office from New York to Montreal. This action is being taken partly because of the high costs in the U.S. ports and partly because of the discriminatory legislation referred to, although the director did not think that the latter would prove of any great benefit to the U.S. mercantile marine, which, in his opinion, is doomed to failure.—Copyright cable to Montreal Gazette.

The s.s. War Fundy, one of the war series of wooden steamships built in Canada for the British Government under orders from the Imperial Munitions Board, is reported to have been wrecked at Grundkellesgrund, in the Gulf of Bosnia, off the Adriatic, and to have become a total loss. She was built by Grant & Horne, St. John, N.B., had approximately 3,080 d.w. tons capacity, and was launched Aug. 24, 1918.

## Ships Registered in Canada During July, 1920.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons register.

### STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|
| 138467 | A. J. Lowe | Sault Ste. Marie, Ont. | Killarney, Ont. 1920 | 64.5 | 15.0 | 7.0 | 20 | 14 | 11 Sc. | A. J. Lowe, Killarney, Ont. |
| 138456 | Argenteuil | Sorel, Que. | Sorel, Que. 1916 | 94.0 | 21.0 | 7.0 | 165 | 83 | 16 Sc. | Minister of Marine, Ottawa, Ont. |
| 141769 | Canadian Hunter | Montreal . . | Lauzon, Que. 1920 | 331.0 | 47.7 | 23.2 | 3610 | 2169 | 231 Sc. | Minister of Marine, Ottawa, Ont. |
| 141768 | Charlemagne | " | Charlemagne, Que. 1920 | 94.3 | 21.6 | 6.9 | 141 | 26 | 38 Sc. | St. Maurice Paper Co., Montreal. |
| 150231 | Cicora | Midland, Ont. | West Superior, Wis. 1903 | 241.0 | 41.0 | 16.3 | 1676 | 999 | 86 Sc. | Great Lakes Transportation Co., Midland, Ont. |
| 138458 | Coal Barge no. 6 | Sorel, Que. | Sorel, Que. . . 1915 | 160.5 | 32.0 | 11.4 | 595 | 350 | 72 Sc. | Minister of Marine, Ottawa, Ont. |
| 138457 | Detector | " | " 1915 | 140.0 | 35.0 | 13.1 | 584 | 281 | 32½ Sc. | Steamship Julius Kessler Corporation, Montreal. |
| 141837 | Julius Kessler | Montreal . . | Duluth, Minn. 1920 | 251 | 43.7 | 22.2 | 2546 | 1472 | 140 Sc. | T. M. Kirkwood, Montreal. |
| 141459 | Laura A. I. | Halifax, N.S. | Sorel, Que. 1917 | 84.0 | 19.2 | 10.0 | 113 | 14 | 24 Sc. | Minister of Marine, Ottawa, Ont. |
| 138459 | Lavaltrie | Sorel, Que. | " 1912 | 84.5 | 21.7 | 10.8 | 195 | 84 | 40 Sc. | Minister of Marine, Ottawa, Ont. |
| 141742 | Leon L. (1) | Quebec . . | " 1920 | 188.8 | 36.2 | 15.1 | 866 | 646 | 15 Sc. | Transportation & Shipping Co., Quebec. |
| 141836 | Monalo | Montreal . . | Cleveland, Ohio 1890<br>Lauzon, Que. 1920 | 249.7 | 42.0 | 21.3 | 2404 | 1333 | 191 Sc. | Montreal Transportation Co., Montreal. |
| 141458 | Mary Francis Whalen | Halifax, N.S. | Montreal . . 1917 | 84.0 | 19.2 | 10.0 | 113 | 14 | 24 Sc. | T. M. Kirkwood, Montreal |
| 138274 | Opco (1) | St. Catharines, Ont. | Milwaukee, Wis. . 1918 | 104.3 | 14.7 | 9.3 | 105 | 55 | 22 Sc. | Ontario Transportation & Pulp Co., Thorold, Ont. |
| 141575 | Rozana Burton (1) | Weymouth, N.S. | Grosses Coques, N.S. 1920 | 120.0 | 27.7 | 10.0 | 202 | 130 | 49½ Sc. | J. Burton, North Sydney, N.S. |
| 141767 | Sapin (2) | Montreal . . | Noank, Conn. 1901 | 68.3 | 15.1 | 4.9 | 42 | 15 | 13½ Sc. | Port Aux Quilles Lumber Co., Montreal. |
| 117528 | Stella Maris | Windsor, N.S. | London, Eng. 1882 | 124.5 | 23.6 | 12.2 | 229 | 54 | 70 Sc. | Farquhar & Co., Halifax, N.S. |

(1) Motor ships. (2) Formerly, Vega.

### SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Tons Reg. | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141625 | B. R. Tower | Parrsboro, N.S. | Schr. | Diligent River, N.S. 1920 | 140.0 | 33.0 | 10.9 | 379 | 343 | J. N. Pugsley, Parrsboro, N.S. |
| 141642 | General Trenchard | Liverpool, N.S. | " | Allendale, N.S. 1920 | 106.5 | 26.2 | 10.4 | 184 | 149 | G. C. Harris, Grand Bank, Nfld. |
| 141821 | M. W. W. No. 3 | Vancouver, B.C. | Scow. | Victoria, B.C. 1911<br>Vancouver, B.C. 1920 | 90.0 | 30.0 | 7.6 | 173 | 173 | McNeill, Walsh & Wilson, Ltd., Vancouver, B.C. |
| 141787 | M. W. W. VIII | New Westminster | Scow. | New Westminster, B.C. 1920 | 91.3 | 30.0 | 7.3 | 171 | 171 | J. Crane, New Westminster, B.C. |
| 141693 | Mary L. Oxner | Lunenburg, N.S. | Schr. | Chester Basin, N.S. 1920 | 120.0 | 28.0 | 11.0 | 218 | 169 | W. Duff, M.O., Lunenburg, N.S. |
| 141626 | Whitebells | Parrsboro, N.S. | " | Parrsboro, N.S. 1920 | 172.0 | 27.4 | 13.0 | 615 | 572 | C. T. White & Son, Sussex, N.B. |

# Mainly About Marine People.

John Barnsley, heretofore Assistant Manager, has been appointed Manager, Union Steamship Co. of British Columbia. He was for some years with the Boscowitz Steamship Co., before it was taken over by the Union Steamship Co. of British Columbia.

Sir Alfred Booth, Chairman, Cunard Cteamship Co., was in Quebec, Oct. 21, prior to going to New York, whence he sailed for England on the s.s. Aquitania. He expects considerable development in the Canadian steamship service for next year.

J. Chesley, Agent, Marine Department, St. John, N.B., is acting as Superintendent of Pilots, St. John pilotage district, for the present.

Lieut. Commander C. P. Edwards, General Superintendent , Radiotelegraph Branch, Naval Service Department, Ottawa, has been attending a meeting of representatives of Great Britain, the United States, France, Italy and Japan, in Washington, to discuss international wire and wireless communications.

R. S. Elworthy, General Agent, Passenger Department, Canadian Pacific Ocean Services Ltd., Chicago, returned home early in October from Europe, after a business trip on the continent.

H. E. A. Hawken, heretofore Assistant Deputy Minister of Marine, has been appointed acting Deputy Minister of Marine, consequent on the resignation of Alex. Johnston. He was born Sept. 28, 1879, and entered the civil service Jan. 7, 1902, and prior to Mar. 31 was Chief Registrar of Shipping. On the latter date he was appointed acting Assistant Deputy Minisited of Marine and Assistant Deputy Minister of Marine, in July.

Capt. Hose, R.N., acting Director, Canadian Naval Service, is reported to have been named as Director, Canadian Naval Service, effective Jan. 1, 1921, vice Admiral Sir Charles Kingsmill, R.N., at present on leave of absence, prior to retirement.

Alex. Johnston, Deputy Minister of Marine and Fisheries, is resigning from the Dominion Government's service, and it is said that he will enter the British Empire Steel Corporation's service, an Ottawa press dispatch stating that he will be General Assistant to the President, at a salary of $18,000 a year. Canadian Railway and Marine World was advised, Oct. 25, that no definite conclusion had been reached as to the exact nature of the work he will undertake, that no consideration had been given to the question of title, that he will not enter on his new duties until Jan. 1, and that his headquarters had not been decided on, but that he will not be removing from Ottawa for the next year.

Major A. C. Lewis, formerly Secretary, Toronto Harbor Commission, and now Secretary, Canadian Deep Waterways & Power Association, has been nominated as the Conservative candidate at the ensuing by-election for the representation of Northeast Toronto in the Ontario Legislature.

Thos. Long, President Thos. Long & Co., general merchants, Collingwood Ont., at one time a director of the Northern Navigation Co. of Ontario. and a former President of the Collingwood Shipbuilding Co., died at his house in Toronto, Oct. 7, aged 84.

W. McLaurin, of the C.G.S. Stadacona, Esquimalt, B.C., a returned soldier, has been appointed Dock Yard Foreman, Halifax Dockyard, N.S. Naval Service Department, at an initial salary of $2,400 a year. Particulars of duties, classifications, etc., were given in Canadian Railway and Marine World for October, page 578.

Miss Hilda Murphy, daughter of the late Dennis Murphy, formerly President, Ottawa Transportation Co., was married at Ottawa, Oct. 24, to Lt. Col. K. M. Perry, D.S.O., son of Commissioner Perry of the Royal Canadian Mounted Police.

J. W. Norcross, President and Managing Director, Canada Steamship Lines Ltd., and Mrs. and Miss Helen Norcross, sailed from Quebec, Oct. 6, on the s.s. Empress of France, for England.

Thos. Robb, Manager, Shipping Federation of Canada, left Montreal at the end of October, to attend the first meeting of the advisory committee on maritime matters, of the League of Nations, at Geneva, Switzerland, Nov. 8.

Capt. John C. Shaw, master of the Dominion Government s.s. Sheba, died suddenly, Oct. 9, on board his ship, whilst en route from Levis, Que., to Sydney, N.S. He had been engaged in coast navigation for several years, and before entering the Dominion Government's service, was first officer of the s.s. Oruro, operated by Pickford & Black Ltd., to the West Indies.

Richard Welsford has been appointed Managing Director, Union Steamships Co. of British Columbia, Vancouver, B.C., succeeding E. H. Beazley, who lost his life recently in an aeroplane accident. He is a son of J. H. Welsford, of J. H. Welsford & Co., Liverpool, Eng., which firm controls the Union Steamship Co. of British Columbia, and he has been in that company's service for several years. He was in Vancouver recently, and returned to England, and will assume his new duties in Vancouver about Jan. 1, 1921.

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Manchester Liners Ltd. report for the year ended June 30, shows that after providing for depreciation and all charges, including debenture interest, preference dividends, excess profits, corporation and income taxes, there is an amount available of £181,096, including £13,911 brought forward. Of this amount, £100,000 is placed to reserve, and a dividend of 15% free of tax paid on the ordinary shares, leaving £14,316 carried forward to this year's accounts.

The U.S. Emergency Fleet Corporation's office in Montreal will be closed at the end of the St. Lawrence navigation season. This office was opened during the war, for the accommodation of business connected with the passage of a number of steamships from the Great Lakes to the ocean. During the current year about 60 have passed out, and it is expected that two or three more will pass before the season closes.

U. S. Shipbuilding.—An enormous decrease has taken plaace in ship tonnage under construction in the U.S. during the last 18 months. At the end of May, 1919, 4,185,523 tons were actually building in the U.S., but by the end of September, 1920, that total was reduced by 58%.

British shipbuilders are reported to have offered to build tankers for the United States at $157.50 a ton, which is said to be $10 lower than a French offer, and $32.50 lower than U.S. prices.

## Great Lakes Levels.

The U.S. Lake Survey reports the monthly mean stages of the Great Lakes for September, 1920, in feet above mean sea level, as follows:—Superior, 602.81; Michigan-Huron, 580.87; St. Clair, 575.44; Erie, 572.39; Ontario, 245.47.

Lake Superior was 0.12 ft. lower than August, 0.28 ft. higher than a year ago, 0.17 ft. above the average September stage of the last 10 years, 1.27 ft. below the high stage of Sept. 1869, and 1.32 ft. above the low stage of Sept., 1879.

Lakes Michigan and Huron were 0.14 ft. lower than August, 0.06 ft. higher than a year ago, 0.20 ft. above the average September stage of the last 10 years, 2.56 ft. below the high stage of Sept., 1876, and 1.21 ft. above the low stage of Sept., 1911. During the last 10 years the September level has averaged 0.2 ft. lower than the August level and 0.2 ft. higher than the October level.

Lake Erie was 0.26 ft. lower than August, 0.36 ft. lower than a year ago, 0.02 ft. below the average September stage of the last 10 years, 1.55 ft. below the high stage of Sept., 1876, and 1.11 ft. above the low stage of Sept., 1895. During the last 10 years the September level has averaged 0.2 ft. lower than the August level, and 0.3 ft. higher than the October level.

Lake Ontario was 0.15 ft. lower than August, 1.39 ft. lower than a year ago, 0.72 ft. below the average September stage of the last 10 years, 2.14 ft. below the high stage of Sept., 1862, and 1.47 ft. above the low stage of Sept., 1895. During the last 10 years the September level has averaged 0.4 ft. lower than the August level, and 0.4 ft. higher than the October level.

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Increased Shipbuilding Costs in Britain.—The Westminster Gazette, in commeting upon the increased shipbuilding costs in Great Britain as a result of higher wage demands, pointed out recently that many order with British shipbuilders were being cancelled, and added: "Lord Weir has sized up the situation in the engineering line, and is rapidly developing his interests in Japan and Canada; while the action of the Yarrows a considerable time ago showed even then how the wind was blowing, and is likely to continue to blow."

New Zealand Harbor Improvements.—Plans are well under way for the completion of wharves and sheds at Auckland, as well as the construction of three more wharves to meet the demands of the constantly increasing commerce of that city. Frequently the wharves are so badly congested that shipping must wait its turn. The Auckland Harbor Board has been authorized to place a loan of $4,866,500 for the developments mentioned, and the chairman of the board has announced that work will be pushed as rapidly as possible.

H.M.S. Shearwater.—The Naval Service Department will receive tenders to November 10, for the purchase of H. M. S. Shearwater, now lying at Halifax, N. S. She was built in England in 1899, with steel hull, wood sheathed, and is fitted with single screw, two bladed propeller, triple expansion, convertible, surface condensing, reciprocating engines of 1,400 i.h.p., and 4 water tube Belleville boilers with a working pressure of 260 lb. Her dimensions are,—length 300 ft., beam 33 ft., draft 12.5 ft., displacement 980 tons.

## Radiotelegraph and Other Electric Aids to Navigation.

As detailed in Canadian Railway and Marine World from time to time recently, the Dominion Naval Service Department's Radiotelegraph Branch has established several wireless telegraph direction finding stations which have been operated very successfully on the Atlantic coast and another one is being erected at St. John, N.B.

The U.S. Commerce Department's Navigation Bureau is studying the determination of ship location by radio signal. The system in use at present by the U.S. Navy employs radio compass stations on shore which measure the angle from which the signal is sent by the vessel to be located. By a system of triangulation two or more stations working together can determine the location of a vessel. The new system under test by the Department of Commerce reverses the operations by sending the signals from shore stations and doing the radio compass work aboard ship. Recent tests on this system are reported to have been very successful, but further investigation both as to apparatus and methods of manipulation are anticipated before any extensive application will be commended.

In connection with the radio location of ships the U.S. Navy Department has under consideration the establishment of a large number of additional radio compass stations. These will be placed along the western seaboard and on the Great Lakes. It is anticipated that they will find extensive use in directing the merchant marine, though they will be designed primarily for naval service. It is said that stations will be established on the Great Lakes at Detour, Grand Marais, Whitefish Point, Eagle Harbor, Thunder Bay Island, Wind Point or Grosse Point, and several other points.

A Paris cablegram says that the French Ministry of Marine has decided as soon as possible to lay down in all French ports and across the Channel, in collaboration with the British Admiralty, electric cables which will enable ships to steer safely into port in the densest fogs. The invention which is to be used is that of the French engineer, Loth, which, it appears from the account given at the Academy of Sciences by Admiral Fournier, resembles in its general principles that recently experimented with in America. An electric cable along which a current of alternative frequency is passed is submerged in the fairway. Secondary currents which such a cable induces at a distance are picked up by ship's instruments and, according to the distance of the sound, the pilot can judge whether he is in the middle or at the outskirts of the fairway. Even an aeroplane fitted with receiving instruments can follow the submerged cable, and the proposal is made that the sea cable should have an overland connection to the aerodromes, to enable pilots to steer through fog.

The United States Navy Department is reported to be completing a series of tests in New York harbor on a system using what is called a "radio piloting cable." This system was first tried by the Navy Department nearly a year ago but the first tests were not successful, due to damage of the cable by fishing operations. A new cable designed by the Radio Division of the Bureau of Engineering of the Navy Department has, however, proved successful and recent tests are reported to be exceedingly encouraging. The work requires a cable energized by a low frequency alternating current laid along the center of the channel through which vessels are to be guided. The magnetic waves from this cable are picked up by any one of several types of receiving equipment aboard the ship and the pilot lays his course in accordance with the relative intensity of the signals from the right or the left receiving units. A full report upon this work will be available on completion of the present tests.

## The Cunard Co.'s Canadian Services.

London, Eng., Oct. 13.—The Cunard Co. will probably supplement the partial service to Canada now being provided by the Saxonia and the Caronia with several of the 13 ships now under construction for the company. As the new ships will all be oil burners, of approximately 20,000 tons each, the Cunard Co. expects to become serious competitors of the Canadian Pacific Ocean Services. The sailings will be from London to Halifax and New York. The British offices of the Cunard Co. refuse to confirm the report that the company will put a passenger fleet on the Pacific Ocean to compete with the C.P.O.S. there, using the Canadian National Rys. across Canada.—Copyright cablegram to Montreal Gazette.

## Francis King on the Proposed St. Lawrence River Improvements.

At a sitting of the International Joint Commission at Kingston, Ont., Oct. 11, Francis King, M.A., Chairman of the Kingston Board of Trade's marine committee, stated that, as General Counsel for the Dominion Marine Association, he had at Buffalo, N.Y., on Mar. 1 last, explained the attitude of Canadian ship owners towards the proposals so far as their position was indicated by the Association's records. They had made no declaration then and had made on declaration since on the question whether transportation would benefit by the adoption of the proposed scheme of improvement, but they had asked for some such plan as a solution of their difficulties in relation to power development. They had objected to the present system of parcelling the river out to private individuals, and to corporations, with the result that navigation was imperilled and that the Government was in danger of losing control of the stream. Mr. King stated that the Association and mariners themselves recognize that power is a very important factor, and that the demand for more of its must be met soon. The Association therefore asked the Government for a scheme which would protect navigation interests and at the same time permit the development of power. To that extent the Association agreed on the proposals, and in spite of other differences among individuals, such as those engaged in freight and passenger traffic, those with ships of large size and those with ships which can already navigate the canals, those who have strong views on the non adaptability of lake ships for ocean trade, or ocean ships for lake trade, and those who believe a new type might develop or that transhipment would in any event take place at Montreal; in spite of these differences the Association believes that some scheme must be adopted, and the one before the Commission seems practical and might be decided upon.

Mr. King said the Association should go farther, and suggested that if the change must come, dams and slack water lakes in the river would be preferable to canals. Speaking for Kingstonians, he pointed out that in advocating the St. Lawrence waterway, on account of the need of power, they were quite unselfish, as when the Welland Canal deepening was proposed, it was felt that it would make the foot of Lake Ontario the end of deep water navigation and build up Kingston. With the deepening of the St. Lawrence this advantage would be gone, but they believed the good of the greatest number must be considered and must prevail.

## Marine Public Works Contracts.

The Dominion Public Works Department has awarded the following contracts:—Repairs to checkwater pier, Cobourg, Ont., York Construction Co., Toronto, Sept. 15, schedule of rates. Repairs to public wharf, Owl's Head, N.S., Naugle & Hiltz, Lawrencetown, N.S., Sept. 14, schedule of prices. Dredging in deep water berths, St. John, N.B., J. A. Gregory, West St. John, N.B., Sept. 20, class B, 32c. a cu. yd. scow measure. Wharf, Thetis Island, B.C., Vancouver Pile Driving & Contracting Co., Vancouver, B.C., Sept. 15, schedule of prices. Reconstruction of superstructure of west pier, Pelee Island, Ont., Border Cities Construction Co., Windsor, Ont., Sept. 22, schedule of prices. Repairs to wharf, Campbell River, B.C., W. Greenlees, Vancouver, B.C., Sept. 23, schedule of prices. Construction of wharf, Lyall Harbor, B.C., Vancouver Pile Driving & Contracting Co., Vancouver, B.C., Sept. 23, schedule of prices. Renewal of wharf, Moresby Island, B.C., Vancouver Pile Driving & Contracting Co., Vancouver, B.C., Sept. 23, schedule of prices. Reconstruction of wharf, Owen Sound, Ont., E. Conroy, Peterborough, Ont., Sept. 27, schedule of prices. Ice breakwater, St. Joseph de Sorel, Que., A. Lacroix and H. Gravel, Montreal, Oct. 1, $2,800. Public floating wharf, Princess Creek, B.C., F. Cogle and H. Perryheake, Proctor, B.C., Sept. 27, $7,980. Reconstruction of 466 ft. of superstructure of east pier, eastern channel to Toronto harbor, Toronto, C. S. Boone Dredging & Construction Co., Toronto, Oct. 12, schedule of prices.

## Wreck Commissioner's Enquiries and Judgments.

Investigations have been held and judgments delivered in connection with the following casualties:—

### Stranding of s.s. Edward Pyke.

Held at Quebec, Oct. 7, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and J. Couette, as nautical assessors, into the stranding of the steam tug Edward Pyke, near Pointe a Pizeau, Quebec harbor, Sept. 5, while towing the sailing ship Grand Duchess Maria Nicolaeroe.

The court found that the master of the tug, Capt. A. Larsen, and the pilot, A. Arcand, failed to exercise the prudence required by their respective positions and responsibilities. The fact that the casualty was trivial in a monetary sense was no concern of the court, but on the principle involved the court held that the action of each of the parties brought the tug and her tow into danger, and ordered Capt. A. Larsen to pay the costs of the enquiry, and fined the pilot, A. Arcand, $150, to be paid by Nov. 1. With respect to E. deVillers, pilot of the sail-

ing ship, although his ship did not come to grief, he was severely reprimanded, and cautioned to remember that, if only from a humanitarian point of view, it was his duty to "warn his servant that he was running into danger."

A rider was added to the court's finding, stating that a very important point was brought out, viz., that each pilot was under the impression that he had no instructions to give or receive from the other, that each was caring for his own charge, and felt that neither one had any concern for the other. The court held this to be a wrong and dangerous principle. If pilots intend, as the court was informed, each separately to pilot a tug and her tow, and the powers that be permit it, stringent instructions and regulations must necessarily be issued at once, in view of the foregoing, to prevent dual control, which can only be destructive of any policy, and dangerous to St. Lawrence navigation.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Barrett Co., with Canadian offices at Sydney and Halifax, N.S., St. John, N.B., Montreal, Toronto, Winnipeg and Vancouver, has issued "Roof Flashing Handbook, Details and Specifications," dealing with standard flashings, which are fully described and illustrated, many of the illustrations being in blue print form.

Davis-Bournonville Co., Jersey City, N.J.:—"Autogenous Welding," this company's house organ, for October, deals further with the performance of its Pyrograph, in the fabrication of flange boiler plates, in shipyards. The setting up of portable welding equipment is also described and illustrated, step by step.

Davis-Bournonville Co., Jersey City, N.J., has issued a booklet of instructions for the use of the Radiagraph, a portable machine for cutting to straight and curved lines, uring grooved track to guide for straight cutting, and a radius bar and center point for circular cutting. The illustrations show cutting on oval opening in a marine boiler combustion chamber head, ship plate cutting and trimming a ship plate to a straight line.

Dominion Oxygen Co. has opened a charging plant at Hillcrest Park, Toronto, where a supply of Dominion oxygen, in loaned cylinders of standard sizes, will be carried at all times.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.

Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.

Canadian Car Demurrage Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.

Canada Freight Association (Eastern lines)—G. C. Ransom, 909 Shaughnessy Bldg., Montreal.

Canadian Freight Association (Western Lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.

Hydro-Electric Railway Association of Ontario —T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.

Niagara Frontier Summer Rate Committtee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.

Railway Association of Canada—C. P. Riddell, Montreal.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.

Transportation Club of Vancouver.—C. E. Blaney, Travelling Passenger Agent, Canadian Pacific Ocean Services Ltd., Vancouver, B.C.


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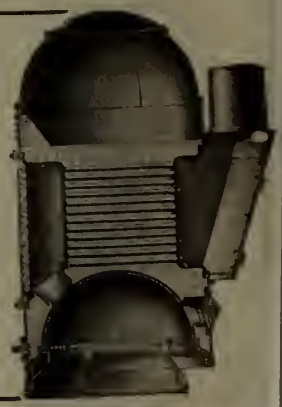
The illustration shows The Cochran Donkey Boiler, Coal or Oil Fired.



COLUMBIA PYRAMID BRUSHES
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Uniform in Structure.
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THERE is one *best* type of Columbia Pyramid Brush for *your* motors. Let us put on exactly the brush you need.

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# Use Machinery in Place of Men

Standard Derrick Engine, with Geared Swinger. Supplied also with Separate Steam Swinger, if desired. Made in 7 sizes, one of which is just right for your work.

**Hoisting and Haulage Machinery** will not only take the place of men to a large extent, but **will handle your materials at greater speed, and at a lower cost.**

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Our long experience enables us to give the right machinery, of the right quality, and at the right price.

*Have You a Copy of Our Large Illustrated Catalog?*

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Sales Agents: MUSSENS LIMITED, Montreal, Toronto, Winnipeg and Vancouver.

ENGINEERS, MANUFACTURERS AND ERECTORS OF

**STEEL RAILWAY BRIDGES**
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**STEEL STRUCTURES OF EVERY DESCRIPTION**

YOUR INQUIRIES WILL RECEIVE PROMPT ATTENTION

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## General Railway Signal Company of Canada, Limited

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Reports, Freight and Passenger Yards and Terminals, Single Track Capacity, Side Track Location, Interlocking and Block Signal Design and Construction.

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Tug Strathmore
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**Harbour Tug Service**

Lighter Strathbuoy—Capacity, 700 tons.

Equipped for all kinds of Towing, Wrecking, Etc.
Sand and Gravel supplied for Concrete Work, Rock and Soil Filling for Cribwork.

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## CHICAGO RAILWAY SIGNAL & SUPPLY COMPANY

*Manufacturers of All the Name Implies*

Interlocking and Electric Signals and Materials, Highway Crossing Alarms, Forgings, Castings, Etc.

CANADIAN DISTRICT OFFICES.

—Western— Moore, Cameron & Hill Ltd., McIntyre Block—Winnipeg.

—Eastern— Moore, Cameron & Hill Ltd., Beaver Hall Hill—Montreal.

# For Sale and Classified Advertising

Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

**ADVERTISING RATES.**

Rates for advertisements set in uniform style in six point under
Positions Wanted and Positions Vacant, 3c. per word.
Equipment for Sale advertisements, 4c. per word.
Allow five words where replies are to be sent to a box number. Minimum order—$1.
Rates under other headings and for display advertisements on application.

THE CURTISS-WILLIS CO., Inc.
No. 30 Church St., New York
*Largest Dealers in*
USED AND NEW TANKS
*Send for our new tank list. MOST COMPLETE EVER ISSUED.*

The Proprietor of Canadian Patent No. 198159, dated 1919, pertaining to an Automatic Combined Wagon and Carriage Pipe Coupler for Railway and other vehicles, is desirous of entering into negotiations with firms to exploit the above invention, either by sale of the patent rights or granting licenses for manufacture on reasonable terms.

The working model can be seen by appointment in England.

Write Box 98, The Railway Gazette, Queen Anne's Chambers, Westminster, London, S.W.1.

**For the Good of the Service Use—**

NATIONAL STEEL TRAP DOOR AND LIFTING DEVICE
RESISTO and TUCORK INSULATION
FLEXOLITH COMPOSITION FLOORING
TUCO PRESERVATIVE FOR FLOOR PLATES
NATIONAL STANDARD ROOFING
IMPERIAL CAR WINDOW SCREENS

**TUCO PRODUCTS CORPORATION, 30 Church St., New York City**
CANADIAN OFFICE:
Consolidated Equipment Co., 263 St. James Street, Montreal.

**CRANE VALVES**

**CRANE**
LIMITED
HEAD OFFICE & WORKS
1280 ST. PATRICK ST
MONTREAL
BRANCHES: Toronto, Winnipeg, Vancouver,
SALES OFFICES: Halifax, Quebec, Ottawa, Calgary.

**DEPARTMENT OF THE NAVAL SERVICE.**

**NOTICE OF SALE.**

Sealed tenders addressed to the Undersigned and endorsed on the envelope "Tender for Shearwater," will be received up to noon of Wednesday, the 10th day of November, 1920, for the purchase of H.M.S. "Shearwater," now lying at Halifax, N.S.

This vessel, which is constructed of steel, wood sheathed, was built in England in 1899. Her length is 200 feet, beam 33 feet, draught 12.5 feet, and displacement 980 tons. She is fitted with single screw, two bladed propellor, triple expansion, inverted, surface condensing reciprocating engines of 1,400 I.H.P., and four water tube Belleville boilers with a working pressure of 260 lbs. per sq. in. This vessel will be sold as she lies.

Each tender must be accompanied by a certified cheque on a chartered Canadian bank for 10 per cent. thereof, as a guarantee of good faith.

The Department reserves the right to reject any or all tenders received.

Full information and permission to inspect this vessel may be obtained on application to the undersigned or to the Commander in Charge, H.M.C. Dockyard, Halifax, N.S.

C. J. DESBARATS,
Deputy Minister of the Naval Service.

Ottawa, Ont., September 30, 1920.

Unauthorized publication of this advertisement will not be paid for.

**It Pays**

to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better **Results**

**Canadian Gold Car Heating & Lighting Company, Limited**
ECONOMICAL—SYSTEMS OF MERIT—WILL NOT FREEZE
Vapor Systems, Pressure Systems, Vapor and Pressure Systems, Hot Water Systems, Electric Systems
Automatic Heat Control for all Systems—Ventilators
346 ST. JAMES STREET MONTREAL, CANADA

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**Galt Malleable Iron Co., Limited - GALT, ONT.**

**MILLER BOILER WASHING SYSTEM—FOR LOCOMOTIVES**
Washout Water at 120°. Refill Water at 200°.
**F. W. MILLER HEATING CO.**
McCORMICK BUILDING - - - - - CHICAGO, ILLINOIS

*Barrett Specification 20-Year Bonded Roof on Ste. Philomene School, Montreal, P.Q. Arch.: Vautrin & Bernier, Montreal. Gen'l Cont.: Ulric Boileau, Montreal. Roofer: J. E. Hardy.*

# The Modern School and its Roof—

STE. PHILOMENE SCHOOL, at Rosemont, Montreal, which is shown in the accompanying illustration, was designed for convenience and safety, and built for economy and permanence.

It is a typical example of the splendid modern school buildings that are found today in all the larger Canadian cities. And, like many such buildings, it is covered with a Barrett Specification Roof, laid under the supervision of our inspectors and guaranteed against all repair expense for 20 years by a surety company bond.

This bond may be obtained on any Barrett Specification Roof of 50 squares or larger, in any city of 25,000 or more, and in smaller places where our inspection service is available.

Our only conditions are that the roofing contractor shall be approved by us and that The Barrett Specification, *revised April 15, 1920,* shall be strictly followed.

***Important Notice***

The Barrett Specification Type "AA" 20-Year Bonded Roof represents the most permanent roof-covering it is possible to construct, and while we bond it for 20 years only, we can name many roofs of this type that have been in service for more than forty years and are still in good condition.

Where the character of the building does not justify a roof of such extreme length of service, we recommend the Barrett Specification Type "A" Roof bonded for 10 years. Both roofs are built of the same high-grade materials, the only difference being in the quantity used.

Full details regarding these Bonded Roofs and copies of The Barrett Specification free on request.

The Barrett Company
LIMITED.

MONTREAL TORONTO WINNIPEG VANCOUVER
ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S.

**Barrett Specification Roofs**

*Bonded for 20 and 10 Years*

Engineers and Contractors

ANGUS SINCLAIR, C.E.
*Railway Contractor*
OFFICE: EXCELSIOR LIFE BUILDING,
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ELECTRICAL—CIVIL—MECHANICAL
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OUR EXPERIENCE COVERS THIRTY-FIVE PLANTS
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THE LUNDIE TIE PLATE

One of the most distinguished, successful and honored Engineers of Canada writes as follows of the
LUNDIE TIE PLATE
"It is by far the most scientifically designed and practically efficient tie plate ever evolved."
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The glories of the chase, the tang of the clear pure atmosphere: the thrill of the "Out of Door" is calling you!
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will gladly furnish advice and assistance in completing plans.
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Rails, Cars, Locomotives
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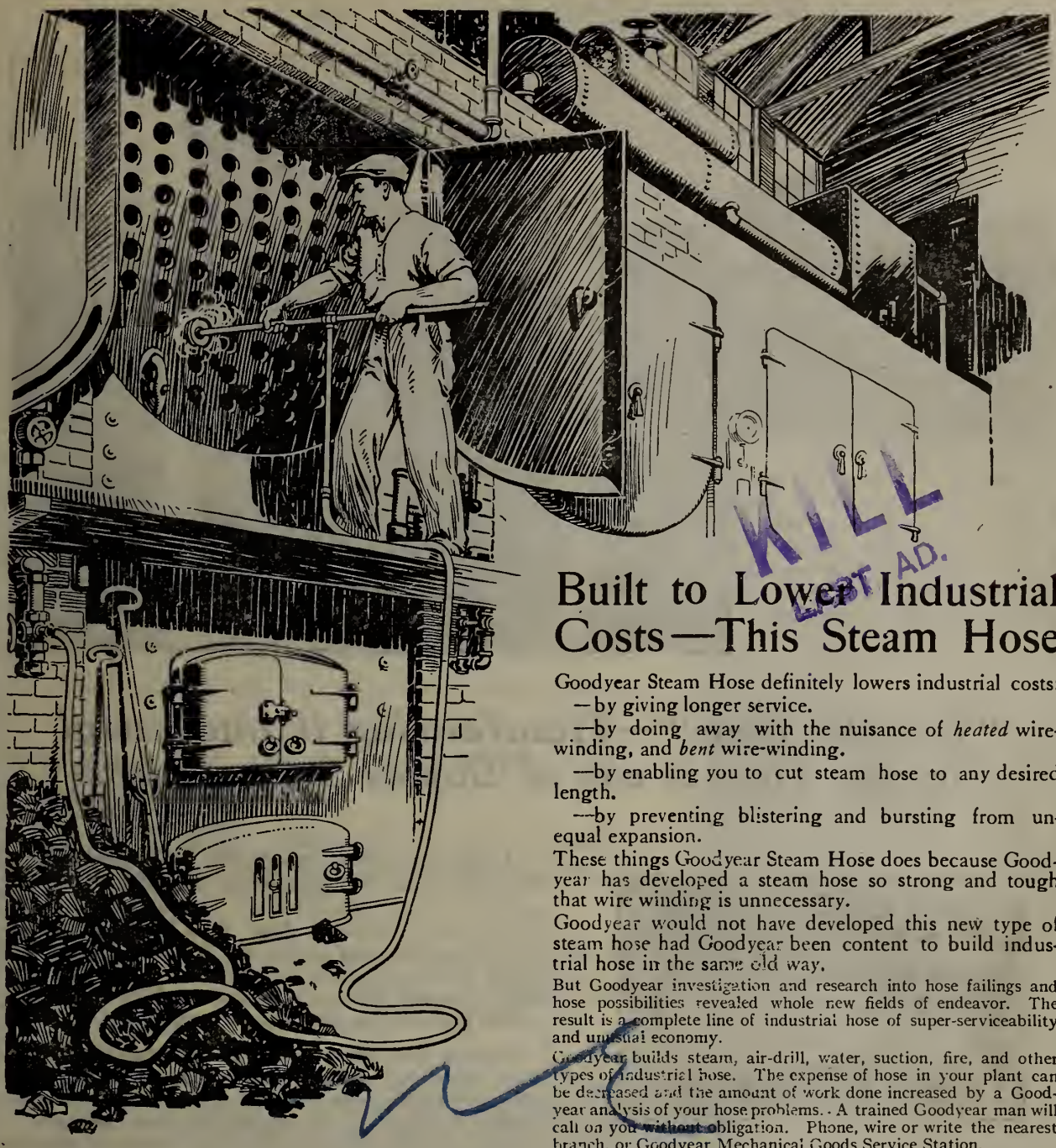


KILL
LAST AD.

# Built to Lower Industrial Costs—This Steam Hose

Goodyear Steam Hose definitely lowers industrial costs:

—by giving longer service.

—by doing away with the nuisance of *heated* wire-winding, and *bent* wire-winding.

—by enabling you to cut steam hose to any desired length.

—by preventing blistering and bursting from unequal expansion.

These things Goodyear Steam Hose does because Goodyear has developed a steam hose so strong and tough that wire winding is unnecessary.

Goodyear would not have developed this new type of steam hose had Goodyear been content to build industrial hose in the same old way.

But Goodyear investigation and research into hose failings and hose possibilities revealed whole new fields of endeavor. The result is a complete line of industrial hose of super-serviceability and unusual economy.

Goodyear builds steam, air-drill, water, suction, fire, and other types of industrial hose. The expense of hose in your plant can be decreased and the amount of work done increased by a Goodyear analysis of your hose problems. A trained Goodyear man will call on you without obligation. Phone, wire or write the nearest branch, or Goodyear Mechanical Goods Service Station.

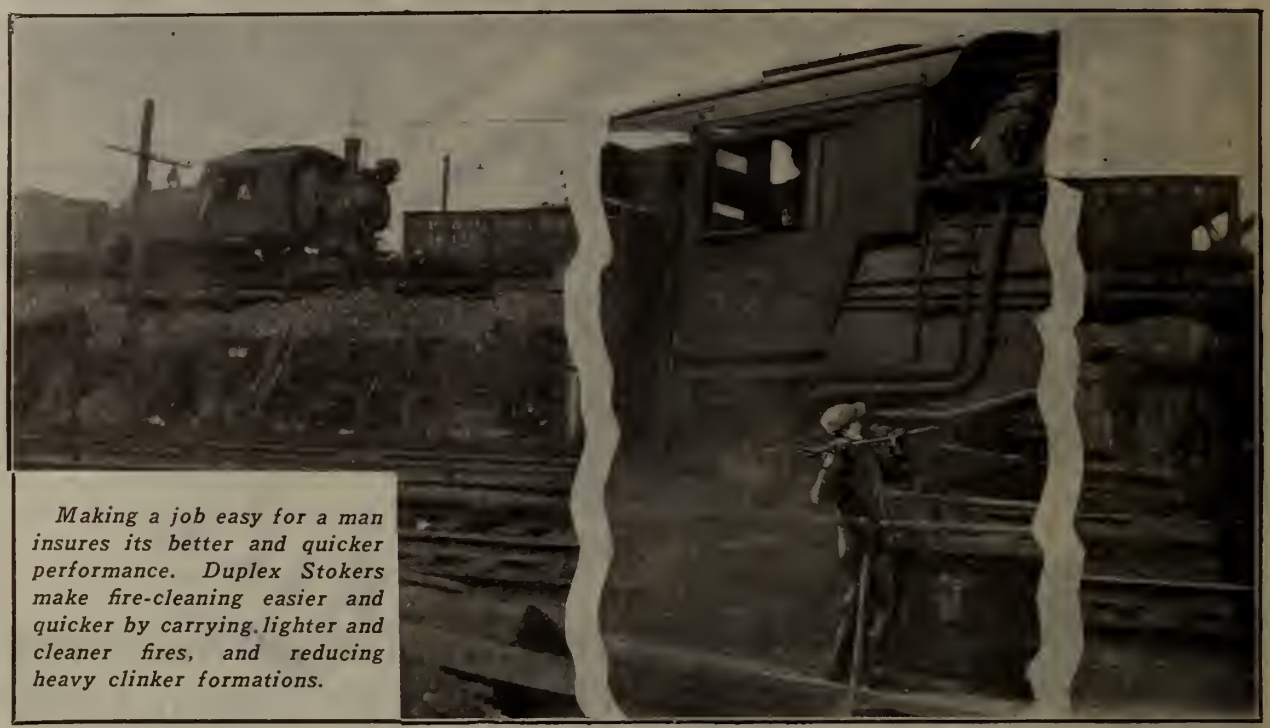
**The Goodyear Tire & Rubber Co. of Canada, Limited**

*Branches—Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver.*

# GOODYEAR

MADE IN CANADA

# INDUSTRIAL HOSE



*Making a job easy for a man insures its better and quicker performance. Duplex Stokers make fire-cleaning easier and quicker by carrying lighter and cleaner fires, and reducing heavy clinker formations.*

## *"The Idle Hour"—Transforming it into useful Service Time is one of Duplex Stokers' jobs*

**Duplex Stokers Scatter Coal Uniformly**

A certain railroad operating 2,000 locomotives estimated that these engines averaged but 10 hours active service each 24-hour day, leaving 14 idle hours, says "Railway Age" in a recent editorial. If but one idle hour of the day for each locomotive could be transformed into an hour of active service, it would be equivalent to making 200 additional locomotives immediately available.

Duplex Stokers will aid in transforming "The Idle Hour" by getting the engine over the fire-cleaning pit in reduced time. The ideal coal scattering feature of the Duplex Stoker permits a light, clean fire to be carried and reduces clinker formation. Consequently, less time is required to clean fires on Duplex Stokered engines.

***Over 4500 of our Stokers in Service and on Order***

# Locomotive Stoker Company

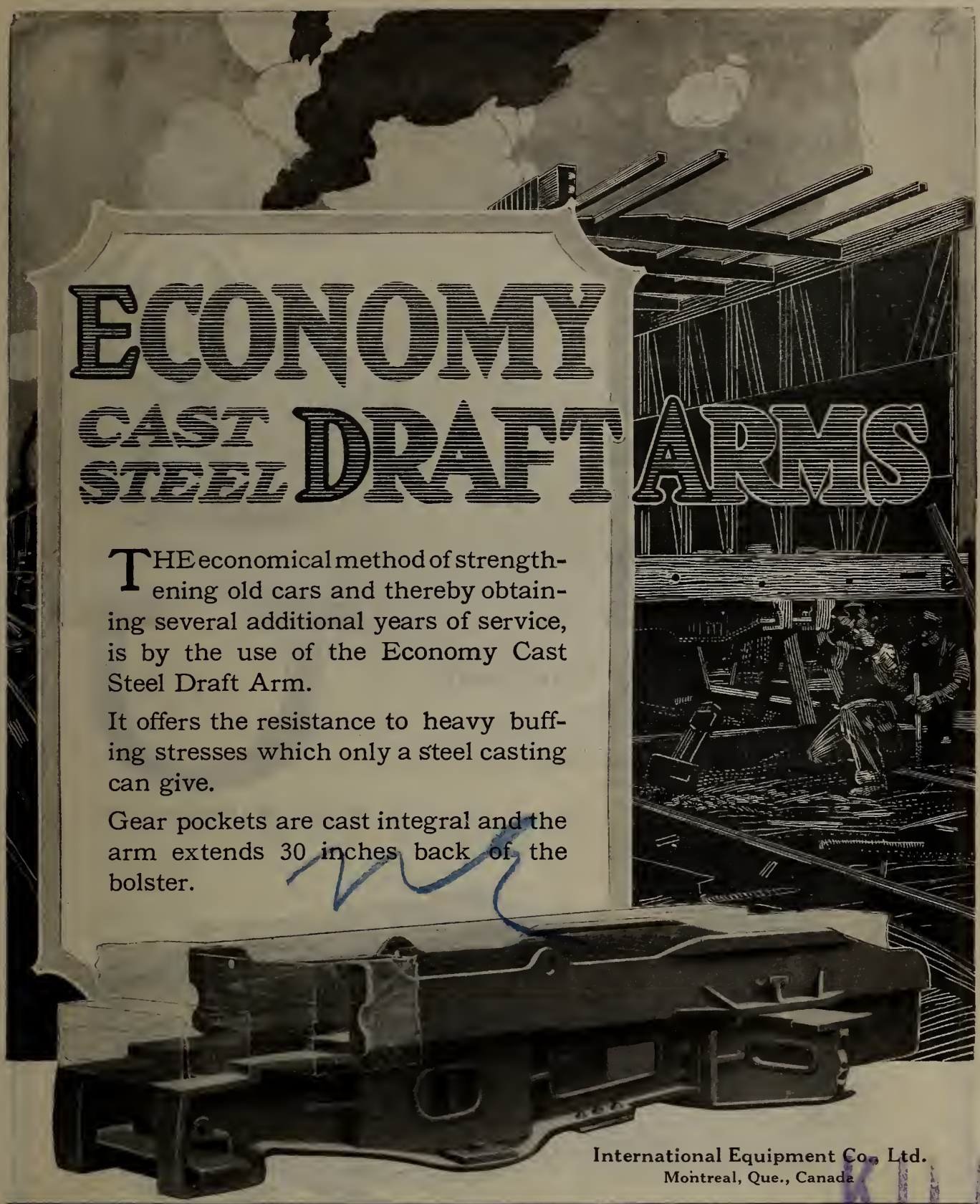
*Main Office and Works:*

**Pittsburgh, Pa.**

RAILWAY EXCHANGE
CHICAGO, ILL.

MUNSEY BLDG.,
WASHINGTON, D.C.

50 CHURCH ST.
NEW YORK



# ECONOMY CAST STEEL DRAFT ARMS

THE economical method of strengthening old cars and thereby obtaining several additional years of service, is by the use of the Economy Cast Steel Draft Arm.

It offers the resistance to heavy buffing stresses which only a steel casting can give.

Gear pockets are cast integral and the arm extends 30 inches back of the bolster.

International Equipment Co., Ltd.
Montreal, Que., Canada

**American Steel Foundries**
NEW YORK CHICAGO ST. LOUIS

# Half Your Bonding is Done At the O-B Factory

To make your bonding easier, each detail of O-B Arc Weld Bond, each detail of O-B Resistance Welder was planned to save time and trouble at every track joint.

In the O-B Bond this is accomplished by the 90° welding angle, the "steel to steel with steel" welding, the steel sleeve which completely surrounds the copper terminal.

The safety control panel does it on the O-B Welder.

An automatic circuit breaker obeys a push switch in the operator's hand. He controls the machine absolutely by a push of his thumb. He works rapidly—unhandicapped. In case of overload or short circuit the breaker opens automatically.

*Send for "Electric Arc Weld Binding."*

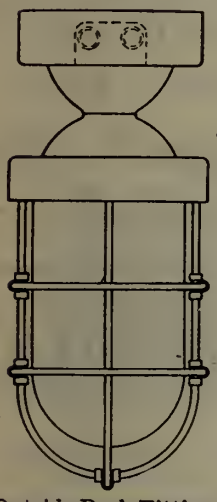
## The Ohio Brass Company

**Mansfield, Ohio**

*Manufacturers—Trolley Materials; Rail Bonds; Car Equipment Materials; High Tension Porcelain Insulators; Third Rail Insulators*

**O-B Type AW3 Bond Base of Rail**

**O-B Type AW2 Bond Base of Rail**



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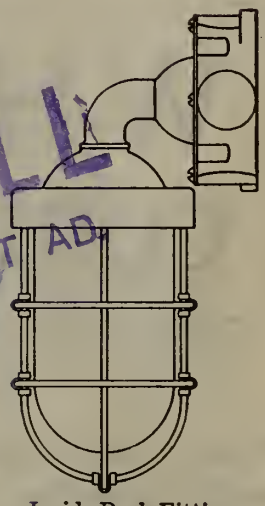
"LOCH TAY" 8,282 TONS D.W.

Built by Canadian Vickers Limited, Montreal

# Steel Cargo Vessel

recently delivered to
Alfred Monsen, Norway.
She is wired throughout with
Cables and Fittings approved by Lloyds
and manufactured by



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Three Conductor Wire Braided Lead Covered Marine Cable

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## Turntable Tractors

More than one hundred railroads use over 700 Nichols' Electric Tractors.

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Eighty-five railroads and car builders use nearly 200 Nichols' Electric Transfer Tables.

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ESTABLISHED 1849.

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**JOHN A. THOMPSON,**
Gen. Man. Western Canada, Toronto.

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**BUFFALO BEAMS ARE BEST BEAMS**

*Offices*
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Syndicate Trust Bldg.
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10 St. Antoine St.

*Works:*
BUFFALO, N.Y.

**Canadian Works: HAMILTON, ONT.**

Brake Beams for all Classes of Cars, Locomotives and Electric Equipment

# 4-6-2 TYPE LOCOMOTIVE

**Built for the Canadian National Railways**

We are specialists in building locomotives.

We build all types and sizes, also all kinds of spare and repair parts for locomotives and tenders.

Our experience puts us in a position to give you expert advice as to what particular type and size of locomotive is best suited to your needs.

# Montreal Locomotive Works, Limited

**DOMINION EXPRESS BUILDING, MONTREAL, CANADA**

# LINK-BELT LOCOMOTIVE CRANES

A LINK-BELT LOCOMOTIVE CRANE saves $18,000 annually for the B. & O. C. T. Ry. Co. of Chicago.

They use it for cleaning out cinder pits, loading and unloading cars, making fills and roadbed for new track, handling steel rails and heavy construction work, pile driving, etc.

It is an invaluable aid, and it does the work of 25 men. In addition to this substantial financial saving, it decreases interference with train movement, and more quickly releases cars for other service.

Let us tell you more about the Link-Belt Crane. Send for catalog No. 370.

**CANADIAN LINK-BELT COMPANY, LTD.**

**Wellington & Peter Sts. - - - - - Toronto**

# Copper Trolley Wire
# Feeder Cable
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## Ballast Cables, Switch Ropes and Wrecking Cables

IN stock at each of our warehouses we have a good assortment of standard sizes of Steel Wire Ropes in Siemens-Martin Steel, Crucible Cast Steel, Plough Steel and Extra Plough Steel.

*We also manufacture and carry in stock all kinds of*

**BARE and INSULATED ELECTRICAL WIRE and CABLE**

*Write our nearest office for quotations.*

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**LIMITED**

**Phone Belmont 2300 TORONTO**

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## CANADIAN STEEL-TIRE AND WHEEL COMPANY, LIMITED

Locomotive and Car Wheel Tires
Steel Tired Wheels of all kinds

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**Office:**
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# RAILWAY AND MARINE LIGHTING

Complete Equipment for Electric or Gas Lighting of Railway Passenger Cars

Complete Apparatus for Harbors and Rivers—Buoys, Beacon Towers and Lanterns

## The Safety Car Heating and Lighting Co.

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THE reason a lid is lost is because the hinge pin is lost. The McCord Journal Box has no pin to lose. The eccentric trunnions are cast as part of the lid. After lid is applied, it is permanently locked to the box. It means a saving on lid renewals.

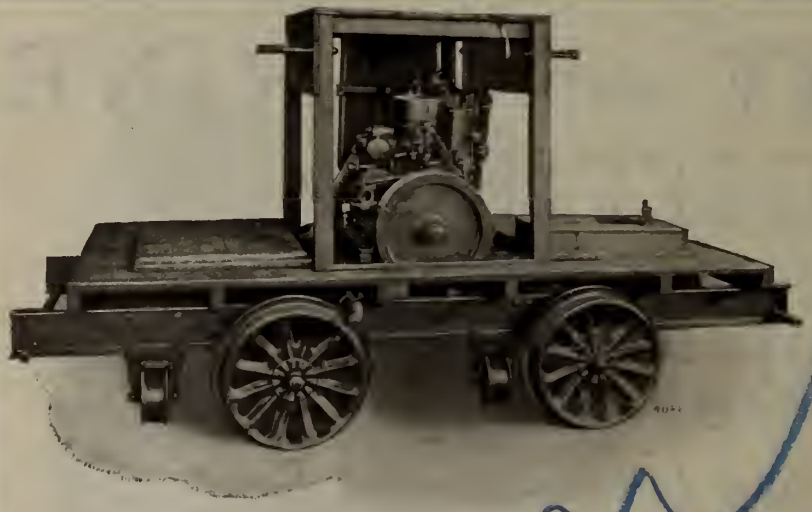
**McCORD & COMPANY**

**Montreal Brantford**

**The Holden Company, Limited,**

**350-356 St. James Street, Montreal**

**342 Adelaide St. West, Toronto, Ont. 150 Princess St., Winnipeg, Man. 81 Pender St. West, Vancouver, B.C.**



View of an "IMPERIAL" Gasoline Engine Driven Compressor Car for operating two "IMPERIAL" Tampers. View shows Housing Doors dropped.

These cars are made in two sizes, 12 and 20 horse power, for operating two or four tie tampers. Each car is self propelled and fitted with cross trucks for quickly moving the car on to or off the track.

***An Imperial Compressor Car***

**—will carry your section gang to and from their work and give you air to tamp ties, break out frozen coal or frozen dirt in cattle cars, run air hoists, pumps, rock drills, pneumatic riveters, chippers, drills, woodborers, grinders, sand blasts, paint sprays, etc.**

**Bulletins and detailed information covering compressor cars, air tools or complete outfits sent on request.**

**Canadian Ingersoll-Rand Co., Limited**

*Branches:* SYDNEY, SHERBROOKE, MONTREAL, TORONTO, COBALT, TIMMINS, WINNIPEG, NELSON, VANCOUVER

# The Norton New Series "BB"

## Speed Controlled Self-Lowering Jack

Is the Highest Class Jack in the World.

This *New Series "BB"* is a marvel of *Simplicity* and *Safety*. It is *Speed Controlled* and *Trouble Proof*.

*Send for latest Catalogue*

KILL
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**Hamilton Canada**

Porcelain Insulators and Pole Line Hardware

# CASTINGS of Every Description in Brass and Bronze

NEW BRASS FOUNDRY

Rough or Machined Complete to Specification

## Ottawa Car Manufacturing Co., Ltd.

OTTAWA - - ONTARIO

KILL LAST AD.

### Your Shop Schedule Board Reflects the Installations of Hunt-Spiller Gun Iron

Is there any better evidence of the ability to "stand up" under hard service, than to put engines through the shop in record time?

General repairs should not mean the complete renewing of every part.

**Hunt-Spiller Gun Iron**

shoes and wedges, crosshead shoes, cylinder and valve bushings and side rod bushings have made many records of slight wear from shopping to shopping. A little lining here and there and the engine is ready for revenue service. This is due to the tough, dense and wear-resisting qualities of

**Hunt-Spiller Gun Iron**

*Made only by*

## Hunt-Spiller Manufacturing Corporation

W. B. LEACH, Pres. & Gen. Mgr. J. G. PLATT, Vice-Pres. & Sales Mgr.

Office and Works:
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# Port Arthur Shipbuilding Co., Limited

**Port Arthur, Canada**

Canadian Adventurer, launched at Port Arthur, by H.R.H. Prince of Wales, Sept. 8, 1919.

*Designers and Builders of*

Steel Ships
Boilers
Engines
Etc.

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

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Railway and Steamship Lines
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WOOD AND STEEL SHIPBUILDERS AND ENGINEERS

SPECIAL FACILITIES FOR REPAIRS

SHEER LEGS AND WHARFAGE AT DEEP WATER PIER

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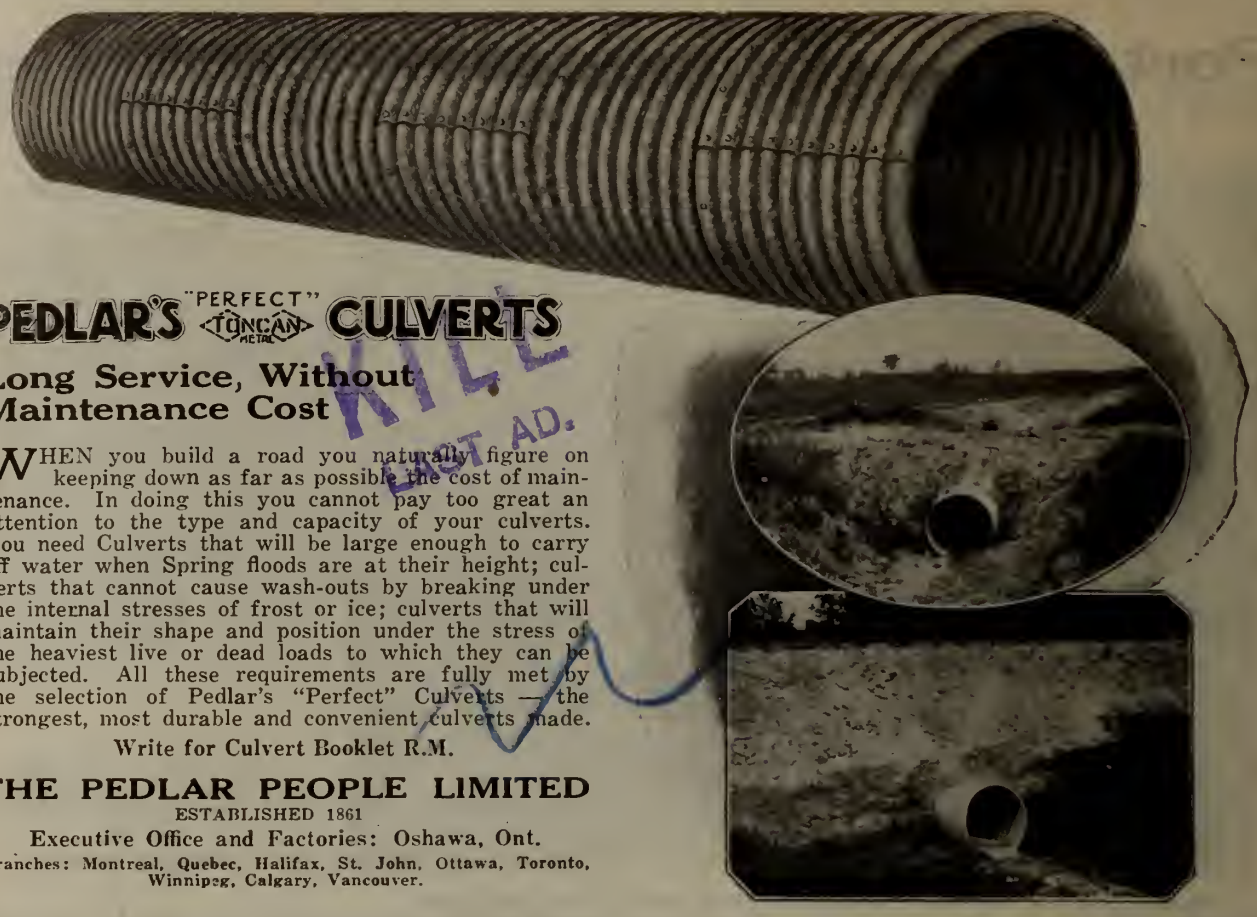

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### Long Service, Without Maintenance Cost

WHEN you build a road you naturally figure on keeping down as far as possible the cost of maintenance. In doing this you cannot pay too great an attention to the type and capacity of your culverts. You need Culverts that will be large enough to carry off water when Spring floods are at their height; culverts that cannot cause wash-outs by breaking under the internal stresses of frost or ice; culverts that will maintain their shape and position under the stress of the heaviest live or dead loads to which they can be subjected. All these requirements are fully met by the selection of Pedlar's "Perfect" Culverts — the strongest, most durable and convenient culverts made.

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ESTABLISHED 1861

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Branches: Montreal, Quebec, Halifax, St. John, Ottawa, Toronto, Winnipeg, Calgary, Vancouver.

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WESTINGHOUSE SMALL TURBO GENERATOR UNIT

## Small Turbo Generators

are an unequalled success in railway and marine service.

They are excellent for lighting the field of operation of cranes, dredges and similar classes of work at night.

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AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps*
*Double Shoulder Solid Bottom*
*Switch Riser Plates*

SWITCHES
FROGS AND CROSSINGS
MANGANESE TRACK WORK A SPECIALTY

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Worlds Largest Makers
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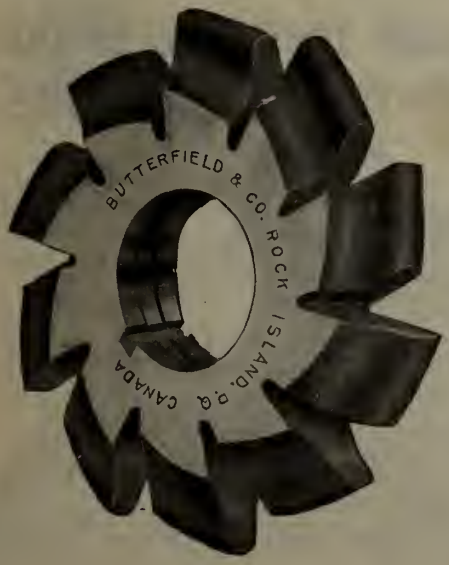


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*(Patented)*

THE LATEST AND LAST in a NUT LOCKING DEVICE

TWO CLAIMS are made proving the Superiority of the Hold Tite Nut Lock.

CHEAPNESS. Look at the Washer! Nothing can be made cheaper.

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WHAT MORE? NOTE THE SIMPLICITY—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

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THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF

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Cast Iron Water, Gas and Culvert Pipe,
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Why?

Because these unreinforced brake shoes did not give equivalent service for their cost, having broken in service before their life had barely commenced.

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Pole Line Hardware of Every Description

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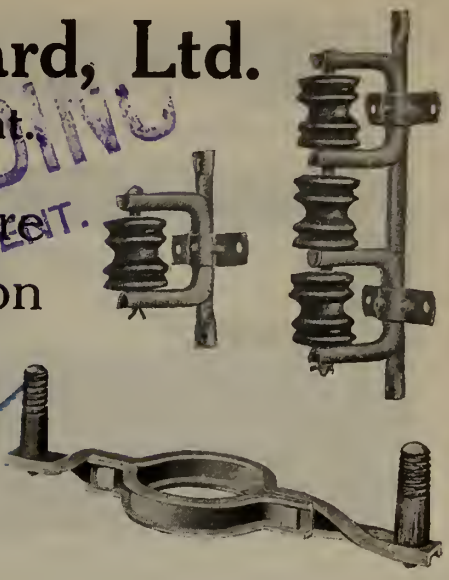
Made in Canada under Peirce and Hubbard Patents





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THE RIGHT WAY—
THE TWO WAY—
THE TIGHT WAY

Rail Seat inclined and pedestaled
Hook on inside flange of Rail

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Lagonda Arch Tube Cleaner

Lagonda Cleaner Removing Scale from Arch Tubes.

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Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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Type "K-2" 500 watt 32 volt Turbo-Generator

*Manufacturers of*

Locomotive Headlights
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of all descriptions

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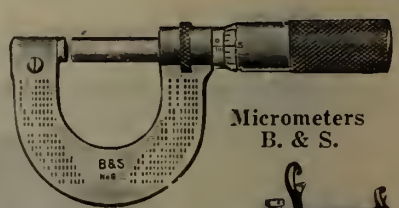


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Pipe Vises
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In addition to the tools shown, our line includes Set Screws, Cap Screws, Machine Screws, High Speed and Carbon Drills, Files (extra large stock) and a complete line of machinists' tools (Starrett, Brown & Sharpe, etc.)

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insure satisfaction in difficult work Correct design, right materials and superior fabrication.

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Piston Rod and Valve Stem Packing for Super Heat and Saturated Steam.
"Packing that Packs." Manufactured in Canada.

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Pneumatic Tools. Tools that are guaranteed.
Ask for trials or tests and satisfy yourself.

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Made in Canada from steel made in Canada.
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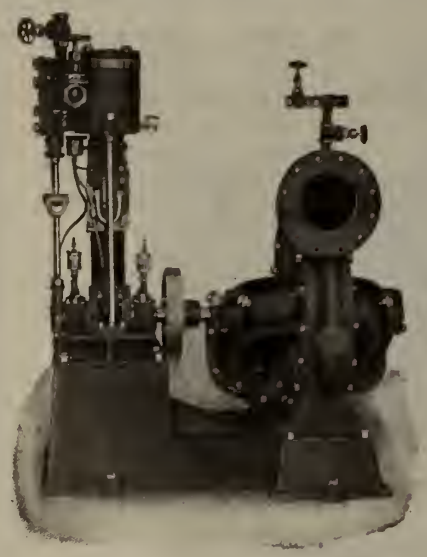

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Our lines are the result of years of careful perfecting of design, and we are using only the best labor and material available.

**Every Pump Carefully Tested Before Being Shipped.**

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# ROAD BOSS MOTOR

and open the door for greater efficiency, more profits for your road, and greater advancement for yourself.

You cannot hope to keep an efficient and contented crew if you are using the old time "Armstrong" Pump Car. Nor can you hope to keep a crew of good men and expect them to push a motor car seven to fourteen miles per day. That is past forever. The sooner you equip your car with a dependable motor—a four cycle, free running, water cooled, reversible engine—the sooner your labor troubles will be at an end.

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Write and ask us about the exclusive features of the Road Boss and what practical railroad men like yourself say about its performance.

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## Locomotive Type Boilers for Round Houses
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16'-6" diameter propeller cast by us.

Thor

ONE-PIECE PNEUMATIC LONG-STROKE HAMMER

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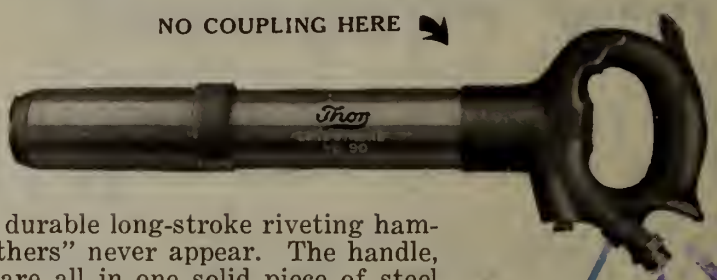


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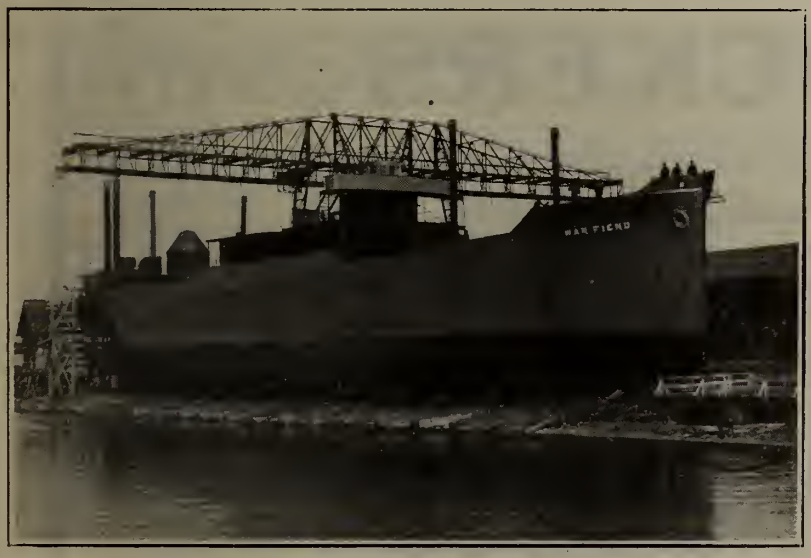


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In other words, what do you get when you buy "VAN DORN".

Not merely a piece of machined iron, or steel. When you buy "VAN DORN" gearing you get MAXIMUM GEAR SERVICE

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But when track is poorly maintained the rails wear out much quicker, ties will not last as long and speed of trains must be reduced; an increase in operating expense, a much greater increase than the percentage of neglect would indicate.

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**Fairmont Gas Engine & Railway Motor Car Company**

FAIRMONT - MINN.

"MEAD-MORRISON"

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*Electric Car Puller*

Don't wait for the switching locomotive or a gang of men.

The CAR PULLER requires only ONE MAN.

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**5000 lbs. at 20 feet a minute**
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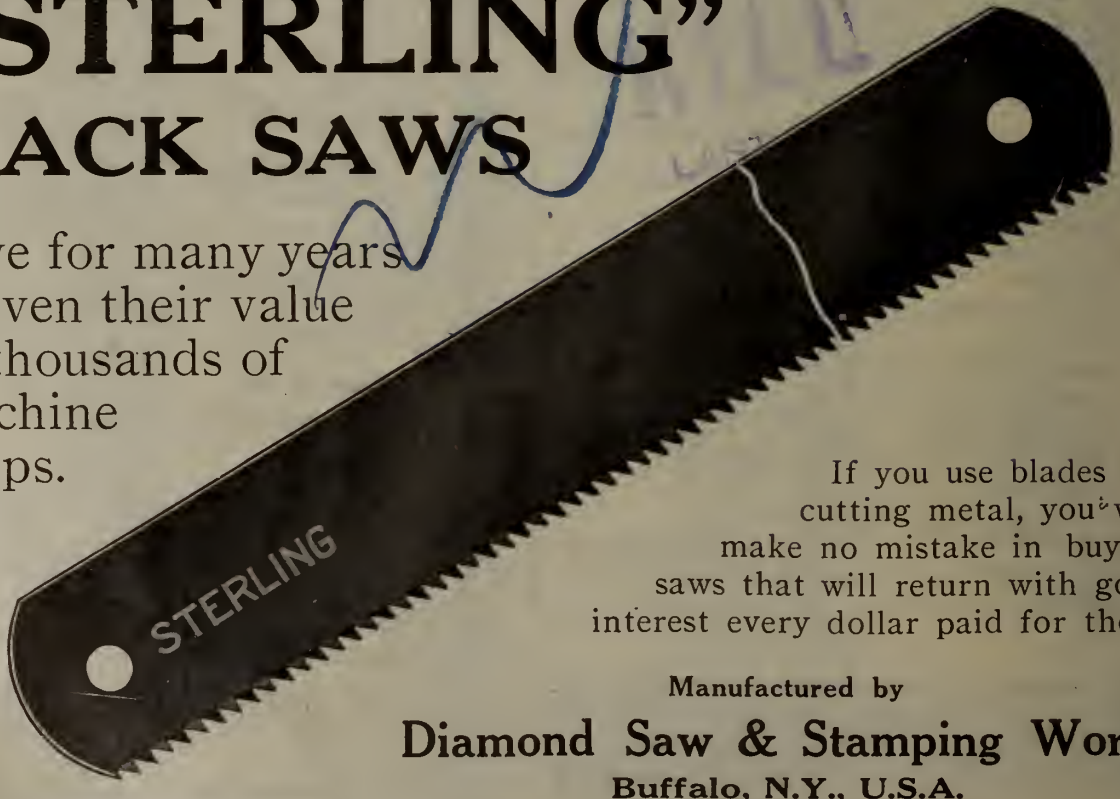


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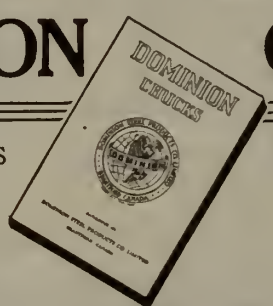


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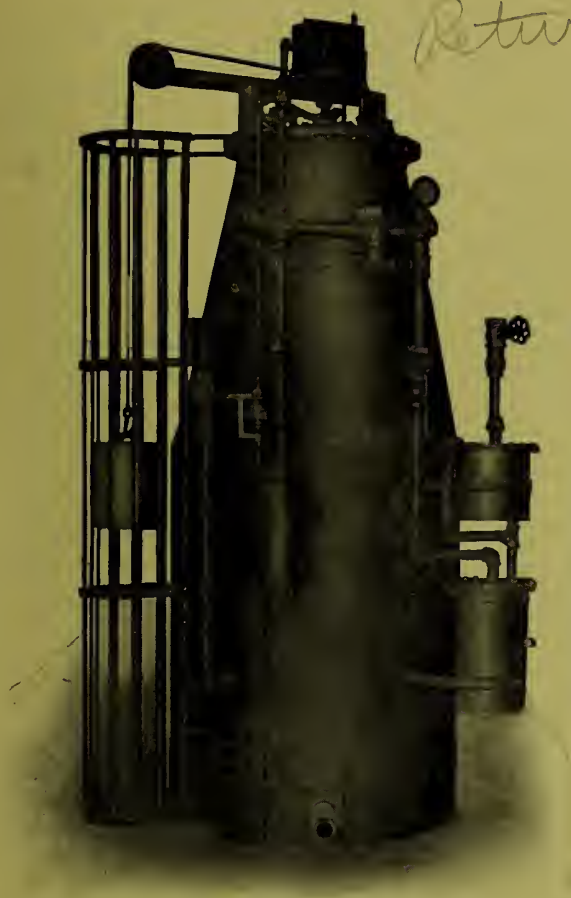

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ESTABLISHED 1898.

Number 274.
Index to contents, pg. 659.

TORONTO, CANADA, DECEMBER, 1920

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The Brownhoist locomotive crane is a wonderfully useful machine wherever there is bulk material to handle. But it is not a one purpose machine that lies idle when your bucket work is finished. The Brownhoist's flexibility and all around usefulness make certain the fact that it will always be wanted for many jobs around the plant and yard.

If you are interested in handling material and would like to see some of the many jobs a Brownhoist will handle, and handle right, just write for Catalog K. This is a complete book on locomotive crane work and will be sent you on request.

**BROWNHOIST**

**Products include:**

Locomotive Cranes
Grab Buckets
Drag-line Buckets
Electric Hoists
Tramrails and Trolleys
Overhead Tr. Cranes
Pillar and Jib Cranes
Heavy Dock Machinery
Suspended Concrete Bins

*Write for Catalogs*

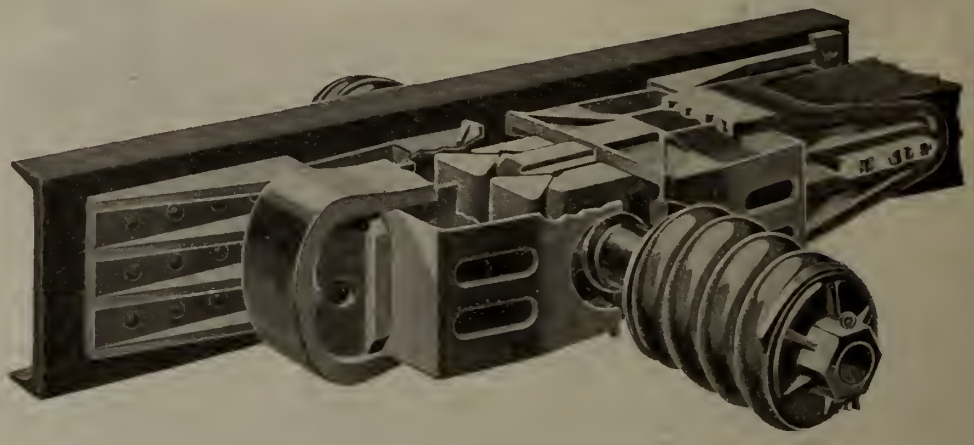
# The Brown Hoisting Machinery Company

**40 Years in the Crane Business** — **Cleveland, Ohio, U. S. A.**

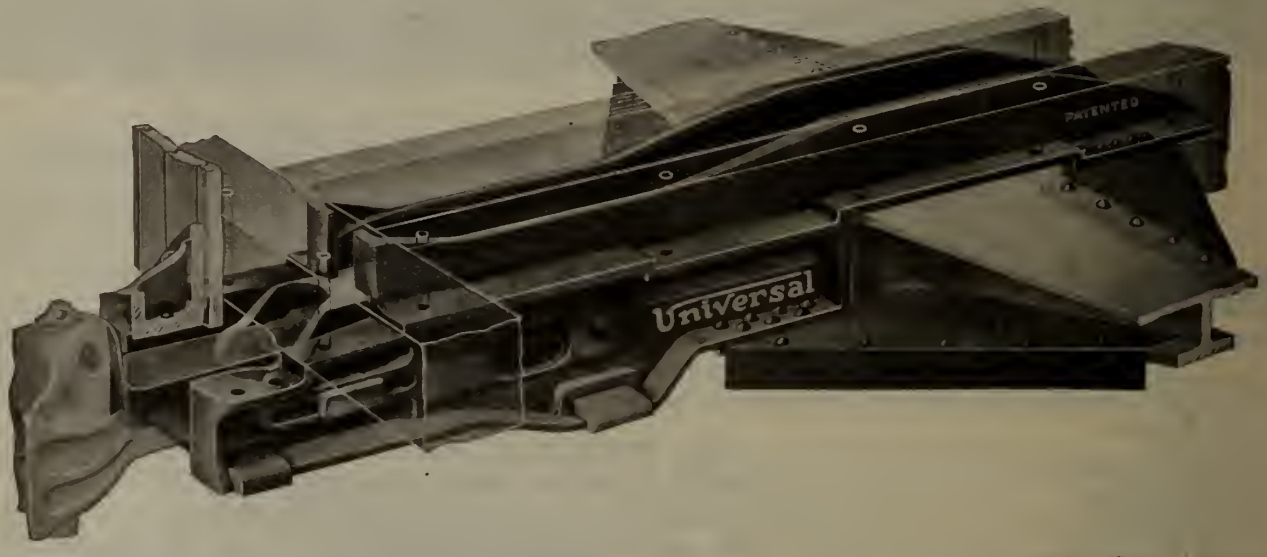
**Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists.**

**Branch Offices in New York, Pittsburgh, Chicago and San Francisco. European Rep.: H. E. Hayes, 12 Rue de Phalsbourg, Paris.**

# CARDWELL FRICTION DRAFT GEAR
## MADE IN CANADA



## *Universal* ATTACHMENTS
## MADE IN CANADA




REENFORCING DRAFT ARMS
TANDEM SPRING DRAFT RIGGING
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CAST STEEL YOKES
DRAFT LUGS or PLATES
FRICTIONLESS SIDE BEARINGS

## MADE IN CANADA

# WEBB. G. KRAUSER
**Transportation Building, MONTREAL**

# YOUR BUSINESS
## —to get lubrication at its best

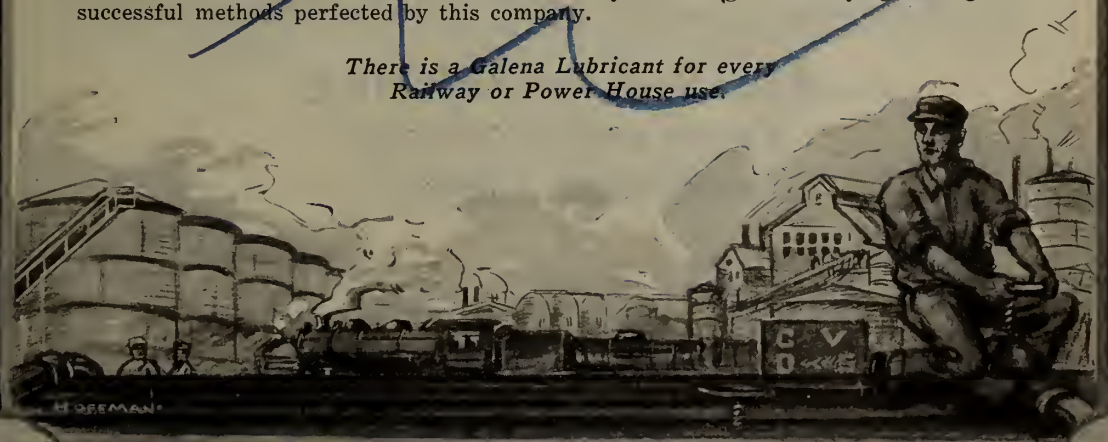
That correct lubrication is essential to efficient operation is a truth too well known to need comment. It is a factor of such importance that earnings are affected far beyond the cost of the lubricants themselves.

The effects of faulty lubrication are shown in many ways; in hot boxes, time losses, withdrawal of equipment, repairs and depreciation due to general wear and tear. Frictional power losses alone often run as high as twenty per cent. All of these add to the cost of lubrication.

Correct lubrication cannot be secured simply by the application of oil and good intentions—it is a scientific proposition that is governed by immutable laws. Right oils and right methods must be used to secure satisfactory results. The unusual and varying conditions presented in railway lubrication work makes this imperative.

Galena Quality Oils and Galena Service provide the surest and safest means of securing highly efficient and economical operation. They are inter-dependent and work hand-in-hand in the solution of lubrication difficulties by installing and carrying through the successful methods perfected by this company.

*There is a Galena Lubricant for every Railway or Power House use.*



**The Galena-Signal Oil Co. of Canada**
**Limited**
**TORONTO - MONTREAL**

KILL
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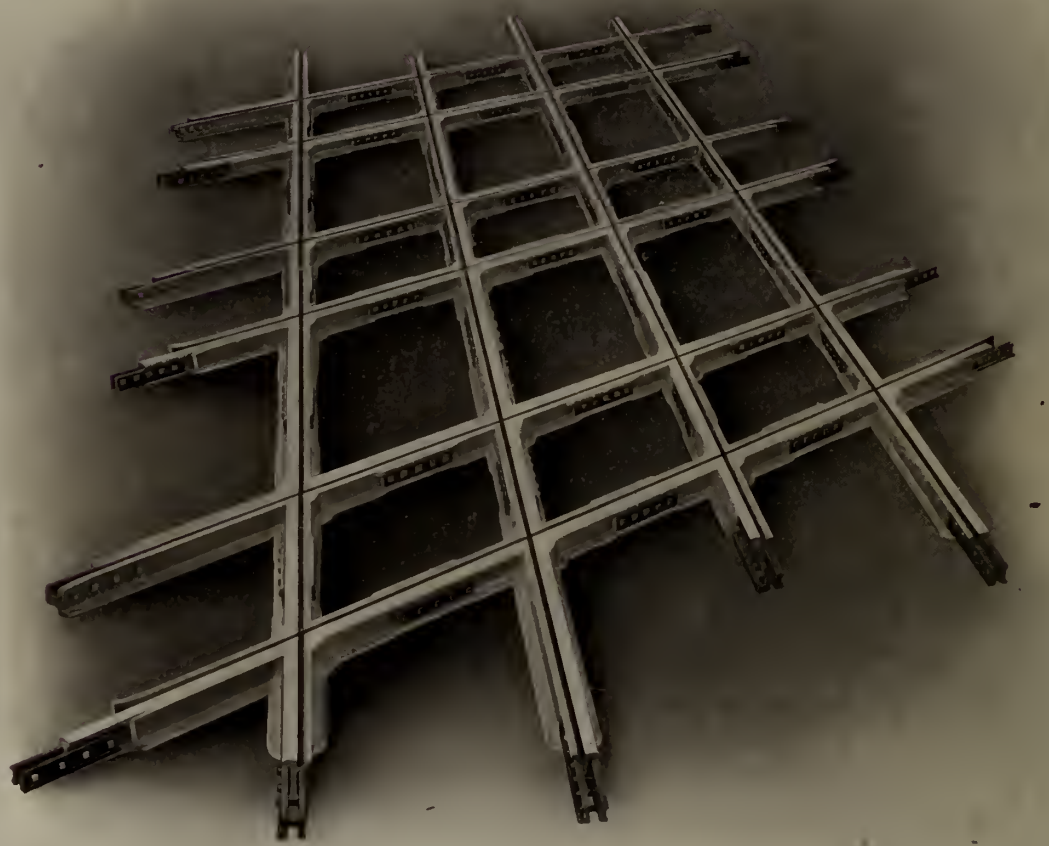
# TRACKWORK

FOR STEAM AND ELECTRIC · RAILWAYS



Solid Manganese-Steel Intersection of 3 Steam and 2 Electric Railway Tracks.

Are You considering
Your requirements
for next spring
?

## CANADIAN STEEL FOUNDRIES LIMITED

*General Offices:*

TRANSPORTATION BUILDING - MONTREAL

**66 Vessels**

**Canada's Commerce Carriers**

**Total Tonnage 393,000**

# Canadian Government Merchant Marine, Limited

## SERVICES NOW IN OPERATION

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| Sydney, N.S. | to Liverpool. |
| Montreal (in Summer). Halifax and St. John, N.B., (in Winter). | " " |
| | " London. |
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| | " Rio de Janeiro, Santos, Montevideo and Buenos Aires. |
| | " India and Dutch East Indies. |
| | " Barbados, Trinidad and Demerara. |
| | " Santiago, Cuba and Kingston, Jamaica. |
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| Vancouver. | " Sydney and Melbourne, Australia, and Auckland, N.Z. |
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| | " United Kingdom ports via Panama Canal (proposed). |

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R. B. TEAKLE, General Manager,
W. A. CUNNINGHAM, Acting General Freight Agt.
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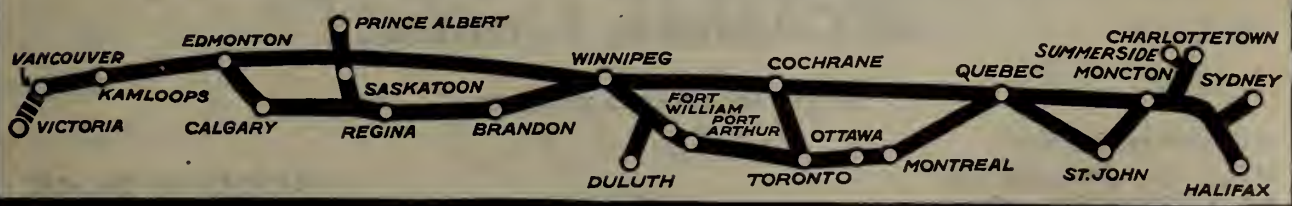


# Canadian National Railways

# "THE BOSS"

The ***Boss*** now being on the job beware of any substitutes.

All the principal railroads in this country are now safeguarding their equipment by the use of **BOSS LOCK NUTS.** The Nut that positively cannot shake loose. The railroads now using **BOSS LOCK NUTS** know they are insuring against accidents by simply **"writing it right"** when specifying lock nuts, like this

***"Boss Lock Nuts"***

Above Shows Boss Nuts Applied to Box and Column Bolts.

***Made in Canada from ore to finished product.***

## Boss Lock Nut Company
### of Canada, Limited

*Write for latest catalogue.*

HEAD OFFICE:
**263 St. James St.**
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# STEEL & IRON PRODUCTS

Quality Service

## OF EVERY DESCRIPTION

KILL LAST AD

### HAMILTON PIG IRON
Basic Malleable Foundry

### STEEL AND IRON BARS

### OPEN HEARTH STEEL SHEETS

### RAILROAD TRACK MATERIAL
Angle Bars Track Bolts Tie Plates Tie Rods Spikes

| SCREWS | WIRE | NAILS |
|---|---|---|
| Steel | Steel and Brass, Copper and | Wire |
| Brass | Bronze, Heavy and Fine, | Cut |
| Bronze | Bright, Annealed, Coppered, | Boat |
| Wood and | Galvanized, Tinned, Stranded, | Horseshoe |
| Machine | Steel and Copper Cable, | Shoe Nails |
| Screws | Barb, Woven Clothes Line | Tacks |

### POLE LINE HARDWARE
Pole Steps Cross Arm Braces Guy Clamps Guy Rods

| WROUGHT PIPE | FORGINGS | LEAD PRODUCTS |
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| Black Pipe | Car Axles | Lead Pipe |
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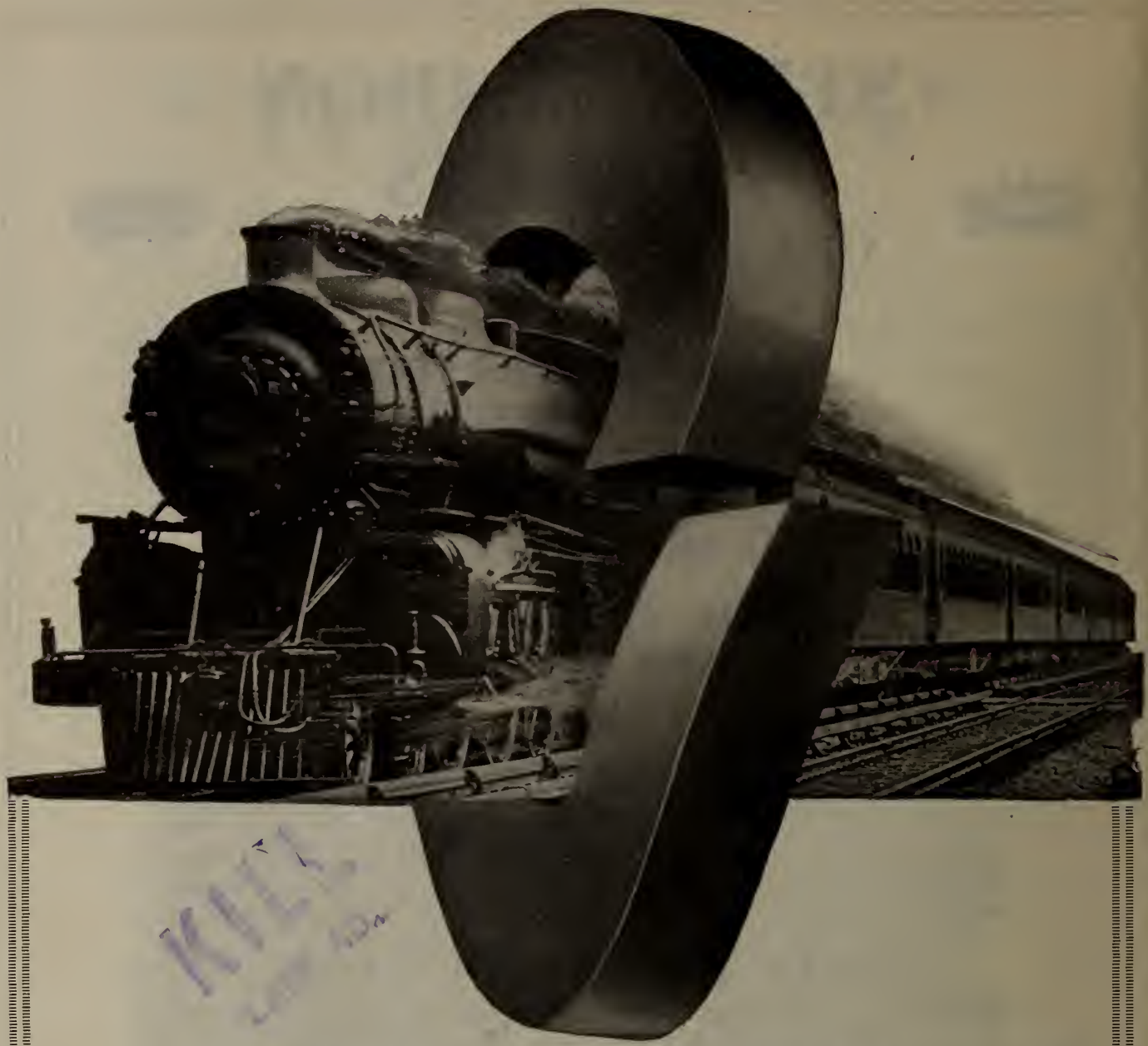
BLOOMS
BILLETS
PLOW BEAMS
ANGLES
CHANNELS

THE
## STEEL COMPANY
OF
## CANADA
LIMITED
HAMILTON MONTREAL

WIRE RODS
HORSE SHOES
FENCING
RIVETS
BURRS



# TWENTIETH CENTURY

Railroad operation demands the use of

# HIPOWER NUT LOCKS

for efficient, economical and permanent maintenance of track

***Hipowers carry 'em through***

## The National Lock Washer Co.

Established 1886

**Newark, N. J.**

**New York** **Chicago** **Detroit**

# EVAPORATORS

## The New Weir Evaporator

WEIR PATENT
CONTINUOUS BRINING &
AUTOMATIC FEEDING.

## Embodies Three Important Improvements

1. The Patent Brine Ejector.
2. The Automatic Feed Regulator.
3. The Special Tube Coupling.

These devices ensure uniform efficiency, simplify working, and lessen costs of upkeep.

They are fully described and illustrated in our New Evaporator Booklet—Send for it.

## G. & J. Weir, Limited, Scotland

MADE IN CANADA

Contractors to the British Admiralty and War Office and to the Governments of Australia, Canada, Egypt, India, New Zealand, South Africa, Argentine, Belgium, Brazil, Chili, Denmark, France, Greece, Holland, Italy, Japan, Norway, Portugal, Russia, Siam, Spain, Sweden, United States, Etc., Etc., also to the leading Steamship Lines and principal municipalities throughout the world.

MADE IN CANADA

Sole Agents

## PEACOCK BROTHERS, LIMITED
MONTREAL

# You can always depend on "CASEY" Railway Lanterns

The "CASEY" light is always there when needed. It positively will not blow out in any wind or any signalling movement. That means safety.

The "CASEY" light is always under easy control. In the bitterest weather the mittened hand can readily turn the flame up or down by simply twisting the fluted bottom to left or right.

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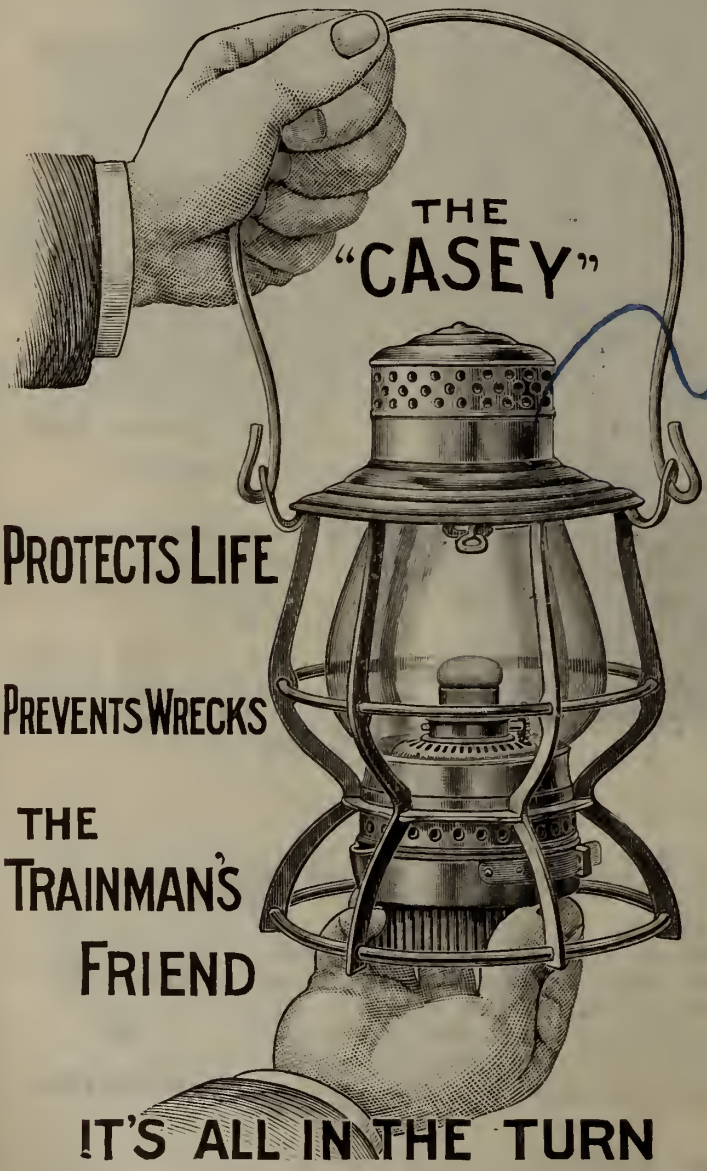



## Our Special Offer—

To reduce our large stock we will, for a limited period, sell these lanterns at the following prices:—

**No. 39 CASEY Lanterns with 7/8" Signal Oil Burners**

**Without Globes, per doz. $15.00**

**With Clear Globes, per doz. $16.00**

**With Ruby Globes, per doz. $22.00**

***Write or wire the number you require***

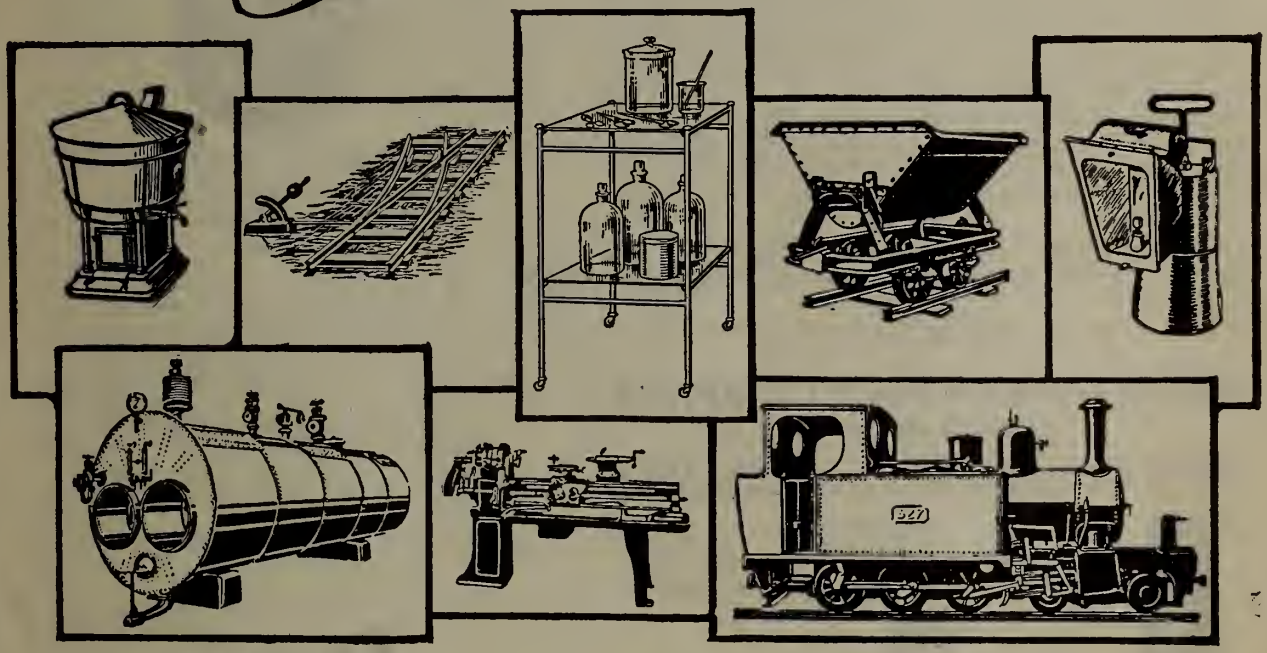
We have a very interesting booklet on Locomotive Headlight Equipment, which we will be glad to send to any interested Operating Official of a Canadian railway.

## Lyman Tube & Supply Co., Limited

**Montreal Toronto Winnipeg Vancouver New York**

GR MINISTRY of MUNITIONS

# GOVERNMENT PROPERTY For SALE



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## ENGINEERING STORES

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Cable address: "DISPEXPORT, MUNORGIZE, LONDON."

# CAR WHEEL BORING EFFICIENCY

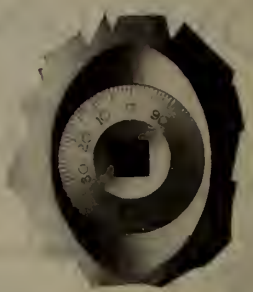
THE gradual installation of Davis Expansion Car Wheel Boring Tools into almost every wheel boring shop, of any note, in the United States, and the universal adoption of the Davis System of Car Wheel boring, tells a story of success based on merit alone. To-day, fully 98% of all car wheels are bored with Davis Expansion Car Wheel Boring Tools—a positive guarantee of their efficiency and economy.

Wheel boring mills equipped with Davis Tools will bore more wheels per day, absolutely accurate and at a 25% saving in costs. Greatest efficiency and economy is possible by the Davis method of boring all wheels to fit the axles, instead of turning down the axles to fit the wheels. On new work, wheels are bored to fit standard gauges and axles are turned to standard sizes to correspond. On repair work all wheels are bored to fit the axles, saving the time and expense of uselessly turning down good axles to fit the wheels. Consider carefully what a saving this practice would effect in your wheel shop.

You can accomplish these results with Davis Expansion Car Wheel Boring Tools, as the cutters are expanded to compensate for wear by a practical micrometer adjusting feature, which insures accurate adjustment to size, in less than a minute.

Let us explain the many advantages of operating your wheel boring mills with these efficient tools. You will not be obligated.

A letter to-day will bring full information.



GRADUATED MICROMETER ADJUSTMENT.

*(Actual Size)*

This graduated micrometer screw controls the travel of a patented double expanding wedge which forces the cutters out, uniformly, as the screw is turned.

## DAVIS BORING TOOL COMPANY

INCORPORATED

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Canadian Agents:

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SPECIAL "TWO-IN-ONE"

REGULAR "TWO-IN-ONE"

"STANDARD"

# Davis Expansion Car Wheel Boring Tools

CAN BE APPLIED TO ANY MAKE WHEEL BORING MACHINE

KILL
LAST AD.

THE Dominion Oxygen Company, Ltd,. is founded on Faith. Faith in Canada, in her people, her strength and her industrial future.

This trust in the greater development of the Dominion, has taken concrete form in a chain of modern plants for the production of pure oxygen. The opening program includes five plants to be erected in as many important industrial centers. Building operations are already under way in Toronto.

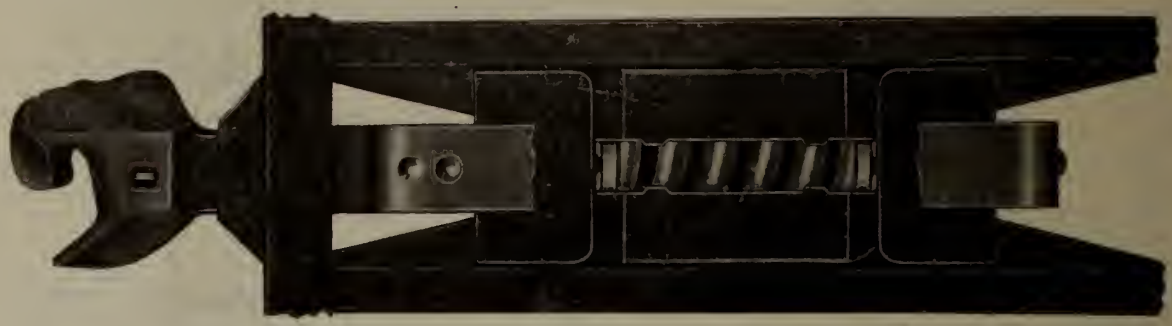
Pending further information on its progress the Dominion Oxygen Company, Ltd. invites the inquiries of Canadian oxygen users as to its broad scope and liberal policy.

DOMINION OXYGEN COMPANY, LTD.
Hillcrest Park
Toronto - Ontario

D-8

# Murray Cast Steel Friction Draft Gear

MADE IN CANADA



If the superiority of this device has never been apparent to you, it will be upon thorough investigation. For it will reveal that our claims for excellence are based on actual facts.

May be used with any draft attachment.

In use on thousands of cars, including U.S. R.A. standard cars.

KEYOKE RAILWAY EQUIPMENT CO.

*Monadnock Building*

**Chicago, Ill.**

# FAIRBANKS-MORSE

## An Achievement in Mechanics

EACH individual department of The Canadian Fairbanks-Morse Company, Limited has given industrial Canada a new conception of achievement in mechanics. Each department has established a 100% quality and service standard. This is what enables Fairbanks valves to stand pre-eminent wherever valves are used.

When an engineer specifies Fairbanks valves, he knows that he has selected not only quality of material but workmanship that guarantees perfect operation.

He is satisfied with the reputation and service of the institution that stands behind them. He acknowledges an achievement in mechanics.

Wherever pipe lines are laid—in Canada's great industrial plants—in her immense water systems—in mines and mills—Fairbanks valves are giving a service that is marked by the 100% seal of quality, the standard of The Canadian Fairbanks-Morse Co. Limited.

Our nearest branch will give you the benefit of this service, Our experts will help you in selecting valves and everything mechanical that you require. Make our catalogue your buying guide.

**The Canadian Fairbanks-Morse Co.**
**Limited**

*Canada's Departmental House for Mechanical Goods*

Halifax St. John Quebec Montreal Ottawa Toronto Hamilton
St. Catharines Windsor Winnipeg Regina
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5

*The efficiency of an electrical installation is largely dependent on the reliability of its Wiring Devices*

# Electricity, the Friend of Mankind

ELECTRICITY has done much to make the lot of man easier. The housewife and the school child, the factory worker and the busy executive all benefit by the co-operation of electricity in their daily tasks.

The degree of satisfaction derived from any electrical installation largely depends upon the quality of the Wiring Devices used.

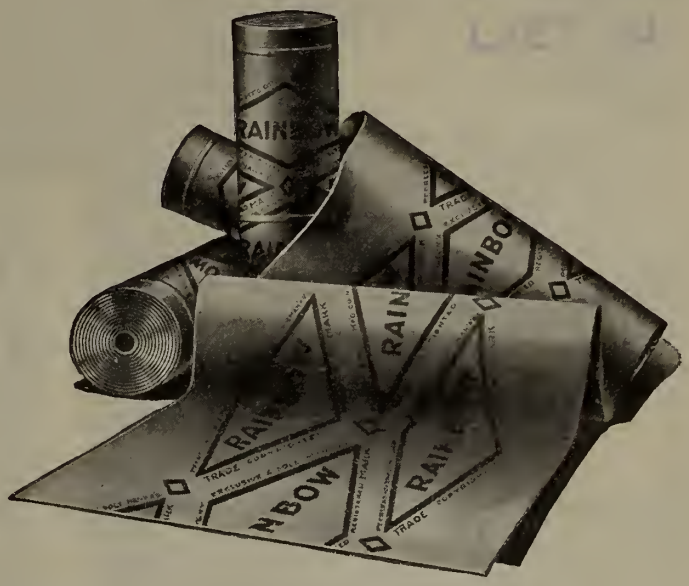
The knowledge that C.G.E. Wiring Devices have been used throughout on an installation, guarantees freedom from trouble and disappointment.

*"Made in Canada"*

## Canadian General Electric Company, Limited

Head Office TORONTO

Branch Offices: Montreal, Quebec, Sherbrooke, Halifax, Sydney, St. John, Ottawa, Hamilton, London, Windsor, Cobalt, South Porcupine, Winnipeg, Calgary, Edmonton, Nelson, Vancouver and Victoria.



# 30 Years of Unexcelled Service

—under the most exacting conditions—have proved the worth of Rainbow Sheet Packing wherever steam is used. It is the *original red sheet* packing and the "Rainbow" Diamond trade-mark is your assurance of dependability.

# Rainbow Sheet Packing

is the one gasket material that may be depended upon to give faithful service and save many replacements.

Genuine Rainbow Sheet Packing is made in Canada.

We will gladly send you a catalogue and, if you wish, one of our technical experts will help you select the right packing for your particular requirements.

CANADIAN CONSOLIDATED RUBBER CO. LIMITED
DOMINION RUBBER SYSTEM
AND ASSOCIATED COMPANIES

## Dominion Rubber System

***Rainbow Rubber Products Department***

**201 Inspector Street - - Montreal**

SUPERIOR GRAPHITE PAINT
It Prevents Rust

# True Economy In Protection

When you specify paint for protection you should select for your work the paint that has proven its worth in service. Its use will mean utmost satisfaction in the long run.

For thirty-five years Superior Graphite Paint has been giving maximum service on structural steel and metal surfaces in all sections of the country—positive protection at lowest ultimate cost.

For true economy—for savings on material and up-keep bills—specify Superior Graphite Paint. It will give years of service and is a safe investment in the long run. It can be used without the hazard of experiment. It is one of the Degraco line of dependable paints.

*Color Cards and Painting Specifications on Request*

**DOMINION PAINT WORKS, LIMITED**

*Makers of*

*Degraco Paints, Varnishes, Enamels.*

WALKERVILLE - - - CANADA

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Quebec
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# DEGRACO

## Paints - Varnishes - Enamels

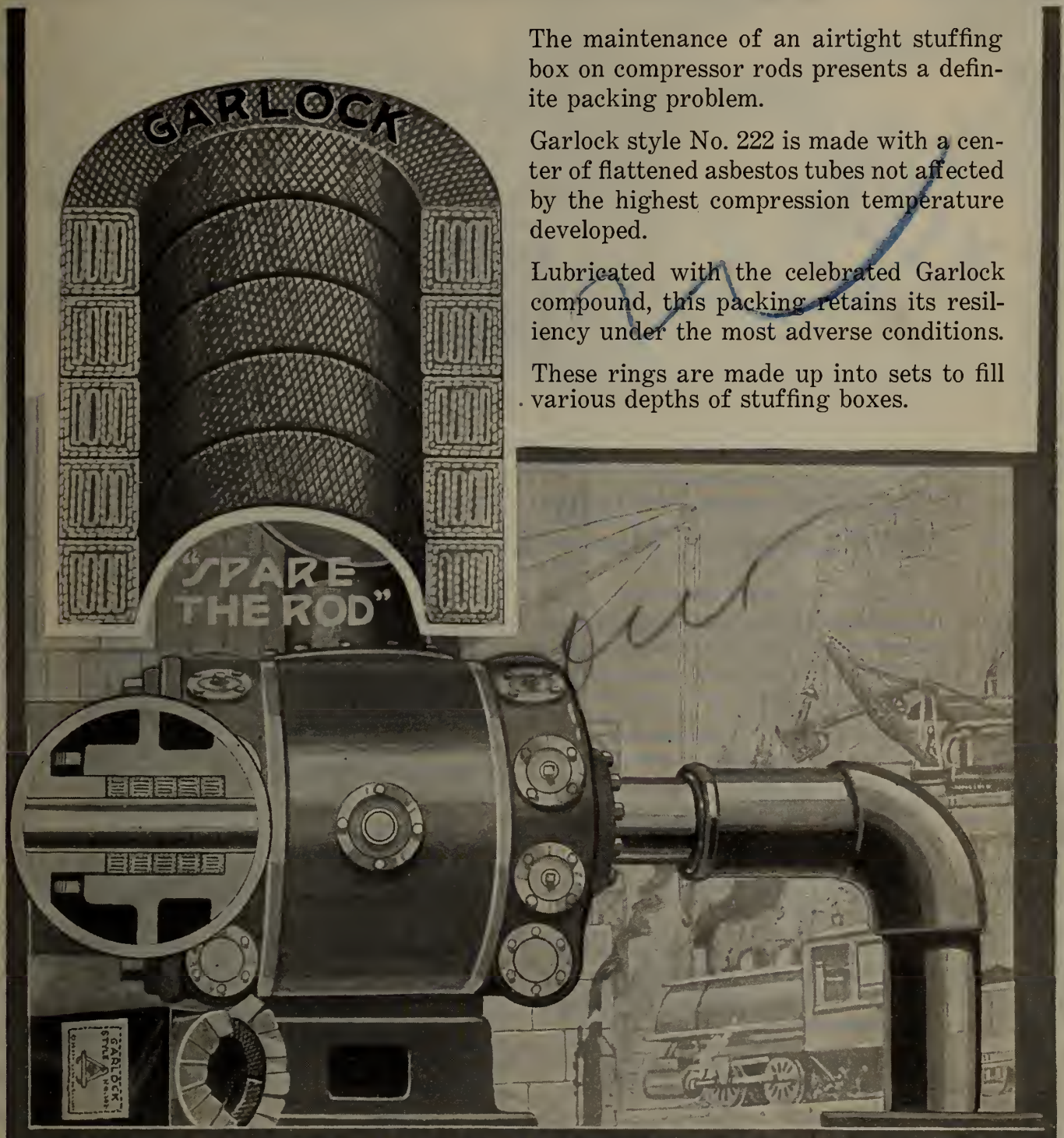
# AIR COMPRESSOR PACKING

The maintenance of an airtight stuffing box on compressor rods presents a definite packing problem.

Garlock style No. 222 is made with a center of flattened asbestos tubes not affected by the highest compression temperature developed.

Lubricated with the celebrated Garlock compound, this packing retains its resiliency under the most adverse conditions.

These rings are made up into sets to fill various depths of stuffing boxes.




# GARLOCK PACKINGS

**The Garlock Packing Company**
**HAMILTON, ONT.**

Branch Offices:

Montreal, Que. Winnipeg, Man. St. John, N.B.
Toronto, Ont. Calgary, Alta. Vancouver, B.C.

KILL
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CHAPTER 12.

# Canada's Authoritative Text Book and Guide for Railway and Marine Executives and Assistants

Buyers of advertising have come to appreciate the importance of the editorial standing of a business publication, as a factor in the value of its advertising pages.

The fact that CANADIAN RAILWAY AND MARINE WORLD has, for 22 years, been recognized as a dependable authority, editorially, in the railway and marine fields, lends to its advertising pages an influence that has a real and tangible value to the advertiser.

Our readers know, too, that we will not admit to our advertising pages announcements of doubtful merit, nor firms of questionable responsibility.

You are in "good company" when you become a member of Canadian Railway and Marine World's advertising "family."

Your very presence in our advertising pages carries with it, by inference, the publisher's approval; and our readers' feeling of confidence in our paper is quite naturally extended to your firm, for that reason.

When men meet in a public place they converse guardedly and with reserve. But let these same men meet as members of an exclusive club; or as fellow wearers of the emblem of some society and the natural barriers of distrust immediately disappear.

So it is with advertisers in Canadian Railway and Marine World — their representatives and their business letters receive a welcome of fellowship which can be secured in no other way.

## CANADIAN RAILWAY AND MARINE WORLD

**Toronto** *Member of* **Canada**

*Audit Bureau of Circulations, Associated Business Papers, Canadian National Newspapers and Periodicals Association, Canadian Press Association.*

*The Canadian Bank of Commerce Building. Arch.: The Dominion Realty Co., Ltd., Toronto. Gen. Cont.: The Dickie Const. Co., Toronto. Roofer: Douglas Bros. Co., Ltd., Montreal, Que.*

# Barrett Specification Roofs

**Bonded for 20 and 10 Years**

## All Over Quebec City—

PERHAPS no other city in the world—surely none on the North American continent—presents, architecturally, such a unique combination of the old and the new as does the City of Quebec. Here quaint, mediaeval Europe joins hands with progressive, modern Canada.

The newer commercial and institutional buildings of the City are not surpassed by structures of similar types anywhere in the Dominion. And most of them are covered with Barrett Specification Roofs, selected by the architects and owners because they are, in the long run, by far the most satisfactory and least expensive roofs it is possible to build.

*Catholic School Commissioners Building, De Salaberry Street. Arch.: Messrs. Tanguay & Lebon. Roofer: Omer Barbeau, Quebec City.*

*The Paquet Company, Ltd., Quebec City. Roofer: Eugene Falardeau, Quebec City.*

### The Only Bonded Roof

Barrett Specification Roofs are the only roofs insured by a Surety Company Bond against upkeep and repair expense.

This Surety Bond runs for 20 or 10 years and is issued without cost to the owner. It may be obtained on any Barrett Specification Roof of 50 squares or larger in towns of 25,000 or more, *and in many smaller places where our inspection service is available.*

Our only stipulations are that The Barrett Specification, *revised April 15, 1920,* shall be strictly followed and that the roofing contractor shall be approved by us.

### Important Notice

The Barrett Specification Type "AA" 20-Year Bonded Roof represents the most permanent roof covering it is possible to construct, and while we bond it for twenty years only, we can name many roofs of this type that have been in service over forty years and are still in good condition.

Where the character of the building does not justify a roof of such extreme length of service, we recommend The Barrett Specification Type "A" Roof, bonded for 10 years. Both roofs are built of the same high-grade materials, the only difference being in the quantity used:

*Full details regarding these Bonded Roofs and copies of The Barrett Specification sent free on request.*

*Above at left: Robert Reford Co., Ltd., Quebec City. Arch.: Messrs. Staveley & Staveley, Quebec City. Roofer: Eug. Falardeau, Quebec City.*

*Messrs. J. B. Renaud & Co., Quebec City. Arch.: Messrs. Tanguay & Lebon, Quebec City. Roofer: Eug. Falardeau, Quebec City.*

The Barrett Company
LIMITED

MONTREAL TORONTO WINNIPEG VANCOUVER
ST. JOHN, N. B. HALIFAX, N. S. SYDNEY, N. S.

*Below: The Technical School Building, Quebec City. Arch.: Tanguay & Lebon, Quebec City. Gen. Contr.: Jinchereau & Lamonde, Quebec City. Roofer: Eug. Falardeau, Quebec City*

*Laval Hospital, Quebec City. Arch.: Messrs. Tanguay & Lebon, Quebec City. Gen. Contr.: Jos Gosselin, Quebec City. Roofer: Eug. Falardeau, Quebec City.*

# New Standards of Economy Set by Goodyear Industrial Hose

The outside covering on Water Hose, unless tough and sturdy, quickly disintegrates under the constant dragging over sharp objects, particularly in outside construction work. The hose blisters and bursts.

Goodyear has overcome this with a rubber cover of exceptional toughness and strength, a cover which gives longer life—at a correspondingly low cost. The good inner tube and strong fabric are in keeping with this superior cover.

For every industrial use—Water, Air Drill, Pneumatic Tool, Steam, Fire Hose—Goodyear has designed a *special* type of hose, built only after an exhaustive study of modern conditions in industrial work. Goodyear has broken new trails.

If your business is hampered by the excessive cost and unreliability of old-fashioned hose, get the Goodyear data and the Goodyear hose plan. Let a trained Goodyear man advise with you. No obligation on your part. Phone, wire, or write the nearest branch or Goodyear Mechanical Goods Service Station.

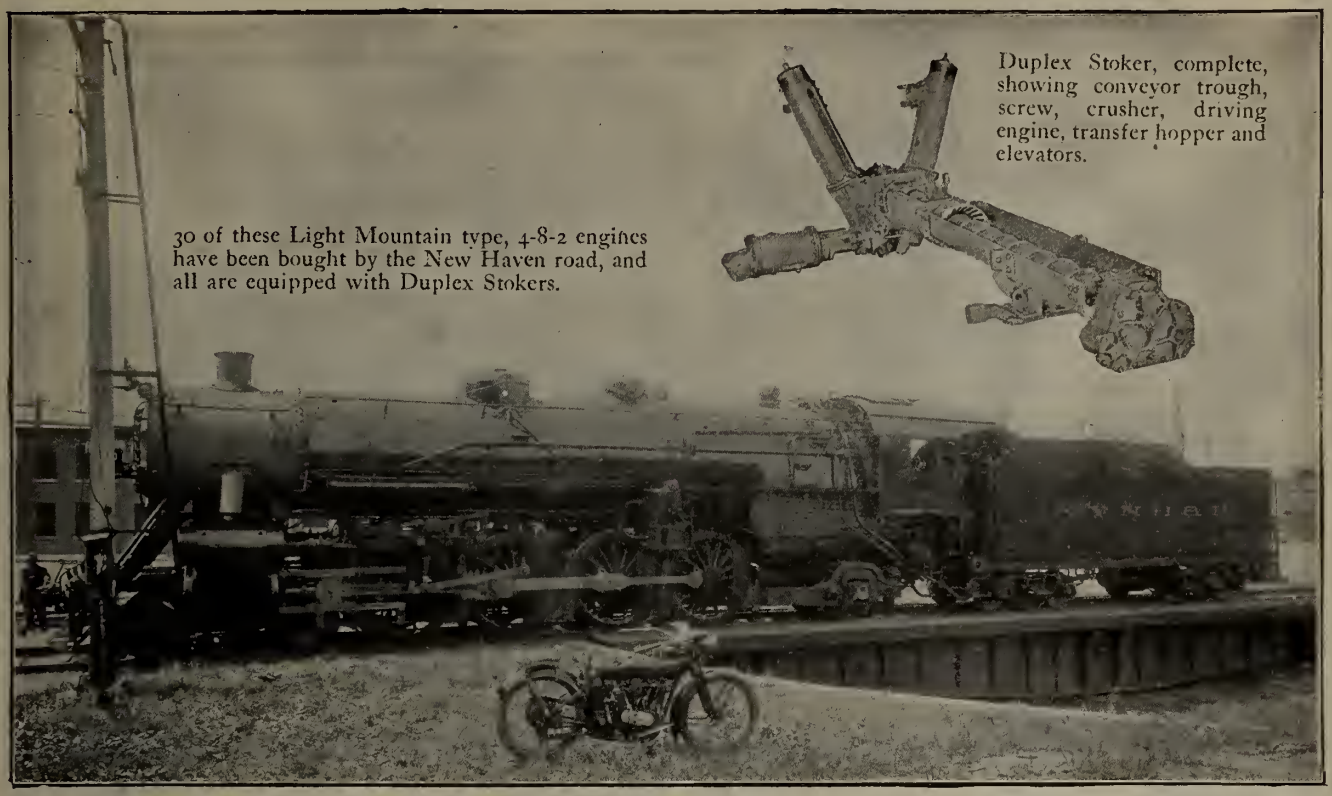
**The Goodyear Tire & Rubber Co.**
**of Canada, Limited**

*Branches—Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver.*

**GOODYEAR**

**MADE IN CANADA**

**INDUSTRIAL HOSE**


30 of these Light Mountain type, 4-8-2 engines have been bought by the New Haven road, and all are equipped with Duplex Stokers.
Duplex Stoker, complete, showing conveyor trough, screw, crusher, driving engine, transfer hopper and elevators.

# *Duplex Stoker an Integral part of the Modern Locomotive*

Thirty of the above type of engine, all Stoker-fired, are pulling Quick Dispatch freight between Boston and New Haven, performing eminently satisfactory service.

So general has been the application of the Duplex Stoker to modern locomotives, and so satisfactory has been their performance in all classes of service, that they have established themselves as a standard and integral part of the modern locomotive.

Good steamers, quicker over the road, more tonnage hauled per train, and less time on the fire-cleaning pits are reasons why there now are—

***Over 4500 of our Stokers in Service and on Order***

# Locomotive Stoker Company

***Main Office and Works:***

**Pittsburgh, Pa.**

MUNSEY BLDG.,
WASHINGTON, D.C.

50 CHURCH ST.
NEW YORK

RAILWAY EXCHANGE
CHICAGO, ILL.

Notice the hook down feature and the caged roller bearings.

## Simplified Maintenance Puts Years of Service in

# O-B TROLLEY BASE

Proper care is so easy that the O-B Trolley Base gets what attention it needs.

Lubrication, for instance, is a simple matter. Hook down the fork, back off a machine screw, pull out a retaining clip and one man lifts the base off its stem without removing the pole, even in car barn where headroom is minus.

The whole works is open for inspection and lubrication. The roller bearings are caged so they stand where they belong. And caged rollers never jam in service.

Renewable steel bushings absorb most of the wear. It takes only a few minutes to make the O-B Base like new.

Easy maintenance plus rugged construction puts years of life in O-B Base.

*Try one on your own cars at our expense*

**The Ohio Brass Company**
**Mansfield, Ohio**

Dark parts are renewable bushings.

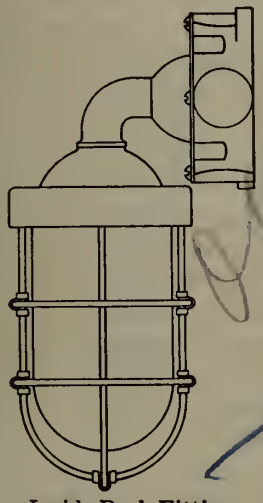
O-B Base—Form 1—Patented.

# "CANADIAN SETTLER"

5,100 Tons D.W.

Built for the Department of Marine by
TIDEWATER SHIPBUILDERS, LIMITED
Three Rivers, Que.

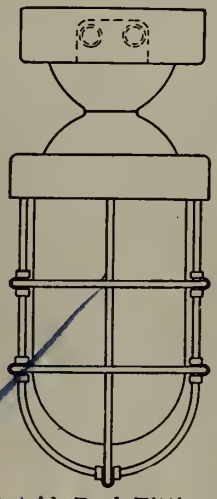
Two Conductor Wire Braided Lead Covered Marine Cable



Inside Deck Fitting

## A Steel Cargo Vessel

Above is one of the larger type of steel cargo vessels built for the Canadian Government. She is wired throughout with steel wire braided and lead covered cables, approved by Department of Marine and manufactured by



Outside Deck Fitting

Three Conductor Wire Braided Lead Covered Marine Cable

## Northern Electric Company LIMITED

MONTREAL
HALIFAX
QUEBEC
HAMILTON
OTTAWA
TORONTO
LONDON
WINDSOR
WINNIPEG
REGINA
CALGARY
EDMONTON
VANCOUVER

Single Conductor Wire Braided Lead Covered Marine Cable

# PRICES—

*Prices are receding in many lines—*
*The demand for goods is returning to normal—*
*Goods must be SOLD, not allotted to hungry buyers—*
*The seller's market has become a BUYER'S market.*

There is no cause for alarm, it is a healthy situation without a shadow of harm for the business or advertising man alert to its significance.

Owing to the insistent demand for lower prices, even a slight price advantage will count heavily in making sales. Lower prices mean lower production or selling costs. Proportionately too much attention has been given to production costs. Selling costs figure just as materially in the final cost to the buyer.

Selling effort must be speeded up — made to produce more per dollar of expense. Salesmen who have grown stale and flabby through too much easy business, need stimulus and support.

Shrewd sellers are using Business Paper advertising under these conditions, both for direct effect and to intensify all other forms of sales effort.

This kind of advertising is comparable to the labor saving machine in the factory. It lowers sales cost just as the machine lowers production cost. Like the machine, it is a paying investment and not an expense.

Furthermore, it is WASTELESS, for the advertising is focused and concentrated on your market only in media of maximum influence in that market. You cannot afford, in the present situation, to load your costs with waste advertising of any kind, and this but emphasizes the need for efficient Business Paper advertising as never before.

New advertisers or old, are invited to make use of our Advisory Service Department, without charge or obligation, for information and counsel on their advertising problems. We do not sell space and have no interest in space sold by others. Our position is entirely disinterested.

*All Business Papers are good, but some are better than others. The phrase, "Member of the Associated Papers, Inc.," means proven circulation PLUS the highest standards in all other departments.*

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NEBRASKA
KANSAS
OKLAHOMA
MINNESOTA
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MICHIGAN
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TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
S.CAROLINA
N.CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
DOMINION OF CANADA
NOVA SCOTIA
49
The map above shows the location of the 49 Foundries in the United States and Canada represented by the Association of Manufacturers of Chilled Car Wheels.
Chicago 3
St. Louis 2
Buffalo 4
Pittsburg 2
Cleveland 2
Amherst N.S.
Montreal
Mich. City Ind.
Louisville.
Mt. Vernon Ill.
Ft Wayne. Ind.
Birmingham
Atlanta.
Savannah
Boston
Detroit
St. Paul.
Kansas City Kan
Denver
Tacoma
Los Angeles
Rochester N.Y.
Sayre. Pa.
Lime Rock. Conn.
Albany.
Toronto.
New Glasgow N.S.
Madison. Ill
Berwick Pa
Huntington. W. Va.
Wilmington. Del.
Houston Tex
Hannibal Mo
Reading Pa
Baltimore
Richmond Va.
Ft William. Ont.
St. Thomas "
Hamilton "
Ramapo. N.Y.
Marshall. Tex
Capacity
20,000
CHILLED
IRON WHEELS
Per Day
25 Million in Service
Association of Manufacturers
of Chilled Car Wheels
1847 McCormick Bldg. Chicago.

# CANADIAN VICKERS LIMITED

## Shipbuilders, Engineers, Boilermakers and Repairers

## MONTREAL, CANADA

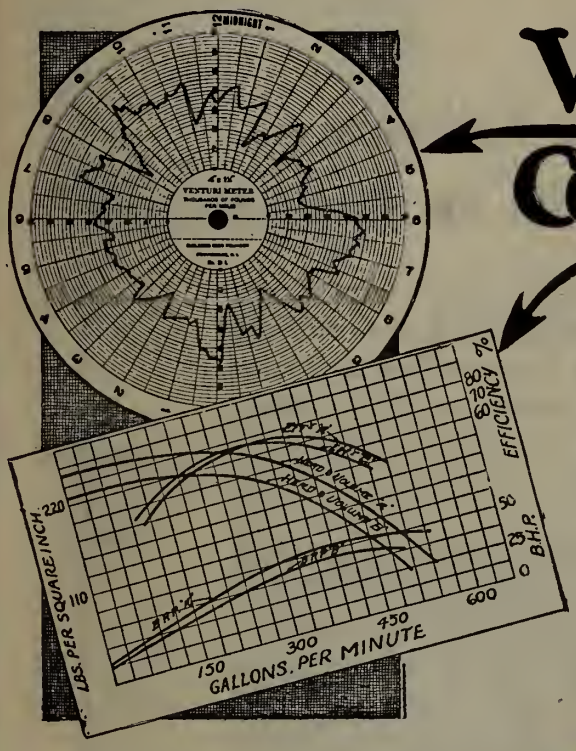
25,000-TON FLOATING DOCK, 600 FEET LONG
Operated in One or Two Sections.

S.S. "ALSACE"
Built for Cie Francaise d'Armement et d'Importation
de Nitrate de Soude, Paris, France

Makers Under License Best British Designs:—
WINCHES, WINDLASSES, ASH HOISTS,
STEERING GEARS, TELEMOTORS

*Immediate Deliveries from Stock*

*Cables:*
VICKERS, MONTREAL




# Variable Volume Constant Efficiency

## THE REES RoTURBo

### A Centrifugal Pump for Any Service

IN the "Rees-RoTURBo" we have the very latest development in centrifugal pump design. The disadvantages of the ordinary pump have been entirely overcome and it meets perfectly the conditions of to-day for high efficiency.

The fluid velocities are low, reducing friction losses to a minimum, and there is no wear even from gritty water, and high permanent efficiency is maintained. This means that the "Rees-RoTURBo" is ideal for multi-stage operation and may be said to be a pump for any service.

*Should there be any point on which you would like to be enlightened, our engineering department is always at your service and without any obligation on your part we heartily invite enquiries.*

## THE GOLDIE & McCULLOCH CO., LIMITED

**Head Office and Factory: GALT, ONT., CANADA**

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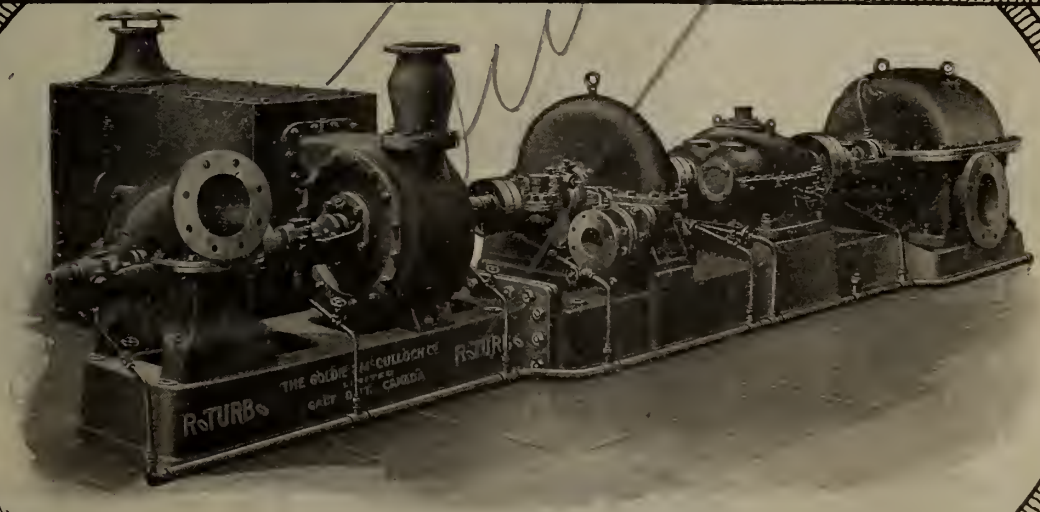
Western Branch: 248 McDermott Ave. Winnipeg, Man.

British Columbia Agents: Robt. Hamilton & Co. Vancouver., B.C.

DEPENDABLE POWER EQUIPMENT



# Dearborn Service to Railroads
## A Service That Goes With the Product

It is a matter of record on several large trunk lines operating through bad water districts, that the mileage obtained from boiler flues has been increased by judicious treatment of the water supply as much as FOUR AND FIVE HUNDRED PER CENT.

Reliable and authoritative data accumulated through fifteen years of scientific research by the DEARBORN ORGANIZATION OF PRACTICAL TESTING ENGINEERS prove conclusively that in most sections of the country

**WATER TREATMENT IS NECESSARY TO THE ECONOMICAL AND EFFICIENT OPERATION OF LOCOMOTIVES**

The Dearborn organization stands ready at all times to co-operate in the improving of water conditions—analyzing the waters over the entire division if need be—and systematizing simple methods of application of Dearborn Treatment, without additional expense to railroads.

## Dearborn Chemical Company
### of Canada, Limited

General Offices and Factory, TORONTO

Branch Offices:

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The **Strength** and **Toughness** of

# "DOMINION" WIRE ROPE

Make it DURABLE,
SAFE and ECONOMICAL

**THE DOMINION WIRE ROPE CO., LIMITED**

Head Office: MONTREAL Branches: TORONTO, WINNIPEG

# The Best Ballast Car Ever Built

**Canadian National Railways Standard Ballast Car**

**For Ballasting Center Dump**

**For Ballasting Side Dump**

**For Coal or General Service**

**Built of Materials Obtained in Canada**

**Built to any size or Capacity**

*Write for Booklet No. 19 for further information.*

—DESIGNED, PATENTED AND BUILT IN CANADA—

# The HART-OTIS CAR CO., Limited, MONTREAL

We carry only goods of the Highest grade, quote Lowest prices, and GIVE BEST OF SERVICE

# "MARION" Steam Shovels

DITCHERS—UNLOADERS

# "Industrial Works" Pile Drivers and Cranes

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# F·H·Hopkins & Co. Limited

**Head Office:**
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PAGE-HERSEY TUBES, LIMITED

MADE IN CANADA.

P⌀H

# Tubular Poles

NEAT, UNIFORM AND ORNAMENTAL
in appearance, combined with
GREAT DURABILITY, STIFFNESS AND STRENGTH
make them ideal for
ELECTRIC LIGHT AND POWER
TELEPHONE, TELEGRAPH
AND STREET RAILWAY
LINES
and also for
FLAG POLES,
all sizes and weights.

ILLUSTRATION SHOWS A LINE OF P⌀H WROUGHT TUBULAR STEEL POLES ON THE BLOOR STREET VIADUCT—TORONTO, CAN.

HEAD OFFICE:
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# THE REILLY MULTI-SCREEN FEED-WATER FILTER

The hot distilled water secured from marine power plants, operating condensing, is ideal for boiler feed after the oil which it contains has been removed.

The Reilly Multiscreen Feed Water Filter and Grease Extractor efficiently removes this oil from the water. It is also suitable for the removal of mud or sand from lake or river water when used for boiler feed.

The area of the filtering surface is 500 times the area of the water inlet passage, far exceeding that of any other filter regularly manufactured, thus insuring a slow and efficient rate of filtration through the filtering cloths.

By-pass valves, allowing the uninterrupted flow of water to the boiler, and a standard manhole in the top of each filter for the removal of the cartridges, make cleaning a very easy operation.

MADE IN CANADA BY

## THE MASON REGULATOR & ENGINEERING COY., LIMITED

MONTREAL TORONTO

# FARLOW

**The Perfect Harness**

## DRAFT ATTACHMENT

Furnishes the strongest connection between the draft gear and car underframe.

Service buffing and pulling shocks are transmitted to the car frame at a number of points, preventing distortion of sills, breakage of friction barrels or springs, and consequent necessity for repairs.

## The T. H. Symington Company

**New York** **Works at Rochester** **Chicago**

**Where do you buy your *Coils?***

MADE IN CANADA

**Why not try Canadian *Coils?***

We are manufacturing Armature Coils for Railway Motors, Industrial, Direct Current and Alternating Current Motors.

Satisfaction guaranteed.

Send us a sample of Coil you require.

## Railway & Power Engineering Corp., Limited

**133 Eastern Ave.** **Toronto, Ontario**

# The Star Brass Works

*Largest Exclusive Trolley Wheel Makers in the World.*

**Kalamazoo** **Michigan**

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# The Collingwood Shipbuilding Co.

**Limited**

COLLINGWOOD—ONTARIO and KINGSTON—ONTARIO—CANADA

**Steel Ships, Engines, Boilers, Castings, and Forgings**

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK

S.S. CANADIAN WARRIOR

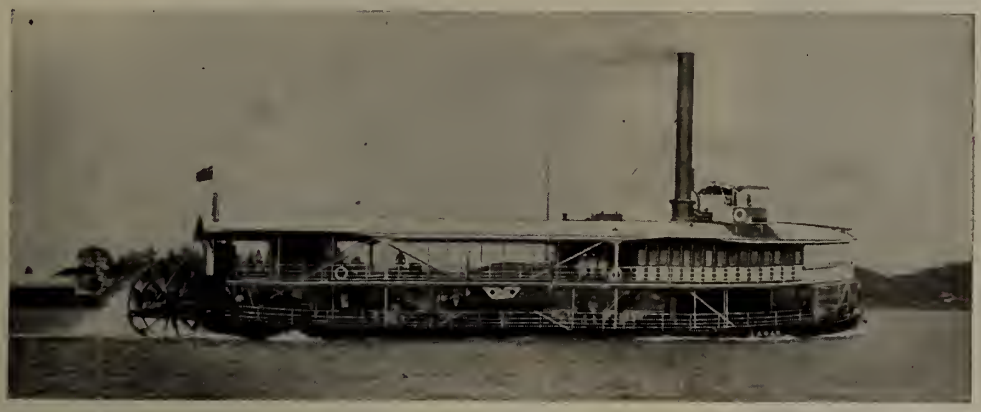
Two Dry Docks
and
Shops
EQUIPPED TO
OPERATE
Day or Night
on
Repairs

# YARROWS LTD.

## VICTORIA, B.C., CANADA

Associated with YARROW & CO. LTD., Glasgow

SHIPBUILDERS SHIP REPAIRERS ENGINEERS



Builders of fast shallow draft vessels propelled by sternwheel or Yarrow Patent system of propellers working in tunnels. Vessels shipped in packing cases ready for re-erection.

ADDRESS FOR LETTERS
P.O. BOX, No. 1595,

| Marine Railway, 315 ft. long, 3000 tons D.W. Capacity. | Esquimalt Dry Dock, 480 ft. x 65 ft. |
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TELEGRAMS AND CABLES
"YARROWS, VICTORIA"

*Made in Canada*

Locomotive Booster, with Cover Removed, as Applied to Trailer Truck Axle.

# THE LOCOMOTIVE BOOSTER

Uses the adhesive weight on the trailer wheels to provide 25 to 40% increased tractive effort.

Gives quicker, smoother starting of passenger trains.

Provides quicker acceleration of freight trains and a higher stalling point.

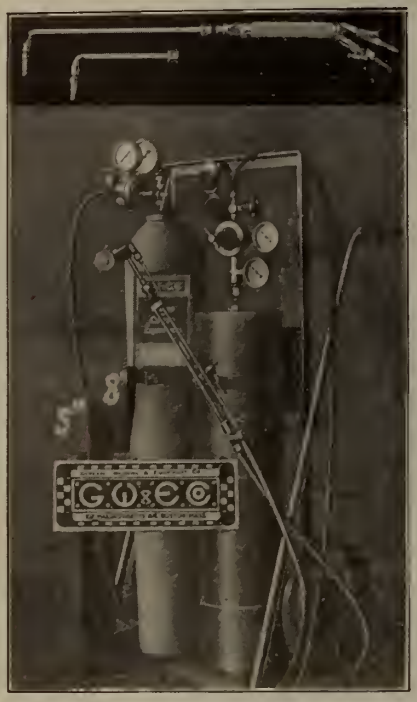
Uses to the limit the weight of present locomotives.

Capitalizes idle weight and spare steam.

**Franklin Railway Supply Co. of Canada, Limited**

**Transportation Bldg., Montreal**

# Standard Oxy-Acetylene Welding and Cutting Equipment



The Oxy-Acetylene process, for the welding and cutting of metals, has become standard practice, and used in almost every industry. The demand for our standard equipment increased accordingly, due to the simplicity and safety features of our torches, and regulators, particularly the regulators, which, due to their scientific and sturdy construction, are conceded to be the best on the market.

We have very interesting booklets, describing our equipment, together with some pointers on welding and cutting, which we will be very pleased to furnish on request.

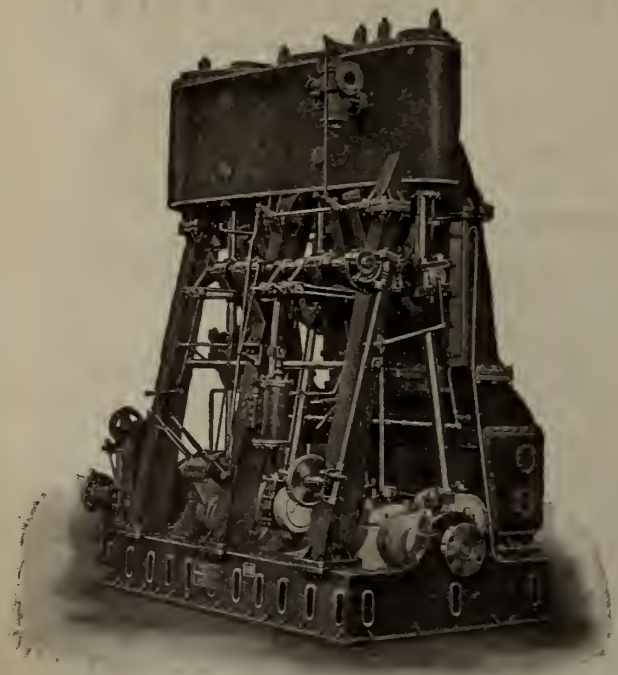
**Sole Agents for Canada.**

## THE HOLDEN CO., Limited

**356 St. James Street, Montreal.**

Branch Offices—Toronto, Winnipeg, Vancouver.

# Robb Engineering Works, Limited



**40" Stroke Engine Built for Imperial Munitions Board.**

BUILDERS OF

Marine Engines
Scotch Boilers
Water Tube Boilers
Lighting Sets

**Works - Amherst, N. S.**

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**MINER**
**FRICTION DRAFT GEAR**

**CLASS A-18-S**

**THE PERFECT DRAFT GEAR**

**MINER**
**BALANCED SIDE BEARING**

**SAVES RAILS WHEELS AND COAL**

# CANUCK SUPPLY CO., LTD.
**MONTREAL**

**W. H. MINER**
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# Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

*For prices and particulars write to*

**Head Office - - New Glasgow, Nova Scotia**

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PARTIAL LIST OF EQUIPMENT WE SELL

Ash handling machines
Bridges, coal and ore
Buckets, grab
Bunkering equipment
Cable railway systems
Cars, automatic cable and electric
Car dumpers
Car pullers
Coal crushers
Coal handling machinery
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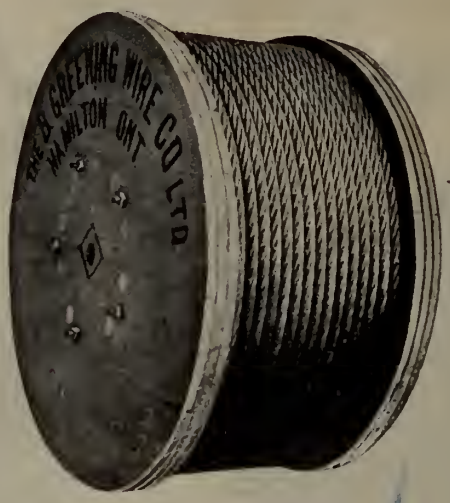
Concrete mixers
Conveyors
Dredges
Derricks
Drift spikes
Gasolene engines
Hoists, cargo
Hoists, steam and electric
Pressed washers
Pumps
Smoke box netting
Springs, locomotive, car
Steel and iron bars
Switch ropes
Track spikes
Track tools
Wheelbarrows
Winches, ship
Wire cloth
Wire nails
Wire rope and blocks
Wire screens




# WIRE ROPE

Manufactured by the pioneer rope makers of Canada—

THE B. GREENING WIRE CO.

Quality is the first consideration in its manufacture.

*Information or prices gladly furnished on request.*

## HARVARD TURNBULL & Co.

RAILWAY, MARINE AND CONTRACTORS SUPPLIES
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TORONTO

Agents for { Canadian Mead Morrison Co. / B. J. Coghlin Co. / B. Greening Wire Co. / London Concrete Machinery Co. / Peck Rolling Mills

A Great Many Large Plants Are Using

# COMMERCIAL ACETYLENE

On Small Work

Repairing a small cast iron bracket at a large shipbuilding plant. Our tanks are convenient, safe and guaranteed to hold quantity and quality gas.

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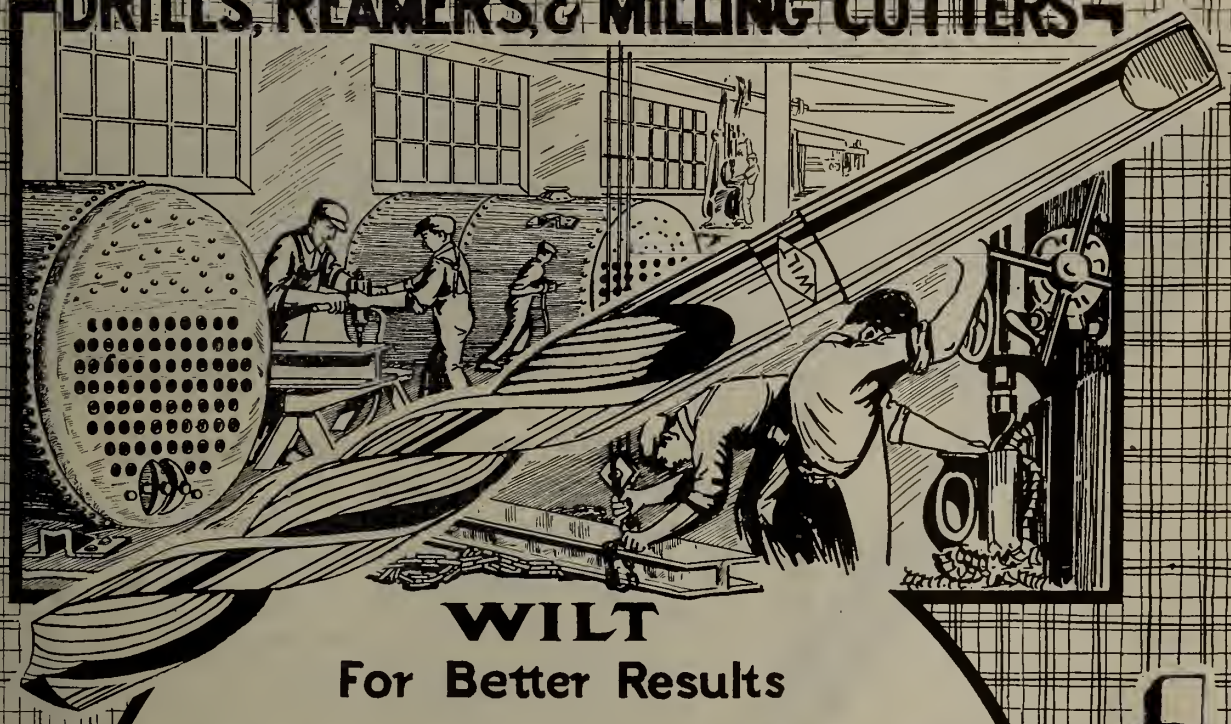
W. BERKELEY, CALIF.

## Commercial Acetylene Supply Company, Inc.

18 TORONTO STREET TORONTO

# WILT

## HIGH SPEED & CARBON TWIST
## DRILLS, REAMERS, & MILLING CUTTERS



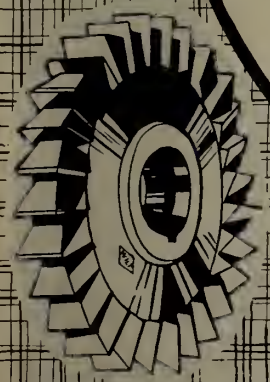
**WILT**
**For Better Results**

Made in Canada.

Manufacturers who have switched from the use of ordinary tools to WILT TOOLS realize the benefit of the change. They are getting better results from their operations.

Wilt High Speed and Carbon Twist Drills, Reamers and Milling Cutters give longer service, do more work without regrinding and cost no more than ordinary tools.

For a steady volume of work that is satisfactory from the standpoint of both **quantity** and **quality** there are no better tools than the WILT line.



**WILT TWIST DRILL COMPANY**
**OF CANADA LIMITED.**
WALKERVILLE . . ONTARIO.

TRADE WILT MARK

"Where there's a WILT — There's the Way"

# STAYBOLT TAPS

## The Better the Man, the More He Appreciates Them—

Not only good when new, but heat treated and seasoned to maintain this goodness. Can be ground on face of cutting edge without affecting their size. That's why you'll find Pratt and Whitney Stay Bolt Taps on the job long after cheaper, "just as good" tools are buried in the scrap pile.

Threads accurately and cleanly cut, with the least expenditure of time and effort, are other reasons why these better Taps are favorites in the shop.

If you've used them before, you know just how good they are. If you haven't, send us your first order—we know you'll be back for more. They're carried in stock in our sales rooms in all large cities.

**PRATT & WHITNEY CO.**
**OF CANADA, LIMITED**
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WINDSOR
Davis Building
HALIFAX
Roy Building
VANCOUVER
B.C. Equipment Co.

PRATT AND WHITNEY

# Canadian Railway and Marine World

December, 1920

## How to Heat Railway Buildings Economically.

By R. H. Black, Engineer, Power Plant Construction, Grand Trunk Railway, Montreal.

Heating systems in railway buildings often compare unfavorably with those used in buildings owned by private industrial concerns, the reason being that railways usually make their own installations, and the men employed are not always heating tradesmen, but are picked up from other departments and are not primarily interested in heating work. What they know has been learned from actual contact with other railway heating plants so that obsolete practice has a strong tendency to be perpetuated. What is mostly needed is a campaign of education, and any railway contemplating extensive improvement in its heating systems would be well advised to study this problem from the start.

It is sometimes claimed that the use of steam traps and other devices is impracticable, as they need too much care and attention. It will always be found, however, where such has been the case, that the trouble lies in the want of care in choosing the right article or in properly protecting it from dirt and scale, or, more often still, in neglecting to give the very small amount of attention which is needed periodically by all mechanism, no matter how simple. When it is realized that the modern air brake is far more complicated than the most elaborate heating system, it will be conceded that there is no valid reason why the latter should give any trouble in the hands of the mechanics who are available at shops, and locomotive houses, provided they are given the necessary instructions. It is the intention of this paper to recommend a standard practice in designing new heating plants, and in remodelling those that are inefficient or out of date. In so doing it is not sufficient to decide on a system that will be efficient if correctly operated, but to consider what chance it has of being correctly operated, or if it would not be better to make some sacrifices in certain directions rather than take a chance on personal equations that are beyond control. For instance, it is needless to state that it is quite impossible to depend on anyone turning radiators on or off, with a view to economy, unless he is paying for the coal. It simply is not done, and no number of circular letters or printed instructions will ever make any difference. It therefore remains to control the heat at its source, to make one man responsible, to make the system as automatic as may be, or to so arrange it that it is to somebody's personal advantage or comfort that economy be observed. Also to pay the greatest attention to details, particularly in regard to protection from dirt, and external injury, and from being tampered with by unauthorized persons, and to arrange that waste becomes visible. It is with the above ideas in mind that the following recommendations and suggestions are made, being followed out from the beginning and incorporated in the design.

The Choice of a New System.—A heating system in its simplest form consists of a series of stoves placed in different rooms, and these are fairly economical, the possibilities of waste lying in the overheating of the premises (usually only occasional) and the throwing out of unburnt fuel with the ashes. This latter may be serious, but can only be due to carelessness on the paart of the attendant and the remedy is obvious. Almost as simple is the Baker heater, which is often available when released from old cars, and works very well in a small building, where not more than one heater is required. These two methods of heating are, everything considered, most economical for the smallest of passenger stations and small buildings, or sheds at a considerable distance from other buildings, and where they can be attended by baggage men, or other employes, in the course of their ordinary duties.

For stations of from 1,500 to 7,500 sq. ft. total floor area, which embrace the majority of ordinary stations, a hot water heating system should be used, with cast iron radiators, and sectional cast iron boiler, burning hard coal and placed perferably in a basement. In the smaller sizes, a hot water heating system is better than a steam system, in many ways, although its first cost is about 35% more. The large volume of water in circulation acts as an ideal heat storage, giving up heat when fire is low and storing heat when the fire is bright, thus preventing to a large extent the losses due to overheating of the rooms, and calling for less aattention to the furnace. Any man with a furnace in his home will know how to run such a system economically and will usually do so, if for no other reason than to save himself trouble.

When we come to a larger station, such as is found at a division point, which is usually of two stories, with offices above, and sometimes a number of buildings arranged in a row, the hot water system may offer increased cost, and construction difficulties which make it advisable to use a steam heating system. In most respects the one pipe gravity steam system with boiler in basement using hard coal or other suitable fuel is the most economical steam heating system that can be adopted, and it is certainly the simplest. There is no possibility of waste of either hot water or steam when the proper air valves are used. Not only the radiators, but the boiler and piping themselves supply heat to the building, and need only be covered when they are likely to give out more heat than is required in the immediate vicinity. Long horizontal mains also need covering to avoid excessive condensation.

The system has the inherent disadvantage that the radiators must be either on or off. However, with the boiler on the premises, and the attendant firing it to suit fluctuating weather conditions, what actually happens is that the radiators are alternately heating and cooling, as not sufficient steam is made to heat them all the time, and this prevents overheating the rooms. To take advantage of this feature it is most important to so arrange the piping that the colder rooms and more exposed portions of the building are given the preference by receiving their steam first. Otherwise, it will be found necessary to overheat one portion of the building in order to adequately heat another. With this attended to, it will be found that the system will work well for two or three buildings which are not more than 100 ft. apart and which have good basements, but under certain circumstances, where there is a great difference in exposure, or in distance from boiler to radiators, it will be necessary to use special air valves on each radiator and connect them all to a small air pump, or ejector through a system of piping, which, however, need only be very small. This is known as the air line system and has many recommendations, but is usually an unnecessary refinement for railway buildings. In designing a one pipe heating system, proper size of piping, proper grading, and provision for expansion, and care in placing the radiators, are the points on which the success of the installation depends.

We now come to the first condition in which there is a really serious opportunity for waste. A station, office, or small shop has to be heated, and as a supply of high pressure steam is available a short distance away at, say, the locomotive house, it is proposed to use this. Now it is usually not economical to do so. To begin with, there is the loss of heat in the underground pipe supplying the building. With the very best construction this will be about 1% per 100 ft., but if the pipe is merely buried in sand, or set in a wooden boxing, the loss may be as much as 10% or more. The condensed steam, instead of draining back to the boiler direct, must be separated by means of a steam trap. Certain of these steam traps will then return the condensation direct to the high pressure boiler with very little loss, but these traps need careful attention, as with a none pipe system, should the trap stop working, the system will rapidly fill with water, and it will take some time to get it working again.

The greatest loss, however, is due to the imperfections of human nature. With an unlimited supply of steam from a distant point it will always be found that the building is overheated, and doors and windows left open, even in very cold weather. In fact, radiators are rarely, and in some cases never, shut off. One has only to imagine what his coal bill would be if he were to keep his furnace at home going full blast, from October to May, to realize what this means. It may be argued that the agent or officer in charge should not permit this condition, but a second thought will show that this is one of all duties that can and will be neglected. The only practical way to control the heating of buildings is at the source of heat, and if the baggage man or other employe has to at-

tend the furnace, in addition to his other duties, he will bank the fire to make it last, and this is economy, which will far outweigh the difference in cost of hard and soft coal. It is more than likely that the cost of the underground piping and steam traps will equal or exceed the cost of a sectional cast iron boiler, and at even fairly large stations it will often be found possible to have a certain employe attend the furnace, in fact, where there are offices, a janitor is usually employed in any case.

The conditions that make it advisable to heat a building from an external source of steam are as follows:—(1) When the building is very small, requiring only one or two coils or radiators, and is used by a number of men continually coming in and out. A switch shanty is a good example. There is no one to attend to a stove and the steam will not amount to much. In this case pipe coils may be used, with a small steam trap on each coil, properly protected from sediment by a dirt trap or dirt pocket (a separator off a freight car is a good thing to use, and can often by obtained from stores.) The trap should have no by-pass and should be non-adjustable, except by taking it apart. Run condensation back to the boiler room, if not more than 200 ft. away, otherwise let it drip outside, where it can be seen. A reducing valve is not necessary, no great care need be taken in grading pipes, and as the steam is at high temperature only a small coil is required. (2) When it is intended to heat an existing building, and there is no basement, or convenient place for a boiler, or when the building is quite large, over 15,000 sq. ft. floor area, and two or more stories, such as large stations or freight sheds, or two or more buildings some distance apart. In this case the one piping gravity system is no longer the best to employ.

We come now to the two pipe vacuum system. On the return end of every radiator is placed a small steam trap, the discharge of which is led back through a separate arrangement of piping to a vacuum pump, which maintains a vacuum up to the outlet from every radiator. This means that all condensation is positively removed, and should the steam pressure at a remote part of the system be so low that the steam cannot flow into the radiator by itself, the trap, being cold, will remain open until the vacuum has drawn the steam in. Radiator traps should be thermostatic in principle and absolutely non-adjustable. Such a system is operated on a very low pressure, 1 to 4 lb. being sufficient in any well designed plant. Its advantages are many, for besides the positive circulation, which overcomes all troubles due to long distance and low pressure, it gives a low temperature radiator (an important point in economy, as it will not readily cause overheating), and also by using special inlet valves, with graduated opening, the so-called modulating system is obtained, which allows the heat in individual radiators to be controlled. This is a convenience, but, as pointed out before, little economy can be expected therefrom, and modulating valves are only justified in the better grade of office. The use of traps on every radiator safeguards the system from serious interruption, as the failure of a single trap only affects its own radiator, or at most those nearby, whereas the failure of a trap controlling the whole system may result in waterlogging the system for hours. The vacuum system is not quite perfect, as it cannot be controlled from a central point. It can be made automatic to operate with thermostats, but these are very expensive ($50 a radiator), and need constant attention, so that its greatest claims to economy are its low temperature and absence of leakage.

It is very necessary in designing the building to make provision for easy access to the heating pipes. If a proper basement is not provided, there should be at least 4 ft. of open space between the floor joists and the ground, or, where mastic or tile flooring is used, ample pipe trenches should be provided, which can be reached without destroying the floor. The writer knows of a new station that has all the steam heating pipes buried in the sand beneath a terazzo floor. The piping will last for many years, but some of it will have to be renewed sooner or later, and at any time a leak may develop, which will necessitate the destruction of a large part of the flooring.

In providing water for wash basins a separate jacket heater, or small boiler, using hard coal, is much to be preferred to a heating coil in the main boiler, and owing to the fact that hot water constantly renewed is extremely corrosive it is desirable to use brass pipe and fittings. Because of the expense, extra heavy galvanized iron pipe is sometimes substituted, but even this will give trouble in time.

Locomotive house heating is a problem in itself and a very difficult one in this climate. It is well recognized that the hot blast system, in which a fan, driven by mechanical power, draws air through a nest of steam pipes, or cast iron sections, and discharges it through ducts to different points, usually the locomotive pits, is the most satisfactory system that can be used. It is not always recognized, however, what an enormous amount of steam is required to run these plants, and they are therefore often made much too large for the boiler capacity provided. Incorporated with a vacuum system to heat the offices, the best way to remove the condensation from the blast coils is by connecting it to the same system, using a large size thermostatic trap on every coil. The fan should be engine driven, as this permits the widest variation in speed, the exhaust steam being used in the coils.

Handling locomotives in winter is such a difficult matter that the most enthusiastic economist cannot justify fuel saving at the expense of cutting down the heat or reducing the ventilation in the locomotive house. The only justifiable saving is that which prevents waste of condensation or steam. In designing the air ducts it should be borne in mind that the speed of the air can be much increased over standard practice and therefore the ducts may be made smaller. As these are usually most unwieldy, at the large end, whether placed overhead or underground, this is a point worth remembering.

Heating Shops.—It is scarcely within the scope of this paper to discuss the heating of very large shops. It may be stated, however, that the writer favors forced circulation hot water, in wall radiators combined in the larger buildings with the hot blast system of hot air heating using live steam in the heating elements. The generation of electricity by steam power and the use of the exhaust steam as a by-product in the heating system, is justified only when the alternative is the purchase of power from steam driven central stations, and is not justified where (as is usually the case in Canada) power can be obtained from hydro electric development.

The suggestion is made that compressed air should be produced by steam driven machines, the exhaust being used for heating in winter and for generating about 25% of the electric requirements in summer, by means of a mixed pressure turbine, the same turbine in winter using live steam, and exhausting into the heating system. Such an arrangement will require no increase in boiler capacity over heating requirements alone, would appear to offer a reasonable saving in power cost, and would provide a very valuable insurance against a complete shut down in the event of trouble with the external supply.

The provision of the correct amount of radiation or heat supply has an important bearing on economy. In this climate it is necessary to somewhat increase the usual allowance taken as correct for the Eastern States, viz., 70° room temperature, with an outside temperature of zero. For Eastern Canada 70°, at 5 below zero, is about right. This will give a temperature of about 60° at 20 below zero. The above is for offices. For stations and shops the following is recommended:

Station waiting rooms, 65° at zero; machine, and erecting shops, 60° at zero; forge and blacksmith shops, 50° at zero (when not working); paint and varnish shops, 65° at zero, with an additional section to maintain this temperature down to 20° below zero; locomotive house, 60° at zero, based on one air change per hour.

**Remodelling Existing Systems.** — We often find a boiler or boilers supplying steam to a system of pipe coils, the coils having valves at each end. The inlet valve is wide open, the discharge valve is supposed to be just cracked, discharging the condensation and also enough steam to make sure of it. The resulting steam and water are discharged into a so-called hot well, a wood or concrete tank placed underground, and the hot water is pumped back into the boilers. Not so uneconomical on the face of it, but let us see what is really happening. Some of the coils are discharging steam full bore, for someone feels cold and wants all the heat he can get. Cold water is entering the hot well, to make up the waste, and as the float valve is out of order (for who can get in and fix it?) it is overflowing to the sewer, after being heated to boiling point by the steam from the heating system. The feed water is hot, there is no steam to be seen anywhere and no evidence of waste, unless the singing of the steam through the coils means anything.

There are a great many such plants still in use. Now what is the remedy? To place a steam trap on the discharge to the hot well may answer, but usually does not. The pipes do not slope in the direction of flow, as they should, they sag and slope the wrong way, and although they worked when there was a current of steam blowing out the water all the time, they will fill with water, and stop the circulation if the pressure at the outlet is retained by means of a trap. Usually such a system can be made to work economically by putting a steam trap on each radiator. These may be thermostatic or float, but unlike vacuum traps, they will be required to withstand a pressure of as much as 25 lb. and must be chosen accordingly. A reducing valve on the steam line should limit the pressure to this, or less if possible, but it may be necessary to put in

extra radiators to make up for the reduced temperature due to the lower pressure. Unless the hot well is used as a storage for boiler washing, it should be discarded and an open type feed water heater used. The returns from the heating system should return into this and will then be pumped direct to the boilers without loss of heat. Steam traps which return the condensation direct to the boiler use much less steam than a pump, and should be used when all the steam from the boilers is used in the heating system, but where much cold water has to be used as feed, the pump exhaust can be used to heat it, and a pump is then as good as a trap and will usually be favored as being more easily understood. The overflow from the hot well, where such must be used, should run over a weir, where it can be seen and heard and a proper ball valve must regulate the supply of cold water, but should be placed in a little pit beside the hot well where it can be reached.

Another type of obsolete system is a two pipe vacuum system, using exhaust steam from engine or pumps, but with no traps on the radiators, and none of the refinements necessary to a good job. The back pressure on the engine is 10 or 12 lb., the pipes and coils are partly choked with oil from the exhaust steam, and as the steam is short circuiting through the nearer radiators, the more distant ones are difficult to heat.

The installation of radiator traps and some slight alteration to the piping will usually make quite a good vacuum system. The oil troubles can be prevented by means of an oil separator and the surplus steam relieved by a back pressure valve.

It is necessary to make special provision when using live steam that it shall not escape through the back pressure valve. A gate valve should be placed in the line, to isolate this valve and the feed water heater, when live steam is being used, a safety valve protecting the heating main from over pressure. This is a somewhat unusual arrangement, but is considered important.

The trouble with badly graded piping that cannot be readily changed may often be overcome by trapping it at the low points.

After an efficient vacuum system has been installed, there is a great temptation to turn the discharge from high pressure steam traps or even open drains from steam hammers into the vacuum line. This must on no account be done, as the temperature of the water leaving a high pressure line is around 100° hotter than the temperature of the vacuum line and enough water will flash into steam to kill the vacuum.

If it is necessary to install additional radiators and no vacuum traps are on hand, their returns should be kept open until such traps can be obtained.

If a remodelled system, using live steam at 25 lb. pressure exists at the far end of a low pressure vacuum system, which is often the case, and it is too costly to run a separate return back to the boiler, it may connect into the vacuum line, with a spray of cold water supplied by a ¼in. pipe to condense the steam.

One pipe heating system, supplied with steam from a distance, and discharging their returns to the sewer through a partly open valve are fairly common, and are rather difficult to handle. A continuous discharge trap of the float pattern, or better still, two connected in parallel, well protected by large sediment pockets, are the best that can be used for this service. If the system fails to heat properly with the traps in service, which is quite possible, the trouble must be looked for in badly graded piping or too small piping. This is particularly liable to happen where the risers drain back into the steam main instead of into a separate return.

The next system is one in which the exhaust steam and perhaps some live steam is discharged to the hot well, and steam driven pumps are used to circulate the hot water through pipe coils or radiators in the various buildings. A splendid system in principle, it has gained a very bad reputation through poor design and inattention to detail.

Badly proportioned piping causes short circuiting of the water and consequent unequal heating of the coils. Insufficient surface and low temperature gives inadequate heat supply.

Oil from the exhaust steam mixed with pipe scale chokes the piping badly, and corrosion, due to air liberated from a continual change of water, eats holes in the pipe in a few months.

Properly proportioned the heating is perfect. With centrifugal pumps forcing water through closed heaters, there is no trouble with oil, scale or corrosion. Piping is much smaller than with steam, the multiplicity of radiator traps is dispensed with, and all the advantages of thermal storage and control of heat at its source, as claimed for the gravity hot water system, are retained. The system is applicable to the most remote buildings, in fact it shows to greatest advantage thus and is particularly adapatable for exhaust steam. For large shops spread over considerable area, its first cost is slightly less than that of a vacuum system. In this system, as in every other, hot water supplied to wash basins and for other purposes (including boiler feeding) must be supplied by a separate system entirely.

Now let us take a typical case and see what can be saved by reconstruction along the above lines. A locomotive house of 30 stalls built many years ago, but in good condition and fairly modern as regards locomotive facilities, may nevertheless have any or all of the following defects with their corresponding preventable waste of fuel, the figures given being tons per year:—

| | |
|---|---|
| Due to bare blower line | 127 |
| Due to obsolete steam driven compressor | 163 |
| Due to leakage of steam and loss of condensation from heating system in offices and stores | 50 |
| Due to feed water taken from hot well at a temperature of 130°, instead of heated to 210° | 140 |
| Due to badly insulated underground piping | 25 |
| Due to excessive back pressure on exhaust steam mains owing to absence of traps on locomotive house heating system | 87 |
| | 592 |

When locomotive type boilers are used—

| | |
|---|---|
| Waste due to lower efficiency than return tubular boilers | 100 |
| Waste due to use of steam blowers for draft where same are used continually | 200 |
| | 300 |

Where other buildings are heated the following preventable losses occur:—

Due to loss of condensation, 25% above proper heating requirements, when boiler pressure is used, and 15% when boiler pressure is reduced to 10 lb.

Due to leakage, owing to absence of traps on radiators, 5 to 50% above proper heating requirements, probable average 10%.

The preventable loss from underground steam mains, at present buried in a wood box, without any drainings or insulation, amount to from 5 to 10 tons a year per 100 ft. of pipe.

### Proposed Devices for Improving Steam Economy at Locomotive House.

Open type feed water heater.—Heating boiler feed to 210° F.

Oil separator on exhaust main.—Keep heating system at full efficiency by preventing it choking with oil and scale.

Back pressure valve on exhaust main. Regulate back pressure to minimum necessary.

Vacuum traps on pipe coils or fan coils.—Ensure even heating, full value from exhaust steam and minimum back pressure.

Magnesia or sponge felt covering on high pressure steam pipes.—Reduce condensation to a minmum and provide a durable covering, reduce corrosion.

Asbestocel covering on low pressure and heating pipes.—Assist steam circulation in heating system and provide durable covering which will prevent corrosion.

Reducing valves (properly protected by dirt traps) on live steam heating system.—Provide maximum efficiency and reduce possible loss due to radiation and leakage.

Steam traps and return pipes on live steam heating system.—Prevent loss of steam and return condensation either direct to boiler or to feed water heater according to circumstances.

Float valves, readily accessible in hot wells, and visible hot well overflow.—Prevent great loss due to hot water passing from hot wells unnoticed.

Underground steam conduit properly drained.—Prevent loss of heat due to heating the ground and melting snow.

Replace shop engine with electric motor wherever possible.—Eliminate this wasteful use of steam.

Replace present obsolete compressor with new machine, either steam or electric driven.—Old single stage compressor is inefficient as a compressor and as steam engine. Can save half of fuel it requires.

The replacement of locomotive type boilers can scarcely be justified at some points. It is doubtful whether these boilers are particularly inefficient, when provided with good chimney draft and not forced above 70 boiler h.p., that is half the power of a standard return tube boiler. When provided with poor draft, and where forced by means of steam jets, they waste enormous quantities of fuel and should be replaced as soon as possible.

Underground piping may be protected in various ways, but any really good method is very expensive and needs the most careful workmanship and supervision while being installed. For long distances with steam pipes of from 2½ in. to 10 in. and return pipes half the size, the split tile steam conduit cannot be beaten, when proper attention is paid to grading and drainage. It cannot be used under tracks, unless protected by concrete walls or cast iron pipe. For distances of less than 200 ft. a concrete trench, with double board top screwed down to cleats set into the concrete, may be used to advantage. The pipe covering should be sponge felt, or diatomaceous material; magnesia is too fragile. For piping above 10 in. or where several pipes are to be run, a tunnel should be considered. For pipes smaller than 2½ in. and distances of not more than 300 ft., it is permissible to use a wooden boxing, if the ground is dry, as the loss in heat will cost less than the interest on the cost of the more expensive construction. If the ground is wet, the pipe had better be carried overhead, or, if this is impossible, it may be cased in an outer pipe which will just fit over the covering the outer pipe being well covered with a mixture of pitch and sand.

All underground piping should be full weight, with extra heavy couplings.

Choice of Material.—A few suggestions on the choice of apparatus have been added to this paper, together with sufficient data to give a rough idea of the capacity and size. Complete information can only be obtained from the manufacturers of individual articles. The recommendations cover type and not any special make. There are at least four different manufacturers of each type suggested.

1. Steam traps, stationary pattern. High pressure, draining steam piping and steam separators. Use open float, bucket type, with valve and seat renewable and accessible by removing a small cap.

For locomotive house blower lines place a ½ in. trap every 12 pits. For underground conduit use a ½ in. trap every 700 ft. Use a ¾ in. trap to drain main steam header, on a battery of two or three boilers of 150-200 h.p. each.

Low pressure, draining one pipe heating systems, or heating mains. Use continuous discharge float type, easy accessibility of interior and integral by-pass and sediment traps are an advantage. Specify size and working pressure. One ¾ in. trap will serve 800 sq. ft. of radiation; one 1 in. or two ¾ in. traps will serve 1,600 sq. ft. of radiation; one 1¼ in. or two 1 in. traps will serve 2,800 sq. ft. of radiation; one 1½ in. or two 1¼ in. traps will serve 5,500 sq. ft. of radiation.

2. Steam traps, tilting pattern. Direct return trap, placed on top of boiler and discharging into it directly.

Three valve lifting trap, raises low pressure condensate from heating system into direct return trap or storage tank.

Non-return trap may take the place of an ordinary trap when very large capacity is required.

These traps vary greatly in price, the cheaper patterns need greater attention, but may give good satisfaction. The sediment trap and necessary check valves are not included and must be ordered specially. Give size and working pressure and all possible information on proposed arrangement as manufacturers should guarantee the installation.

¾ in. trap will serve 4,000 sq. ft. of radiation.
1 in. trap will serve 7,000 sq. ft. of radiation.
1¼ in. trap will serve 12,000 sq. ft. of radiation.
1½ in. trap will serve 20,000 sq. ft. of radiation.

3. Radiator traps. Vacuum system. Use traps working on the thermostatic principle, which are non-adjustable. They should be guaranteed to operate under a maximum pressure of not less than 10 lb. and a higher pressure is often a great advantage.

Medium pressure. These should be similar to the foregoing, but guaranteed for a maximum working pressure of not less than 25 lb.

High pressure, should be as above, and guaranteed for a maximum pressure of 100 lb. A certain make of float trap, having a plain floating ball, may also be used to advantage in this and the foregoing type. As the smallest radiator traps are about 100 sq. ft. radiation capacity, it is rarely necessary to use any larger.

4. Vacuum pumps, if steam driven, should be fitted with a mechanical force fed lubricator. Very small hydrostatic lubricators are unsatisfactory. Vacuum pumps are often much too large, a 5 x 6 x 6 in. pump will care for 7,000 sq. ft. radiation, a 6 x 9 x 10 in. pump is sufficient for 25,000 sq. ft. of radiation.

5. Pressure gauges, to register pressures up to 5 lb., are often very inaccurate. For such low pressures a compound gauge reading from a perfect vacuum up to 15 lb. pressure should be used. Care must be taken to avoid water pockets in piping which may add hydrostatic pressure to the gauge.

6. Air vents, or air valves, for use on steam radiators, should work on the syphon principle having a floating member. Thermostatic valves are liable to cause flooding.

Trap capacities are given in terms of normal radiation, i.e., cast iron radiators with a room temperature of 70 deg.

### Recommended Practice for New Heating Plants.

Wayside station and small buildings: Stoves or Baker heaters.

Station 1,500 to 7,500 sq. ft. floor area: Gravity hot water heating system with cast iron boiler and hard coal.

Other buildings 7,500 to 13,000 sq. ft. floor area: 1 pipe gravity steam heating system with cast iron boiler burning hard coal.

Stations to where high pressure steam must be supplied for heating coaches: 1 pipe boiler return trap system, with boiler in basement or 2 pipe vacuum system with boiler at a distance.

Stations, hotels or large exposed buildings 11,000 to 15,000 sq. ft.: 1 pipe gravity steam system, with vacuum air line and down draft boiler using soft coal.

Stations, hotels or large exposed buildings 11,000 to 15,000, located near power plant: 2 pipe vacuum system, using steam from power plant.

Small and medium sized shops: 2 pipe vacuum system, or forced circulation hot water system, using wall radiators.

Large shops: Forced circulation hot water, and live steam fan coils.

Locomotive houses: Live or exhaust steam, or both, in fan coils and wall radiators, in machine shop and offices.

### Recommended Practice for Remodelling Heating Plants.

(1) High pressure two pipe system. Reduce pressure as low as possible, 15 to 25 lb., using a trap on each radiator. Return condensation direct to boiler by means of tilting traps, if steam is used only in heating system. If steam is used for other purposes, use open feed water heater and boiler feed pump.

(2) Two pipe vacuum system using exhaust steam. Use thermostatic trap and sediment pocket on each coil. Install oil separator, back pressure valve and reducing valve, so arranged that live steam through reducing valve does not reach feed water heater or back pressure valve. Place thermostatic traps on low points in heating main and cover heating mains if these are too small.

(3) One pipe heating system low pressure, supplied from a distance. Discharge condensation to return line, through two continuous discharge traps in parallel, well protected by sediment pockets, or use boiler return traps, if these can be arranged in boiler room.

(4) Forced circulation hot water system. Install closed water heaters and operate a "closed" system, using the same water in circulation indefinitely. Install separate system for wash basin and bath supply, using extra heavy galvanized pipe (brass pipe is used in hotels and offices) as a fresh supply of hot water is very corrosive.

The foregoing paper was read before the Canadian Railway Club recently.

## Lake Superior Corporation's Subsidiary Railways.

The Lake Superior Corporation's report, for the three months ended Sept. 30, has the following references to its two subsidiary railways:—

Algoma Central & Hudson Bay Ry.—The President of the railway company reports that the results for the first three months of the fiscal year show a gratifying improvement. The recent increase in freight rates granted by the Board of Railway Commissioners, although accompanied by a raise in wages, has improved the situation. It is expected that the earnings for the year will show a gratifying improvement.

Algoma Eastern Ry.—Operating results for the three months have been highly satisfactory. Traffic conditions are expected to continue favorable. The increased freight rates, effective Sept. 13, will increase operating revenue materially. The railway goes into the winter with track and equipment in good condition.

## The C.P.R. not to be Nationalized.

The Prime Minister, Right Hon. Arthur Meighen, in speaking at Calgary, Alta., Nov. 9, after referring to the nationalization of the Canadian Northern, Grand Trunk Pacific and Grand Trunk Railways, is reported to have said:—"We are asked as to the future. We are asked if we are to embark still further upon the sea of nationalization, whether, in short, it is our policy to bring all the railways of the country under public ownership and control. Let me say that such is not our intention. The C.P.R., an institution which does credit to this country, constitutes a great rival, a necessary rival, as well as a model upon which we can fashion the national lines. And until such time as the Canadian National Rys. can be brought to the splendid efficiency of the C.P.R. and for the present, because of circumstances over which we have no control, that is impossible, the Government has no intention of interfering with the C.P.R."

Sir Alexander Galt and Railways.—In the "Life and Times of Sir Alexander Tilloch Galt, sometime Dominion Finance Minister, by O. D. Skelton, published recently, it is stated that for many years Sir Alexander was actively connected with railway construction, especially during the railway boom of the fifties, being associated as a contractor with Sir David Macpherson and Sir Casimir Gzowski, and in later years he played a conspicuous part in the developing of the northwest along with his son Elliot T. Galt, through the Alberta Ry. & Coal Co., afterwards changed to the Alberta Ry. & Irrigation Co., which built the railway from Dunmore Jct. to Lethbridge, Alta., with some short branches, and also from Lethbridge to Great Falls, Montana.

Italian Railway Rates Increased. — A Rome press dispatch says that a royal decree has been issued increasing passenger rates on steam and electric railways from a maximum of 180% to a minimum of 100% over pre-war charges. On street cars the raise in fare in day time will be from 6c. to 9c. A ride on a street car at night, therefore, now costs 50% more than a ride in a cab prior to the war.

# The Upkeep of Freight Car Equipment.

By J. W. Senger, Superintendent of Rolling Stock, New York Central Railroad (Lines West), Cleveland, Ohio.

This subject is one of vital importance and all of its phases cannot be fully covered with a paper of this kind. Therefore only a few of the most important subjects are presented for your consideration. Those who are directly connected with and responsible for upkeep, care and maintenance can best appreciate the difficulties experienced in passing through the period of the war. At present, during the reconstruction period, due to the shortage of labor and material, and the increased traffic that is moving, and the scarcity of freight equipment, we are facing perhaps a bigger problem than the one with which we had to contend during the great conflict for the period mentioned. During the past three or four years a limited amount of freight equipment having been purchased, it is necessary to maintain equipment that in normal times would have been retired. Therefore, in order to bring this subject before you the writer has confined himself to the most important parts and divided the subject as follows: Facilities, material, organization and repairs.

Facilities are the most important in car repairs, next to labor, up to date shops equipped with modern machinery and labor saving devices. Being limited to taking care of the equipment, it must be realized that a 100% output cannot be had at all times; particularly is this true during the winter season. For obvious reasons the facilities for repairs have not kept pace with the increased equipment. This matter should be one of careful consideration with a view of increasing the facilities as quickly as possible.

Shop organization is also a vital point, and, in order to produce the maximum output, should consist of capable men. The most important of these are the shop superintendent, or general foreman, and his assistants. It is generally found that when the work is divided better results are obtained than to have the entire shop or shop yard covered by one man, as this practice makes the head of each division responsible. Junior supervisors should be educated to fill the position immediately ahead of them, so that in the absence of the foreman the work will proceed without loss of efficiency. Men in supervisory capacities should be selected from the ranks when possible to do so. This practice is an incentive to others. They should be men of a good personality, broad minded in their dealings with men and thoroughly conversant with the details of the work.

Valuable results are obtained by holding monthly meetings of the supervisors, bringing them into closer touch with each other and the practices in vogue at their respective points. Meeting places should be changed from time to time, giving all an opportunity to observe the conditions at the different points. Much valuable information can thus be obtained that will result in saving and greater efficiency and due credit given to those who are responsible for same.

Material.—The shortage of material is a handicap in production, often necessitating the substitution of one kind for another. Careful attention should be given to the use of material, that none is wasted, and all is used to the best advantage. Full co-operation should be had between the mechanical and stores departments, in the handling of material, that no unnecessary delay be had in supplying material at hand. Advantage should be taken of the scrap dock as much good material can be obtained. The necessary machinery and supervision to reclaim material should be furnished.

Repairs.—Under this heading the writer has divided the subjects into three classes, viz.: general repairs, light repairs and running repairs:

General repairs refers to both wooden and steel equipment receiving heavy repairs, or that are rebuilt, at which time due consideration should be given to the strengthening of all weak parts, the application of betterments, such as steel underframes, steel ends, improved doors and fixtures, etc., the thorough overhauling and modernizing of trucks, eliminating unnecessary parts and bolts, and providing safety irons to prevent brake beams falling down. After the completion of general repairs a final inspection should be made to know that all parts are in a serviceable condition before the car is released for service.

Light repairs.—Under this caption the writer refers to cars repaired on the ordinary repair track, and comprises such repairs as replacement of draft timbers, end sills, sill splices, parts of floors, parts of roof, doors and door fixtures, journal boxes, column castings, truck bolsters, side bearings, brake beams and connections, etc. Cars on light repair tracks should be gone over carefully for defects which may send them to the heavy repair track and avoid making light repairs when the condition is such as to warrant general overhauling. In connection with the light repairs enumerated, attention should be given to the brake equipment doing all the necessary work to put the brake in first class operative condition.

This is also an opportune time to inspect the car for worn parts, spreading of cotter keys, adjustment of the piston travel, seeing that proper connections and brake levers are applied, and that the hand brake and uncoupling levers are efficient, and periodical packing of boxes. If this is done it would prevent the cutting of cars when returned to service.

Running Repairs.—This is generally understood as repairs made in the classification or train yard, either by inspectors or what are termed "follow-up men." I wish to impress upon everybody's mind the importance of having the little things taken care of which are at times neglected; that is, renewing short or broken knuckle pins, wornout brake hangers and keys, bolts, the application and proper spreading of cotter keys, removal of worn brake shoe keys application of missing parts and correction of safety appliance defects. At this time the hand brake should also receive a thorough inspection, journal boxes should be examined to see that brasses and keys are in place, that no sign of previous heating exists and that packing is in its proper place and that there is enough lubrication to run the car to its destination. By giving proper attention to cars in the classification yard, which, of course, includes proper inspection, nearly all of our road delay and expense of setting out cars enroute could be avoided.

Quite frequently we hear complaints from other departments on account of too much time being consumed in inspection and repairs in the classification yards, and as explained above, I believe I have made it clear to you that inspection and light repairs are very necessary to ensure the train going safely to its destination without delay. While the work should be done as quickly as possible, we should insist upon proper time for inspection and repairs being allowed to accomplish this.

The equipment department of the railway is passing through and experiencing one of the most strenuous periods of its history. The demand that has been made upon it by the operating department, due to the necessity for car equipment suitable for transportation purposes, has tended to make it necessary to use all classes of equipment to the maximum. We have been called upon to supply cars which can be placed in service to relieve were originally built, but for other classes of service for which they could be fitted by temporary repairs. As a consequence we now find ourselves with equipment on hand which will require some time to build up to its former usefulness and which cannot be very well accomplished unless all railways provide themselves with newly constructed equipment not for the commodities for which they equipment now running, to enable the cars to be brought into the shop and receive general repairs or overhauling which will fit them for the service for which they were originally built.

The foregoing paper was read before the Central Railway Club, in Buffalo, N.Y., recently.

## Suggestions for Relief of Railway Congestion.

Double tracking of main lines from each important terminal to the first passing track, and a more general use of automatic block signals, are among the measures recommended by the American Train Dispatchers Association to relieve the serious congestion of railway traffic. Considerable attention has been given to facilitating operations within freight yards for the relief of this congestion, but a frequent cause of interruption in traffic movements is a delay to trains approaching or getting away from yards on single track lines. On double track lines, with especially heavy traffic, there may be an equal advantage in providing trackage for several miles from a terminal or division point in order to facilitate the movements of freight trains within the congested district. The advantages of automatic block signals for a similar purpose are obvious, since they permit of short blocks at comparatively small expense, while with the manual system the cost of installation and operation makes short blocks prohibitive. In the earlier days of automatic block signalling on American railways there were numerous objections from operating officials, to the effect that the introduction of this system would make it impossible to handle heavy traffic. Experience very soon showed, however, that the heavier the traffic the greater were the advantages of the automatic block system. Near terminal points it is especially desirable to reduce the length of the block sections to a minimum, in order to increase the traffic capacity; the automatic system meets this condition with efficiency and economy.

# The Efficient Handling of Freight Trains.

At the Travelling Engineers Association's annual convention in Chicago recently, a committee, of which F. Kerby, Baltimore & Ohio Rd., was chairman, and of which Malon Laquay, G.T.R., was a member, presented a report from which the following are extracts:—In order to handle freight trains efficiently and economically, it will be necessary to take into consideration the locomotive which hauls the train, as well as all other equipment used in doing the work; therefore, the locomotive must be put in the best possible condition before leaving the shop, so that it can handle the train efficiently and economically. The steaming qualities of the locomotive must be good, so that there will always be a sufficient amount of steam at hand to do the work. In order to have a free steaming locomotive, the flues must be kept clean, the grates and grate bars kept in good condition, ash pans should have plenty of opening, the extension front end kept tight, steam pipes, exhaust base, and superheater units kept free from leaks, exhaust tip of the proper size to give the proper draft and not cause back pressure, fire box and flues must be kept tight, and a good grade of fuel furnished, then one should have plenty of steam to haul the train.

It should next be known that the valves are square, so that there will be an equal distribution of the steam. One should also know that the valve and cylinder packing is not blowing, so that steam will not be wasted, and that there will be full power against the piston heads to haul the load assigned to it, within the given time, for time is a great factor at the present day of railroading, with the 8-hour day and time and half time for overtime in vogue.

In order to earn sufficient revenue, both efficiency and economy must be practised, and to do so, the locomotive must haul the allotted tonnage over the division in as short a time as possible. This cannot be done with a 50% locomotive; in addition to what has been said in regard to the condition of the locomotive, the injectors, sanding apparatus and air brake equipment must be kept in good condition.

Cars should be in good condition before being sent out in a train to avoid delays, due to accidents, on line of road. In order to do this, cars should be properly inspected and repairs made, or the cars switched out. With the increased business that some railways are doing, the yards become congested very quickly and it is important that trains be passed through the yards as soon as possible; in order to do this, sufficient power must be kept in readiness to move trains as soon as they are made up, so that other trains can be moved into the yard and inspected promptly and properly.

It is necessary to have the receiving yard laid out so that the work can be done quickly, and facilities should be provided to take care of all the details of inspection at one time, such as testing the air brakes, examining couplers, carrier plates, worn knuckles, broken knuckle pins, hot journal boxes, and all other parts of the equipment. All trains when stopped in receiving yards should have couplers stretched from locomotive to caboose; this can be done by having some hand brakes set on the rear of the train and have the locomotive pull the slack out of the train. By doing this they could be inspected and if the knuckles are worn badly they could be found and repaired before going out on the road in bad condition and having coupler slip by and cause the brakes to apply in emergency and damage other cars in the train, and probably injure some one, or block the opposite track and have an accident to opposing trains running into derailed cars. It is better to delay a train in the yard for inspection and repairs than it is to have it delayed out on the line of road. While in the yard such a train blocks only one track, and other trains can pass it on some other track, but on the line of road, when stopper by an accident, other following and opposing trains that are in charge of crews making overtime are blocked, which means time and half time at present. When a train is delayed in the yard there is no crew to be considered. The same can be said of hot boxes. When a train has to stop on the line of road to repack a hot box or set out a car with a hot box, it very often runs the crew's time into overtime and likewise crews of following trains.

The trains on level divisions should consist of all through loads as much as possible, and the train should consist of as much tonnage as the locomotive can handle and make an average speed of at least 14 miles an hour. If it is necessary to fill out a train with cars for intermediate points or to give the train local cars, they should be switched on the front part of the train in station order, so that only the cars to be set off will have to be handled. With the long heavy trains that are being handled at present, after a train has started out of the yard it should be kept moving as much as possible, for the stopping and starting of the long and heavy trains is what causes damage to equipment and also delays. The train should not be stopped for coal over the division, and only stopped for water as few times as is necessary. The water stations should be located so that it will be possible for the locomotive man to make as long a run as the amount of water in the tank will permit, but in case of an accident he could stop at a water station between regular points and not run out of water. The locomotive men should be educated to go as far as they can before stopping for water. In making stops for coal and water, the locomotive man should be very careful in doing so and not try to make spot stops with a freight train.

Stopping Trains.—All long and heavy freight trains should be stopped with one application of the air brakes and in making the stop the locomotive man should endeavor to keep the slack bunched from the front end. This can be done by making the initial reduction just sufficiently heavy to run the slack in and follow up with light reductions until the train is stopped. In order to keep the front end from running out, the locomotive man should make a reduction of about eight or ten pounds about sixty feet before coming to a full stop and have brake pipe exhaust blowing at the time of the stop. This is to keep the brakes applying stronger on the front end to hold the slack in and leave the brake applied on the train when the engine is cut off.

There are two kinds of slack, known as loose slack in the drawheads and couplers, and spring slack, which is in the spring in couplers. The spring slack is more dangerous than the loose slack in making a stop, on account of the reaction of same, after they have been compressed. Therefore, by making the application with light reductions the springs are compressed more gradually throughout the entire train, and by doing so the compression on the spring is less, and not so dangerous as it is with a heavy reduction.

All trains after being stopped in terminal yards should have a few hand brakes set up on the rear part of the train, and then the train stretched out by the incoming locomotive and the air brakes applied with a full service application and held until the angle cock on the rear of tank is closed. Then the locomotive can be cut off the train. This is to give the air brake inspectors a chance to check up the piston travel and brakes that do not apply or leak off. The air brake inspectors should make the inspection for brakes that leak off and for long piston travel, and mark the same as quick as possible, so that cars with defective brakes can be switched out of the train while passing over the hump or being classified, so that when the train has passed from the receiving to the dispatching yard there will be no more switching in train. Before switching a train all air hose should be uncoupled to save damage to gaskets and rupturing hose at the nipples.

Dispatching Trains from Yards.—All trains should be coupled properly and the air hose connected up, and where the yard is equipped with an air brake testing plant the train will be charged up with air and all leakes taken up and the air hose and gaskets renewed when necessary. Where a yard testing plant is not available, the work should be done after the locomotive is coupled to the train; this, of course, will take some time and the length of time depends on the force you have to do the work. The success of the trip greatly depends on the start one gets out of the yard.

After the train leaves the yard in good condition, with the proper tonnage and the locomotive in condition to do the work required of it, the train dispatcher and operators must do their part to get the train over the road in the allotted time. The train dispatcher must know that the force in the telegraph and block signal offices are performing their duties and that orders are ready for the trains, and not stop train unnecessarily, for an extra or avoidable stop made by a heavy freight train means a loss of time in stopping and then getting the flagman in and starting, and very often the train is parted in trying to start, which probably would not happen if the train had not been stopped. On single track railways it is not possible to haul as heavy tonnage as economically as it is on double or three or four track railways, on account of the extra time consumed in meeting and passing trains. The lost time will have to be taken care of by increased speed while running in order to make the run over the division within the eight hours. There is no economy in loading a freight train so that it cannot get over the division without making overtime.

On divisions where the grade are heavy and it is the practice of using one or more helpers on the ascending grades, it is important to know that the equipment is in good condition and that no weakly constructed cars be used in heavy tonnage freight trains, if possible to avoid

it, for as a general rule the heaviest power is used in helping service and with the high tractive effort of the locomotives that are used at present, such as the Mallet and Santa Fe types, with a tractive effort of from 70,000 to 105,000 lb., the cars have to be built and maintained strong, to stand the pulling and pushing of these monster locomotives. The trains are both long and heavy, and cars with weak end and center sills or weak couplers are very dangerous to handle in trains of this kind. There should be instructions given to all yard masters and car inspectors, that cars that appear to be old or of weak construction should be switched out of heavy trains, where helpers are used, and placed in a train to be run without a helper or a train hauling light tonnage.

In handling freight trains with power brakes as well as with hand brakes it is necessary to keep the speed low and not let the train get up to a high rate of speed at the start from top of grade, for if this is done it will require a great deal more power to get it under control and very often is the primary cause of trains running away on the grades. By holding the speed down at the start and by making the applications often and as light as possible, so as to keep the retaining valves charged up as equal as possible at all times, you will have full control of the train and a lower temperature on wheels and less liability of cracked wheels.

Some roads handle trains on level tracks as well as on heavy mountain grades with electric power, and some other roads are figuring very strongly on electrification. While this method of operation applies only to a few roads, we are of the opinion that more roads will take up the matter of electrification in the near future, from the fact that with the electric locomotive the terminal delays can be reduced considerably, also delays in stopping for water and coal, and it has been demonstrated that an electric locomotive can be run over three divisions of over 100 miles each, by changing crews, without any delays to the locomotive. This would indicate a high point of efficiency and economy, from the fact that it could be a no-stop operation from one end of the division to the other. This would eliminate the pulling of draw bars and damage to equipment due to starting and stopping. It would also reduce the cost of brake shoes and other equipment by not using the same, due to no stops.

On heavy grades the speed of the train is controlled, while descending, by regeneration. This reduces the wear on brake shoes, also reduces expense to a great extent in the maintenance of the entire brake equipment; but it must be understood that by regeneration the speed of the train is only held under control and it will be necessary to use the air brakes to stop the train, just the same as if you have been controlling the speed of the train with the air brakes.

# Improving Maintenance of Way Methods.

By A. M. Burt, formerly Assistant Director, Division of Operation, U.S. Railroad Administration.

The expenditure for maintenance of way and structures on class 1 railways of the United States for 1919 was in the neighborhood of $750,000,000, representing about one-sixth of the total operating expenses of these roads. Reduced to a daily basis, this means that it requires more than $2,000,000 a day to keep the railways in condition for use. While this is much less than the amount spent for conducting transportation and considerably less than the cost of one of maintenance of equipment, it is nevertheless the major items that go to make up the total cost of operation. The increased cost of maintenance of way purposes has been very large, so that now fully $1,000,000 a day more is being spent for this purpose than was spent three years ago.

The magnitude of these expenditures and the very large increases should make us all stop and take thought. The question that immediately presents itself in connection with them is whether progress is being made toward increased efficiency—if so, whether the maintenance of way department is keeping in step with the other departments in this essential matter, and whether some changes in methods can be made to secure better resuts. It is, therefore, of value to consider the differences that now exist in methods designed to increase efficiency as between the maintenance of way and the other departments of a railway. In comparing these methods we find the following conditions standing out very prominently:

In connection with transportation operations, many measures of work done have been devised and are in daily use and the supervisory officer is constantly in touch with the situation through various reports. In maintenance of equipment work some measures of work done have been devised, although their application is much less general than in the transportation department.

In maintenance of way work any measures of work done are, generally speaking, conspicuous by their absence. There is, in this work, no way of striking a balance between cost and output or of showing in any definite way whether the work is being done with greater or less efficiency than heretofore. On many roads a budget system is in use, but no matter how well such a system is carried out it does not supply the measure of work done. The roadmaster knows that he has been allowed a certain amount and believes that he has spent this amount judiciously, but he has no way of knowing definitely whether he has accomplished more or less than the roadmaster on an adjoining district or of knowing whether he is making an improvement or the reverse as compared with his past record. It seems clear that some measure of work accomplished is very desirable. There is nothing that stimulates thought and initiative to such an extent as a little competition with one's neighbor. It puts an element of sport into the job and not only helps the work but is a most developing condition for the individual.

It is realized that the character of maintenance work makes it especially difficult to establish measures of work accomplished, such as are in common use in connection with transportation matters, but there is apparently a tendency to magnify the difficulties of the subject and to assume the attitude, "What's the use? It can't be done." It surely must and will be done in a much larger measure than it is being done at present, and, if it is to be well done, the practical maintenance men must take an active interest in the subject and do their bit in solving the problem. When we have done anything in one way for years we all are apt to consider that way as being the only right one and to consider the subject as a closed book. This, in a measure, is the present attitude of mind, but we must shake ourselves loose from such an attitude if progress is to be made.

If the practical maintenance men do not take an active part in this matter there is danger of the work being put on a statistical basis to such an extent that no good results will be accomplished. There has been some of this in the past in other departments, where in some instances statistics have been undertaken so involved in detail that the result was nothing more than a work of the imagination. The maintenance men must make a special effort to ensure against such a mistake as this in connection with their work. On the other hand, some progress is possible, and something of this kind must be undertaken.

To illustrate what might be done but is not: Several years ago a certain railway used its maintenance forces for packing ice. The work was completed in December or January, and the following spring, about the time the mosquitoes began to get bad, a statement of the cost of the work was returned to the division from a source generally unknown. This report was turned over to the roadmaster, who was then very much engrossed in his spring work and who usually clasified it as "Interesting, if true," checked it with a lead pencil and filed it away in its proper box where it could be used by his clerk in the event of his being called upon to make any explanation. No daily records were kept while the work was in progress. Some time later the work of packing the ice was turned over to a contractor, and immediately the job was organized on a business basis. The foremen were required to make a report each night showing the amount of ice packed, the pay roll in total and per ton and the delays in time and labor cost. In this way each foreman was kept in close touch with his work, without being unreasonably burdened with details. If he was delayed for switching, he had something tangible to show the yardmaster; if he had an unreasonable amount of trouble with his hoisting engine, the fact immediately showed up and received attention; or, if his force was out of balance, that fact was immediately called to his attention by the increase in his unit cost. It would have been entirely feasible to have had a similar plan when the railway was doing the work with its own forces, but no such plan was used.

Many similar instances could be cited, going to show that advantage has not been taken of the opportunities that are readily available. Every maintenance man should be giving this problem the most thoughtful and constant attention, and without question the subject deserves more attention from managers than it has had in the past. The following is offered by way of suggestion:

Better facilities should be provided for the exchange of ideas. Local roadmasters' associations should be encouraged. Such associations are most helpful if discussions are kept along general lines and away from matters having only a nar-

row and local interest. The time of the men away from their routine work is well spent. There is less experience with formen's associations, but apparently considerable benefit might be derived from them.

Attendance at national maintenance of way meetings should be actively encouraged and liberal allowances should be made for the expense of men attending such meetings. The men always bring back ideas and inspirations that result in more efficient work.

The question of getting a more general dissemination of ideas and information through publications should be considered. There should be a more general use of the railway periodicals.

The problem should be worked out from the inside and by the talent already on the individual railways. There is plenty of such talent, and, by encouraging the local men to work out the problems, morale will be improved. They can do the work much better than it can possibly be done by any so called efficiency expert from the outside. In doing this each man should be given proper credit for his ideas and his part in the work.

The opportunity of the maintenance of way man is here. We look forward, confidently, to his making the most of that opportunity.

# Cuban Purchasers of Railway Rolling Stock.

Canadian Trade Commissioner H. A. Chisholm, writes from Havana, Cuba:—There are three classes of purchasers of rolling stock in Cuba. First, there are the steam railways for the public service, which were all built and are controlled by private capital. The two leading railways operating in Cuba are the United Railways of Havana, serving the western end of the island, and the Cuba Railroad, serving the eastern end of the island. Both these lines were built by British capital, the latter being the original Van Horne railway, but now controlled by New York interests. The United Railways of Havana, which includes several subsidiary roads, is still controlled from London and the majority of its senior officers are British. During the war many of its officers were from the United States, but during recent months several British engineers and railway officials have arrived to take over various departments. G. A. Morson, General Manager for many years, has been superseded by Brigadier-General Jack, formerly director of British railways in France. The United Railways of Havana is buying large quantities of rolling stock, of which it is badly in need, and all of which has come from the U.S. Brigadier-General Jack, however, is very keen to give British manufacturers every opportunity to submit quotations on all his requirements.

Type of Cane Cars, used in Cuba.

There are several smaller railways in Cuba, constructed to serve isolated portions of the island. Most of these are standard 4 ft. 8½ in. gauge, however.

Second, there are the electric tram lines built for passenger traffic in the leading cities. Most of these are naturally comparatively small corporations, as Havana is the only city with a population of over 100,000. The United Railways of Havana control all the Havana electric properties, except the Havana Electric Railway, Light & Power Co.

In the third place, quite a considerable railway mileage is owned by ingenios or individual sugar mill corporations. Throughout the island the sugar mill owners have laid their own tracks within the area from which their cane is derived. Such tracks are built primarily for conveying the cane from the colonias or cane plantations to the mills to be ground. In some parts of the island not well served by the railway companies the mills have built narrow gauge (3 ft.) roads. For the most part, however, the cane roads are standard gauge and laid to connect up with the larger railways, so that rolling stock may move freely over all lines. All the narrow gauge cane roads buy their own rolling stock. Many of the standard gauge cane roads have been using railway rolling stock. Recently the tendency has been for the larger sugar mills to buy their own cane cars and locomotives. The reasons for this have been the difficulty of procuring sufficient cars from the railways for moving the cane to the mills, and the desire of the mill owners to be independent of the railways.

There are 193 operating sugar mills in Cuba, with some 16 or 20 more in course of construction. These mills vary in capacity from 4,000 bags (a bag contains 320 lb.) annually to 700,000, the total production of the island being in the neighborhood of 30,000,000 bags for the last season. It is estimated that at least half of the Cuban sugar mills buy their own rolling stock. The track mileage owned by a single mill runs from 60 kilometres to over 300 kilometres. A prominent engineer recently estimated that 100 sugar mills in Cuba each operate an average of 150 cars and 6 locomotives, and laid or used annually 15 kilometres of track. This estimate would mean that Cuban sugar mills themselves own and operate a minimum of 15,000 cane cars and 600 locomotives.

The building of cane cars alone for Cuba would offer a splendid market for the car manufacturer. The attached illustrations show the types of cane car generally supplied the Cuban sugar mill by the U.S. manufacturer.

The U.S. car manufacturer considers that he need never fear competition in the Cuban market. The Cuban customs tariff has placed a heavy general ad valorem rate on railway rolling stock of all kinds, amounting to 31.25%. The U.S. manufacturer, then, gets a reduction from this rate of 20%. This means that a Canadian car would pay 31.25% duty as against only 25% charged the U.S. car. The result has been that for many years U.S. rolling stock has had practically a monopoly of the Cuban market, although previous to the war Cuba imported some 10% of her rolling stock from the United Kingdom and Germany.

Types of Cane Cars, used in Cuba.

**Editor's Note.**—We think Mr. Chisholm is somewhat astray in speaking of the Cuba Co.'s railway as having been built by British capital. Of course its founder, Sir William Van Horne, and a few Canadian associates, invested largely in its, but Sir William also secured the co-operation of a number of U.S. capitalists.

**English Channel Tunnel.** — Prospects for the realization of the project for a tunnel under the English Channel, to connect England and France have practically disappeared, according to recent reports from English engineering circles. It is thought that military and political reasons played a part in determining an apathetic attitude toward the project, but its great cost, and the uncertainty of earnings sufficient to justify the cost were also of influence. Moreover, because of conditions resulting from the war England's national energies will be devoted largely to maintenance and reconstruction for some years, it is stated, and few new works of magnitude will be undertaken.

## Railway Development, Projected Lines, Surveys, Construction Betterments, Etc.

**English River Pulpwood & Timber Limit Ry.**—The Ontario Government will receive tenders to Dec. 18 for the right to cut forest products on an area in the English River water shed, having a total area of 3,046 square miles. The limit commences at the intersection of the northerly limit of the National Transcontinental Ry. right of way with the boundary between Ontario and Manitoba; thence north along the boundary to the southerly shore of the English River; thence northeasterly following the southerly shore of the river, lake expansions and Lac Seul to the intersection with the west limit of Indian reserve 28; thence southeast and south following the westerly and southerly boundaries of the reserve to its southwesterly angle near Lost Lake; thence south to the northerly limit of the N.T.R. right of way; thence westerly following the right of way to the point of commencement.

The conditions provide that the successful tenderer shall erect a pulp and paper mill and operate sawmills in Kenora, at which the timber cut shall be manufactured. The product of the limit will have to be conveyed to Kenora for manufacturing purposes, and to do this the contractor will, it is said, have to build a railway from some central point of the limit on the National Transcontinental Ry. to Kenora, or to the C.P.R. which at present serves that town. The only other railway connection would be easterly on the National Transcontinental Ry. to Superior Jct.; thence by the G. T. Pacific Ry. line into Fort William, and thence by the C.P.R. to Kenora; or westward by the National Transcontinental Ry. to Winnipeg, and then by the C.P.R. to Kenora. The suggested independent line would, it is stated, be about 100 miles long. Surveys for such a line were made some years ago by the Lac Seul, Rat Portage & Keewatin Ry. Co., incorporated by the Ontario Legislature in 1903 and re-incorporated in 1908, or by another company chartered by the Dominion Parliament to build a line from the Canadian Northern Ry. west of Port Arthur northerly to the English River.

**Esquimalt & Nanaimo Ry.**—The plans for the highway portion of the Johnson St. bridge, Victoria, have been finally approved by the E. & N.R. management, and tenders for the substructure were received by the City Council to Nov. 22. The work will, it is expected, be completed in about nine months. It is said that contracts for the steel superstructure and for the bascule span will be let in Feb., 1921. (Nov., pg. 606.)

**Essex Terminal Ry.** — The Dominion Parliament will be asked next session to extend the time within which the company may build the line authorized in 1917, from its existing line near Ojibway to Pelton, Ont., seven miles. (Sept., 1919, pg. 491.)

**Flinflon Mining District.** — We are officially advised that the Manitoba Government has arranged with the Canadian National Rys. to have a survey made, at the Government's expense, for a line from some point on the Hudson Bay Ry. to the Flonflon mining district. E. M. M. Hills will be the engineer in charge of the survey. The actual date of starting the survey depends upon when sufficient ice has formed to permit of being travelled over. It is expected that the first party, in charge of J. E. Silcox, will start early in December, and the second party, in charge of A. J. Sill, as soon as possible thereafter. It is stated that the Manitoba Legislature will be asked next session to provide for the construction of the railway. (Nov., pg. 606.)

**Grand Trunk Pacific Ry.**—A press report states that contracts have been let to Olaf Hansen, J. McNeil and Jennings Bros., for the supply of 900,000 ties at varies points between Prince George and Prince Rupert, B.C. (Sept., pg. 489.)

**Kettle Valley Ry.** — The branch line from Princeton to Copper Mountain, B. C., 14 miles, is reported to be completed, and application has been made to the British Columbia Government for the payment of the subsidy of $5,000 a mile which was voted by the Legislature towards its construction. (Oct., pg. 550.)

**Newfoundland Ry.**—The St. John's City Council has been asked by the Newfoundland Railway Commission to reconsider its decision regarding the proposed temporary erection east of the St. John's railway station. The letter was referred to the city solicitor for consideration. The matter came before the Municipal Commission Nov. 11, when the application was refused on the grounds that the proposed building is not in accordance with the law, and that the site on which it was proposed to erect it is reserved for city purposes. (Nov., pg. 607.)

**Pacific Great Eastern Ry.**—A press report states that the last girder of the bridge over Deep Creek was put in position Oct. 28, and that track was laid over it on Nov. 1. The bridge, which was under construction for about 14 months, was fully described in Canadian Railway and Marine World, Dec. 1919, pg. 654. Canadian Bridge Co. had the contract for the steel work.

A press report states that with favorable weather conditions it is expected that track will be laid into Quesnel, B. C., by Christmas. (Nov., pg. 607.)

**Pere Marquette Rd.**—A press report states that tenders will be asked shortly for the construction of a station at Sarnia, Ont., the work to be gone on with in the spring. (Oct., pg. 551.)

**Quebec & Chibougamau Ry.**—See "The Quebec & Chibougamau Ry. Project," on another page of this issue.

**Timiskaming & Northern Ontario Ry.** A press report states that Timmins, Ont., Board of Trade has asked the Ontario Government to build a line from Timmins, on the T. & N.O.R. to the Canadian National Rys. near Sudbury. Such a line, it is said, would pass through a well timbered and mineralized country, and estimates as to its probable length vary from 44 to 75 miles. The Premier is stated to have advised the deputation that while a wagon road would probably be built through the district in the near future, the question of extending the railway must wait for a time.

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**Steel Rails Suit.** — Arguments were concluded Nov. 9 in the Court of Exchequer in the case of the Dominion Iron & Steel Co. vs. the Dominion Government for compensation under the War Measures Act. The company was ordered by the Government to make certain quantities of steel rails at certain prices at a time when the company could have made greater profits on turning out steel for shells. Judgment was reserved.

## Reid Newfoundland Co.'s Annual Meeting, Re-incorporation, Etc.

The Reid Newfoundland Co.'s annual meeting was held at St. John's, Oct. 28, at 3 p.m., President H. D. Reid in the chair. The directors' report contrasted the industrial depression prevailing almost all over the world with the unusual activity in the pulp and paper industry in Newfoundland, which gives hopes of a very large development of the water powers and timber areas of that Dominion. The company's railway and steamship operations showed an increased deficit, owing to the rising costs of coal and labor, but the Newfoundland Government has undertaken to improve the standard of the railway. Shortage of coal supplies retarded operation during the winter of 1919-1920, which was the most severe for 50 years. Extensive ballasting has been continued and the roadbed is in excellent condition. Locomotive power is in first class shape. The earnings from the electric and dock departments maintained steady progress, but extensions and improvements to these are necessary and will be undertaken during 1921. Group insurance on all employes has been effected and is expected to encourage co-operation and efficiency. The retiring directors were re-elected. At a special meeting later on the same day, held under the provisions of the Companies Act, it was decided to register the company under that act so as to get the benefit of the code of procedure which the act provides and which is not available to chartered companies.

On Nov. 4 Reid Newfoundland Co. Ltd. was incorporated under the Newfoundland Companies Act, with authorized capital of $15,000,000 in 150,000 shares. The objects of the newly incorporated company, as set forth in the memorandum of association, are, briefly, to operate and further develop the present railway system and its branch lines, to operate the present street railway, electrical plants, dry dock, etc., to operate the steamship services now under the company's control, to build, purchase or otherwise acquire ships for the purpose of maintaining or developing these services, to develop the natural resources of the country or that section thereof for which it has grants, such as mining, timber, etc., and in the operation of the railway and steamship services, the company is to have priority over all other railways operated in Newfoundland, whether run by steam, electricity or otherwise.

A protest against the incorporation was filed by Sir William D. Reid and by C. H. Cohen, attorney for Miss Harriet Reid.

The directors of the newly incorporated company are H. D. Reid, President; R. G. Reid, Vice President; C. O'N. Conroy, Treasurer; J. P. Powell, H. B. Thomson and J. M. Forbes.

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**The Minister of Railways in England.** Hon. J. D. Reid is reported to have said at the Canadian Club luncheon in London, Eng., Nov. 15, that the proprietors of the Grand Trunk and the Grand Trunk Pacific Railways, through the Canadian Government taking over these systems, would have their investments absolutely safe for all time and would never have to fear for their dividends or their principal. The Canadian Government had been criticized for building in advance of requirements, but such building had hastened the development of the country.

## Railway Rolling Stock Orders and Deliveries.

Imperial Oil Ltd. has received 18 tank cars from Canadian Car & Foundry Co.

The Reid Newfoundland Co. has ordered five locomotives from Baldwin Locomotive Works.

The C.P.R., between Oct. 15 and Nov. 17, received 6 vans from its Winnipeg shops.

The G.T.R. has received 4 six-wheel switching locomotives from its Point St. Charles shops, Montreal, and 7 eight-wheel switching locomotives from Canadian Locomotive Works.

Canada Creosoting Co. has ordered 200 tie cars from Canadian Car & Foundry Co. for delivery by May 21, 1921. Following are the chief details:—

| | |
|---|---|
| Length over buffer castings | 5 ft. 4¾ in. |
| Extreme width | 6 ft. 7½ in. |
| Distance between backs of wheels | 2 ft. 3¾ in. |
| Height from top of rail to top of removable bale rod | 6 ft. 3 27/32 in. |
| Height from top of raoil to top of end sill | 11¾ in. |

Canadian Car & Foundry Co., between Oct. 15, and Nov. 15, made the following deliveries:—375 box cars from Montreal, and 165 refrigerator cars from Amherst, N.S., to Canadian National Rys.; 12 dining car frames and 10 baggage car frames from Montreal for C.P.R.; 3 locomotive cabooses and 6 motor trucks from Montreal for Hydro Electric Power Commission of Ontario and 18 tank cars from Montreal for Imperial Oil Ltd.

The G.T.R. has received 7 eight-wheel switching locomotives from Canadian Locomotive Co., an illustration of which appears on this page. These complete an order for 25 placed in March. Following are the chief dimensions:—

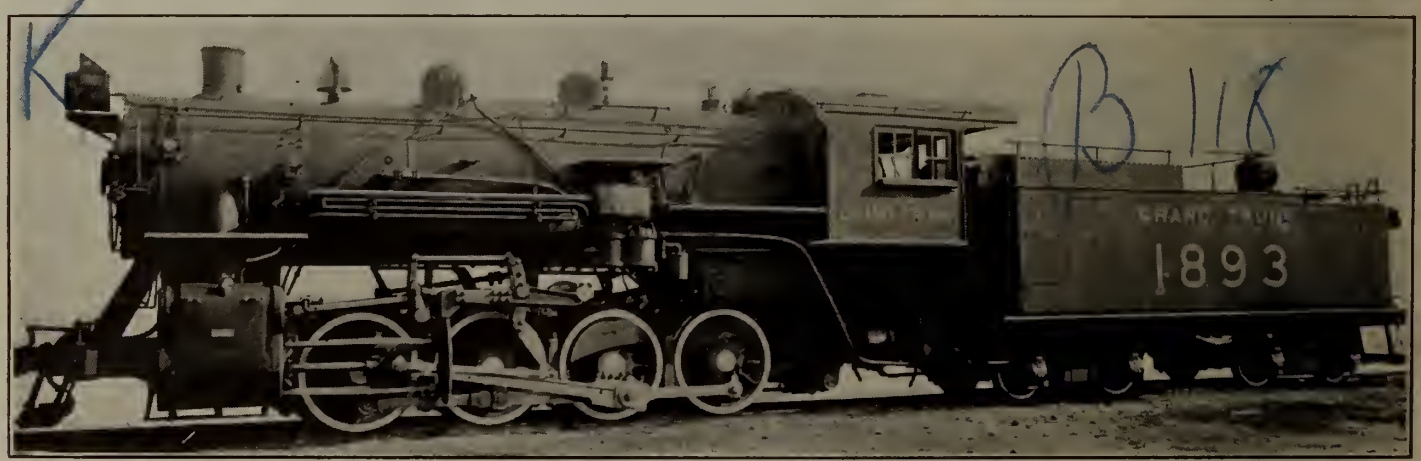
| | |
|---|---|
| Boiler, type | Radial stayed |
| Boiler diar., front | 69 9/16 in. |
| Boiler diar, largest | 76 in. |
| Firebox | 96⅞ x 75¼ |
| Tubes, no. and diar. | 182 2 in.—25 5⅜ in. |
| Tubes, length | 12 ft. 4 in. |
| Heating surface, firebox | 168 sq. ft. |
| Heating surface, tubes | 1,168 sq. ft. |
| Heating surface, flues | 608.5 sq. ft. |
| Heating surface, arch tubes | 26 sq. ft. |
| Heating surface, total | 1,970.5 sq. ft. |
| Grate area | 50.60 sq. ft. |
| Staybolts | Brown's iron |

The Hydro Electric Power Commission of Ontario has ordered 2 four-wheel saddle tank locomotives from Montreal Locomotive Works. Following are the chief details:—

| | |
|---|---|
| Weight, total | 99,800 lb. |
| Wheel base | 7 ft. |
| Cylinders, diar. and stroke | 16 x 24 in. |
| Driving wheels, diar. | 42 in. |
| Driving journals | 8½ x 9 in. |
| Boiler, type | Straight top |
| Boiler pressure | 180 lb. |
| Boiler diar., inside first ring | 51 in. |
| Firebox, length and width | 52 3/16 x 55⅜ in. |
| Tubes, no. and diar. | 156—2 in. |
| Heating surface, tubes | 946 sq. ft. |
| Heating surface, firebox | 69 sq. ft. |
| Heating surface, total | 1,015 sq. ft. |
| Grate area | 20.2 sq. ft. |
| Tractive power | 22,400 lb. |
| Factor of adhesion | 4.46 |
| Reverse gear | Hand lever |
| Capacity, water | 2,000 gall. |
| Capacity, coal | 2,700 lb. |

The Timiskaming & Northern Ontario Ry. has ordered 4 Pacific type (4-6-2) locomotives from Canadian Locomotive Co. They will be the first in Canada to be equipped with the booster engine. Following are the chief details:—

| | |
|---|---|
| Weight on drivers | 155,000 lb. |
| Weight, total | 252,000 lb. |
| Wheel base of engine, rigid | 12 ft. 2 in. |
| Wheel base of engine, total | 32 ft. 6 in. |
| Wheel base of engine and tender | 60 ft. 3½ in. |
| Heating surface, firebox and arch tubes | 217 sq. ft. |
| Heating surface, tubes and flues | 2,716 sq. ft. |
| Heating surface, total | 2,933 sq. ft. |
| Driving wheels, diar. | 69 in. |
| Driving wheel centers | Cast steel |
| Driving journals | 10 x 13 in. |
| Cylinders, diar. and stroke | 23 x 28 in. |
| Boiler, type | Radial stayed |
| Boiler pressure | 200 lb. |
| Tubes, no. and diar. | 170—2¼ in.; 32—5½ in. |
| Tubes, length | 18 ft. 8 in. |
| Injectors | Ontario |
| Safety valves | Coale |
| Brakes | Westinghouse American |
| Packing | Paxton-Mitchell |
| Superheater | Superheater Co.'s type A |
| Booster engine | Franklin Railway Supply Co. |
| Speed recorder | Boyer |
| Cab | Vestibule type, all steel |
| Weight of tender loaded | 156,000 lb. |
| Tender capacity, water | 6,500 imp. gall. |
| Tender capacity, coal | 12 tons |
| Tender, type | Water bottom, vestibule attachment |
| Truck, type | 4 wheel, Commonwealth |
| Truck wheel, diar. | 36 in. |
| Wheel, type | Steel tired, cast steel center |
| Truck journals | 5½ x 10 in. |
| Brake beams | Simplex bigh speed |




Eight-wheel Switching Locomotive, Grand Trunk Railway.

## Railway Finance, Meetings, Etc.

**Canadian Pacific Ry.**—A dividend of 2½% has been declared on the common stock for the quarter ended Sept. 30, being at the rate of 10% a year. Of this, 7% is paid out of revenue, and 3% from special income account. The dividend is payable Dec. 31, to shareholders of record of Dec. 1.

**Guelph Junction Ry.**—A press report states that at the quarterly meeting of directors at Guelph, Ont., Nov. 17, a statement was submitted from the C.P.R., which operates the line, showing that there had been a slight decrease in the earnings for the three months ended Sept. 30, compared with the corresponding three months of 1919. A substantial dividend is said to have been declared and paid to the Guelph City Council.

**New York Central Rd.**—There has been deposited with the Secretary of State at Ottawa a copy of a lease dated Sept. 27, Guaranty Trust Co., New York, as trustee, to the New York Central Rd. Co., under the New York Central Rd. Co. Equipment Trust of 1920.

**Pacific Great Eastern Ry.**—The following statement is reported to have been given out by the British Columbia Prime Minister at Victoria Nov. 12:—"The Comptroller of the railway advises me that from Jan. 1, 1917, to Feb. 23, 1918, during which time the operation of the railway was under the control of P. Welch, the percentage of loss of operation as compared with the revenue was 117. From Feb. 23, 1918, to July 31, 1920, the percentage of loss in proportion to revenue was 58.7 During August and September, under the present management, the percentage of loss to revenue was 43.5."

**Stanstead, Shefford & Chambly Ry. Co.**—The following officers and directors have been elected for the current year:—Chairman, Howard G. Kelley, Montreal; President, Hon. G. G. Foster, Montreal; Vice President, Hon. M. Smith, Cowansville, Que.; other directors: W. H. Robinson, Granby, Que.; W. H. Miner, Granby, Que.; J. P. Noyes, Cowansville, Que.; B. R. Corless and J. G. Smith, St. Albans, Vt.; Secretary-Treasurer, J. H. Lefebvre; Assistant Secretary-Treasurer, B. R. Corless.

**Inverness Railway & Collieries Ltd.**—As stated in Canadian Railway and Marine World recently, the Inverness Ry. & Coal Co.'s properties in Cape Breton have been sold to M. E. C. Henderson, of H. D. McKenzie Co., Halifax, N.S., and the name of the company has been changed to Inverness Railway & Collieries Ltd., of which M. E. C. Henderson is President, and J. F. Smith, Halifax, Vice President; F. C. Bigelow is Railway Superintendent, and S. G. Davis, General Sales Agent, both being at Port Hastings, N.S.

**Thefts by C.P.R. Employes.** — L. C. Smith and J. L. Derrick, C.P.R. employes at Regina, Sask., were sentenced to six months imprisonment each, Nov. 10, for receiving a quantity of whiskey stolen from a shipment to Winnipeg. The judge said he was not at all sure that the men did not actually steal the goods.

**Port Haney Logging Railway.** — A press report states that a contract has been let to Northern Construction Co., Vancouver, to build about five miles of logging railway in the Port Haney section of Maple Ridge municipality, B.C.

# Canadian National Railways Construction, Betterments Etc.

Sydney, N.S.—The city council has asked the C.N.R. to repair the portion of Dood St., adjoining the station, which is owned by the Railways Department. The section owned by the city is only 12 ft. wide, the Government owning the rest.

Yarmouth Locomotive House Destroyed.—The Halifax & Southwestern Ry.'s frame locomotive house at Yarmouth, N. S., with its equipment, tools, and a quantity of railway supplies, was destroyed by fire recently.

St. John Yards.—The work in progress during the summer at the St. John, N.B., yards, is reported to be practically completed. In addition to the installation of a number of private sidings, and extra tracks on Water St., accommodation for about 600 more cars has been provided.

National Transcontinental Ry. Yards, Moncton.—A press report of Nov. 12 stated that most of the work of dismantling the N.T.R. yard at Moncton, N.B., had been done. The locomotive house was almost entirely demolished, the machine shop was being taken down, and the coaling plant was entirely demolished. It is reported that the yard will be done away with entirely, except possibly for the storage of old cars.

Quebec Hotel.—A Quebec dispatch of Nov. 9 said that it was unofficially reported there that tentative plans were being entertained by the C.N.R. for the erection of a large hotel there, along the line of the Chateau Laurier, Ottawa. We are officially advised that the report was without foundation.

Chaudiere Jct. Coaling Plant.—Tenders were received recently for the construction of a 350 ton mechanical coaling plant at Chaudiere Jct., Que.

Fresniere-St. Jerome Line. — Tenders were received to Nov. 30 for clearing, fencing, grading, culverts and bridge substructures on a line rfom mile 25.16, Lachute Subdivision, near Rinfret Jct., Que., to mile 23, Grenville Subdivision, near Fresniere, Two Mountains County, about 12 miles. We are officially advised that this line will extend from near Fresniere, on the Grenville Subdivision, about 23 miles from the Montreal tunnel terminal station, to near Rinfret Jct., which is the point of connection of the Montfort Subdivision with the Lachute Subdivision. There is considerable summer traffic on the Montfort Subdivision, which serves the Laurentian Mountains summer resorts. Access to this country has been greatly handicapped through want of direct train service with Montreal. At present, passengers from the Montfort Subdivision transfer to the C.P.R. at Montfort Jct., and are taken to the Place Viger station, Montreal. This has never been a very satisfactory arrangement for travellers on this line and has held back the development of the summer resorts. To reach Rinfret Jct. at present on the C.N.R. it is necessary, if going from the tunnel terminal station, to travel via Cushing Jct., a distance of 86 miles; from Moreau St. station, Montreal, the distance is 70 miles. The new line will give a route of 35 miles from the tunnel terminal station. The gradients and curvature on the existing lines are not excessive, and there will be no change in these, the whole improvement being in the distance to be travelled, particularly between Rinfret and the tunnel terminal station. The line from Fresniere to St. Jerome is very straight, with few gradients of any account.

There will be, on the new construction, a steel bridge over the Deschenes River, immediately after leaving the Grenville Subdivision, but, outside of about half a dozen concrete culverts, there will be no other structure of any account. The grading will be very light. It is intended to start work as soon as the frost is out of the ground in the spring, and to have track laid and the line finished by next autumn.

Toronto to Parry Sound Betterments. Construction gangs between Toronto and Parry Sound, which have been engaged during the summer and autumn on betterments, are finishing up for the season. The work covered the putting in of concrete culverts, concrete abutments for permanent bridges, replacing temporary trestle structures; some new steel bridge superstructures; widening embankments and cuts; improving the drainage at the sides of the tracks; ballasting; enlarging existing buildings and putting up additional buildings. The ballasting has been done at a number of points, the track being raised and levelled up, a number of sags being taken out. A considerable mileage in all has been given a big coating of ballast, and at some points the track has been raised from 3 to 5 ft.

One of the larger bridge structures replaced is at the crossing of the Trent Valley Canal, where the old 120 ft. truss span, which was 28 ft. above water level, has been replaced by a 135 ft. through truss span 35 ft. above water level.

Surveys are reported to have been made at various points on the line between Beaverton and Washago, with a view to linking up the C.N.R. with the G.T.R., so as to do away with duplicate tracks, and provide for an interchange of traffic between the two lines. Some improvement along this line is reported to have been made in the vicinity of Orillia, and it is reported that further work is to be done which will have the effect of doing away with the C.N. R. stub line from Udney into Orillia. A connection between the two lines has been completed at Washago.

Trestle Fill near Parry Sound. — There has been completed on the line between Toronto and Capreol, Ont., a large trestle fill at mile 5.2 north of Parry Sound, the work on which was begun in 1918. The trestle, which was built in 1905, was 925 ft. long, with a maximum height of 60 ft. A 15 ft. concrete culvert was built to take care of the water, which required 1,539 yards of concrete, and a 15 ft. flat culvert under the roadway required 298 yards of concrete. The approximate quantity of material required to fill the trestle was 197,000 yards. The work was done by the Dominion Construction Co. under the superintendence of Resident Engineer McIlwain, of Parry Sound.

Westree to Kenogami Lake.—The construction of a railway to branch off from the C.N.R. at Westree, 64 miles west of Capreol, Ont., to Kenogami Lake, four miles west of Swastika, and on the Timiskaming & Northern Ontario Ry., is being advocated. The distance is approximately 80 miles, and the country through which it would pass is said to possess timber and mineral resources.

Hornepayne Terminal Buildings.— A locomotive house, machine shop and other buildings are under construction at Hornepayne, Ont.

Bridge at Beardmore.—A bridge is under construction near Beardmore, Ont., between Jellicoe and Orient Bay, the contractors being Campbell & Latimer.

Saskatchewan Branch Lines. — The following resolution was passed by the Saskatchewan Legislature Nov. 17:— "That, in the opinion of this Assembly, the Dominion authorities should be petitioned to appropriate at the earliest possible date sufficient sums of money to complete the Canadian National Rys. branch lines which are already projected into various sections of the province, and that they should be urged to continue construction work on such branch lines and complete them at the earliest possible date."

Oliver to St. Paul de Metis.—Grading was started in 1915 on a line from Oliver to St. Paul de Metis, about 125 miles, for 100 miles of which the Alberta Legislature guaranteed the bonds. It was reported to the Alberta Legislature in 1916 that 86.5 miles of grading had been completed, and in 1917 that grading on the whole 100 miles to Villette post office was completed. Track laying was started in Jan. 1917, and this, with bridge building, was proceeded with as far as Sucker Creek, 44 miles, where work was suspended. Track laying and other finishing up work was resumed during 1919, when track was laid for 100 miles, and about 20 miles of additional grading was done. A press report states that track was laid into St. Paul de Metis, Oct. 29, 1920. The railway enters the town on the northern side and a station is to be built a short distance north of the present business center on Main St.

An order passed by the Board of Railway Commissioners at the end of 1916, described the line as the Oliver-Battleford branch. This would suggest the continuation of the line easterly from St. Paul de Metis and its ultimate connection with the branch line from Battleford, now terminating at Turtleford, Sask.

Onoway to Whitecourt.—A branch line from Onoway to Sangudo, Alta., has been in operation for several years, and in 1913 grading was completed to Whitecombe, on the Athabasca River. Work was then abandoned and nothing was done until the summer of 1919, when the grades was gone over and track laying was resumed in Dec. 1919, with the result that the line was completed and put in operation as far as Robinson, 34.9 miles from Onoway, two miles beyond Sangudo, early this year. Some track was laid beyond Robinson, but the work was never finished, and owing to spring floods it got into very bad condition. A gang of men is reported to have been engaged during the past summer, lifting the track westward from Robinson's Crossing. Rails are reported to be on hand to lay track to mile 59, and some miles of grading are required to be completed, together with the repair or construction of 25 bridges of various sizes, none of them, however, being large structures, before the line is completed to Whitecourt. At this point access will be had to large gravel pits for ballast.

Vancouver Terminals.—A press report states that a contract has been let to the

Pacific Construction Co. for the completion of certain works in connection with the False Creek terminals, Vancouver, at an estimated cost of $350,000. The work is said to include the completion of the sea wall, about which there has been so much litigation; the removal of the Main St. bridge; filling in where required; the paving of Main St. to the sea wall; and other incidental work. Work was reported to have been started Nov. 1, and it is said that it will be finished early in 1921.

Vancouver Island Extensions.—A press report states that the Premier of British Columbia discussed with D. B. Hanna, President, C.N.R., recently, the question of the completion of the extension of the line from Cowichan Lake to Alberni and the Nitinat country. It is stated that United States owners of timber limits on Vancouver Island want to develop their properties and to establish mills at Alberni, and are only awaiting the extension of the railway in order to proceed with the work. The distance from Cowichan Lake to Alberni is about 30 miles. Grading on the section is reported to be practically completed. (Nov., pg. 610.)

## Traffic Orders by Board of Railway Commissioners.

### Free Transportation Authorized.

General order 317. Oct. 27. — Re application of Railway Association of Canada, on behalf of railway companies subject to the Board's jurisdiction, for authority to issue free transportation under sec. 345 of the Railway Act, 1919. Upon reading the application and considering what has been urged in support thereof, the Board orders that railway companies be permitted, until further order, to issue free transportation in the following instances, viz.: Agents of the Immigration and Colonization Departments, Governments of Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island, actually accompanying parties of immigrants from the Atlantic seaboard to points within their respective provinces, or when travelling to the seaboard for this purpose.

Railway Y.M.C.A. officers and employes, bona fide engaged in railway work, and dependent members of their families, over railway upon which railway branch of Y.M.C.A. at which employed is located; also such general officers of the Y.M.C.A. as are bona fide engaged in railway work.

Such officers and agents of the Salvation Army as are bona fide engaged in immigration work.

### Cumberland Coal & Railway.

30,284. Nov. 1.—Re application of Cumberland Railway & Coal Co., under sec. 334 of the Railway Act, 1919, for approval of its Standard Passenger Tariff, Supplement 1 to C.R.C. 5. Upon the report and recommendation of the Board's Chief Traffic Officer, it is ordered that the said tariff supplement be approved; the said tariff, with a reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

30,285. Nov. 1.—Re application of Cumberland Railway & Coal Co., under sec. 331 of the Railway Act, 1919, for approval of its Standard Freight Tariff, Supplement 1 to C.R.C. 10. Upon the report and recommendation of the Board's Chief Traffic Officer, it is ordered that the said tariff supplement be approved; the said tariff, with a reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

### Freight Rate for Fir Piles.

30,310. Nov. 10.—Re application of Great Lakes Dredging Co. for an order requiring that the cubical contents of shipments of quantities of fir piles, shipped by the company from British Columbia to Ojibway, Ont., be ascertained by the formula given for round timber in Canadian Freight Classification, and that the freight charges be based on an estimated weight of 3.2 lb. per foot board measure of the piles. Upon hearing the application at Ottawa, July 6, in the presence of counsel for the applicant company, and the Canadian Pacific, and Canadian National Railways, and upon reading the written submissions filed, the Board orders that the application be refused.

### Interswitching Toll on Lumber at Toronto.

30,312. Nov. 9.—Re complaint of R. Laidlaw Co., Toronto, that the C.P.R. exacts the team track interswitching toll of 2c. per 100 lb. on cars unloaded by it on the Toronto Power Co.'s private siding at North Toronto. Upon hearing the complaint at Toronto, Sept. 3rd, in the presence of representatives of the applicant, the C.P.R. and the Canadian Manufacturers' Associations, the Board declares that the said interswitching toll of 2c. per 100 lb. was wrongfully made; and the C.P.R. is authorized to repay to the applicant the excess amount charged and collected by it on cars consigned to the applicant and placed by the C.P.R. on the Toronto Power Co.'s private siding.

### Western Power Co.'s Freight Tariff.

30,303. Nov. 9.—Re application of Western Power Co. of Canada, under sec. 331 of the Railway Act, 1919, for approval of its Standard Freight Mileage Tariff C.R.C. B-11. Upon the report and recommendation of the Board's Chief Traffic Officer, it is ordered that the said tariff be approved; the said tariff, with a reference to this order, to be published in at least two consecutive weekly issues of The Canada Gazette.

### Live Stock Unloading and Reloading Charges.

30,339. Nov. 8.—Re complaint of Calgary Live Stock Exchange against charge made by the railway companies for unloading and reloading live stock. Upon hearing the complaint at Calgary, Alta., October 20, the complainant, and the Canadian Pacific, and Canadian National Railways being represented, the Board orders that the complaint be dismissed.

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**Mount Royal Tunnel & Terminal Co.'s Aassessment.**—Montreal assessors placed a value on the company's tunnel in the city for taxation purposes, which was upheld in the Recorder's Court, to which the company appealed. This decision was appealed to the Practice Court on two grounds, first that the tunnel was not subject to taxation, and secondly that an exaggerated value had been placed upon the property. Judgment was delivered Nov. 3, both appeals being dismissed with costs.

Newfoundland Railway Commission is reported to have started a motor truck service between the coalfields at South Branch, and the railway, the trucks carrying 5 tons of coal each.

## Transportation Interests Contributions to McGill University.

In connection with the centennial endowment campaign to raise $5,000,000 for McGill University, Montreal, E. W. Beatty, K.C., President, C.P.R., on behalf of the governors, was chairman of an inaugural dinner at Montreal on Nov. 13. Among the contributors to the fund are the following:—$250,000, C.P.R. Co.; $100,000, R. B. Angus, director, C.P.R.; Sir Herbert Holt, director, C.P.R.; $50,000, Senator L. C. Webster, President, Webster Steamship Co., etc.; $25,000, E. W. Beatty, K.C., President, C.P.R.; C. R. Hosmer, director, C.P.R.; Canadian Consolidated Rubber Co.; Canadian Explosives Ltd.; Lake of Woods Milling Co.; $15,000, Sir Vincent Meredith, director, C.P.R.; $10,000, Hon. C. C. Ballantyne, Minister of Marine and Fisheries, Lord Shaughnessy, Chairman, C.P.R.; Hugh Paton, President, Shedden Forwarding Co.; Canadian Fairbanks-Morse Co.; Steel Co. of Canada; Dominion Bridge Co.; Canadian Car & Foundry Co.; P. Lyall & Sons Co.; $5,000, Farquhar Robertson, member, Quebec Harbor Commission; Sir Montagu Allan; G. H. Duggan, President, Dominion Bridge Co.; Lady Van Horne; Miss Van Horne; Mrs. R. W. Reford; Northern Electric Co.; Sherwin Williams Co. of Canada; W. F. Angus, Vice President, Dominion Bridge Co.; $2,500, C. A. Barnard, K.C.. director, Canada Steamship Lines; R. W. Reford, President, Robert W. Reford Co.; W. I. Gear, Vice President, Robert W. Reford Co.; Dominion Wire Rope Co.; Canada Iron Foundries; Dominion Transport Co.; $1,000, Hon. W. J. Shaughnessy, director, C.P.R.; Sir Thomas Tait, President, Fredericton & Grand Lake Ry. & Coal Co.; A. D. MacTier, Vice President, Eastern Lines, C.P.R.; W. G. Ross, President, Montreal Harbor Commissioners; N. J. Holden, President, The Holden Co.; Canadian Ingersoll Rand Co.; Williams & Wilson Ltd.; A. Ramsay & Son Co..; George Hall Coal Co. of Canada; Fraser Brace & Co.

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**Unloading Coal on Team Tracks, etc.** The Railway Association of Canada has issued the following circular to railway companies:—Consideration has been given to action that should be taken with respect to practice of unloading coal, through hoppers of cars placed for delivery on team tracks and other delivery sidings. Generally, where this is permitted, switching operations are more or less seriously interfered with, resulting in delay to equipment. It is, therefore, recommended to member lines that they should instruct their agents not to permit coal to be unloaded through hoppers of cars on delivery tracks, unless consignees undertake to have the track cleared of coal, and hoppers closed prior to switching hour to be designated by local agent, and that record be kept of consignees who do not comply with this regulation, in order that further action may be taken, either generally or with individual receivers of coal, if this appears to be desirable.

The Interstate Commerce Commission announces it has approved a loan of $1,840,700 to the Erie Rd. to aid in reconstructing freight train equipment, in making improvements to existing equipment and in making additions and betterments to roadway and structures at estimated cost of $6,680,000. The company itself is required to finance about $4,840,000 to meet the Government loan.

# Canadian Railway Board of Adjustment No 1. Report.

The following report has been issued over the signatures of the Chairman, S. N. Berry, Vice President, Order of Railway Conductors, and the Vice Chairman, Geo. Hodge, Assistant to Vice President, Eastern Lines, C.P.R.:—

Two years having elapsed since the creation of Canadian Railway Board of Adjustment No. 1, it is deemed advisable to issue in condensed form an outline of the circumstances leading up to the formation of the Board and of its work during the two-year period.

On July 26, 1918, in response to a request made by the Dominion Government through the then Acting Minister of Labor, Senator G. D. Robertson, officials, representative of the various railways in Canada, and vice presidents and general chairmen from practically all lines in Canada for: the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen, the Order of Railway Conductors, the Brotherhood of Railroad Trainmen, the Order of Railroad Telegraphers, and the International Brotherhood of Maintenance of Way Employes, met at Montreal. Senator Robertson, acting as chairman, explained that the purpose for the call of the meeting was to arrive at an understanding as to the methods to be adopted for the application of the provisions of general order 27 of the Director General of the United States Railroad Administration, to Canadian railways, and also to consider and, if possible, arrange for some agreement whereby all differences arising between the railways and the employes concerned could be disposed of in a mutually satisfactory manner. General questions relative to the application of the provisions of general order 27, and other matters of mutual concern to the railway companies, their employes and the Canadian people were discussed, the general concensus of opinion, both from the viewpoint of those in charge of the railways and those representing the employes, being that some tribunal could and should be created to which all differences not otherwise disposed of between the railways and their employes could be referred for decision.

On July 27, 1918, a joint committee, representing the railways and the employes' organizations, met and prepared a tentative draft of a memorandum of agreement for the above purpose, such draft being in line with the terms of general order 13 of the U.S. Railroad Administration, under which Railway Board of Adjustment No. 1 at Washington had been instituted some months previously, the only difference in the draft as proposed being that the language was made applicable as a mutual agreement between the Canadian Railway War Board and the chief executives of the six organizations, parties to the proposed agreement. After the preparation of the memorandum of agreement, and its submission to and adoption by the representatives of the employes in conference, a few days adjournment was taken, in order that the Railway War Board might submit the tentative draft of the proposed memorandum of agreement to its member roads for consideration and endorsation, if approved, and so that the approval of the chief executives of the organizations might also be secured.

On Aug. 7, 1918, a further meeting was held between the Canadian Railway War Board's administrative executive and the vice presidents, or other representatives, of the organizations specified, and on the same date the following memorandum of agreement was adopted and signed by the Canadian Railway War Board and by the chief executives of the organizations, parties to the agreement.

"Memorandum of Agreement made between the Canadian Railway War Board, acting for the railways of Canada, members thereof, of the one part; and the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen, the Order of Railway Conductors, the Brotherhood of Railroad Trainmen, the Order of Railroad Telegraphers, and the International Brotherhood of Maintenance of Way Employes, acting for the said classes of employes on the said railways; of the other part. Whereas the parties hereto, in united desire to avoid disputes or misunderstandings which would tend to lessen the efficiency of transportation service in Canada during the war, have resolved upon the appointment of a board composed of members to be selected as hereinafter prescribed, which shall have full power and authority to determine all differences which may arise between any of the said railways and any of the classes of its employes above mentioned and which shall not be promptly adjusted between the officers and employes of the railway concerned; including the interpretation or application of wage schedules or agreements, and the application to Canadian railways of general order 27 of the Director General of the U.S. Railroad Administration; with authority to make such amendments or additions in line with such amendments or additions as may be made thereto for the railways in the U.S. as may be necessary, having due regard to the rights of the several classes of employes and of the railways respectively. Now therefore it is agreed by and between the parties as follows:

"1. There shall be at once created a board to be known as Canadian Railway Board of Adjustment No. 1, to consist of 12 members, six to be selected by the Canadian Railway War Board, and compensated by the railways, and six by the executive officers of the organizations of employes hereinbefore named, and compensated by such organizations.

"2. The Canadian Railway Board of Adjustment No. 1 shall meet in Montreal within 15 days after the selection of its members and select a chairman and a vice chairman, who shall be members of the board. The chairman or vice chairman will preside at meetings of the board, and both will be required to vote upon the adoption of all decisions by the board.

"3. The board shall meet regularly, at stated times each month, and continue in session until all matters before it are considered.

"4. Unless otherwise mutually agreed, all meetings of the Board shall be held in Montreal; provided, that the board shall have authority to empower two or more of its members to conduct hearings and pass upon controversies when properly submitted at any place designated by the board; provided, further, that such division of the board will not be authorized to make final decision. All decisions shall be made, approved or ratified by the board as herein provided.

"5. Should a vacancy occur in the board for any cause such vacancy shall be immediately filled by the same appointive authority which made the original selection.

"6. The Canadian Railway Board of Adjustment No. 1 shall render decisions on all matters of controversy arising from interpretations of wage agreements and other matters in dispute as provided in the preamble hereof, and when properly submitted to the board.

"7. Wages and hours established by general order 27 of the Director General of the U.S. Railroad Administration and amendments thereto shall be incorporated into existing agreements on the several railways, and should differences arise between the management and the employes on any of the railways as to such incorporation, such questions of differences shall be decided by the Canadian Railway Board of Adjustment No. 1 when properly presented thereto.

"8. Personal grievances or controversies arising under interpretation of wage agreements, and all other disputes arising or now properly pending between officials of a railway and its employes covered by this understanding will be handled in their usual manner by general committees of the employes up to and including the chief operating officer of the railway (or some one officially designated by him) when if an agreement is not reached, the chairman of the general committee of employes may refer the matter to the executive officer of the organization concerned, and if the contention of the employes' committee is approved by such executive officer, then the chief operating officer of the railway and the executive officer of the organization concerned shall refer the matter, with all supporting papers, to Canadian Railway Board of Adjustment No. 1, which board shall promptly hear and decide the case, giving due notice to the chief operating officer of the railway interested and to the executive officer of the organization concerned of the time set for hearing.

"9. No matter will be considered by the Canadian Railway Board of Adjustment No. 1 unless officially referred to it in the manner herein prescribed, provided, however, that no case having origin in circumstances occurring prior to the date hereof shall be referred to the board except those arising out of the application of the general order 27, or arising out of disputes properly pending at the date of this agreement as mentioned in clause 8.

"10. In hearings before the Canadian Railway Board of Adjustment No. 1 in matters properly submitted for its consideration, the railway shall be represented by such person or persons as may be designated by the chief operating officer, and the employes shall be represented by such person or persons as may be designated by the executive officers of the organizations concerned.

"11. All clerical and office expenses will be borne equally by the Canadian Railway War Board and the organizations above mentioned. The railway directly concerned and the organization involved in a hearing will, respectively, assume any expense incurred in presenting a case.

"12. In each case an effort should be made to present a joint concrete statement of the facts as to any controversies, but the board is fully authorized to require information in addition to the concrete statement of facts, and may call upon the chief operating officer of the

organization concerned for additional evidence, either oral or written.

"13. All decisions of Canadian Railway Board of Adjustment No. 1 shall be approved by a majority vote of all members of the board.

"14. After a matter has been considered by the board, and in the event a majority vote cannot be obtained, then any six members of the board may elect to refer the matter upon which no decision has been reached to a referee to be unanimously agreed upon by the board, and in failure to agree, application shall be made to the Governor-General-in-council for appointment of a referee, whose decision shall be final.

"15. The Canadian Railway Board of Adjustment No. 1 shall keep a complete and accurate record of all matters submitted for its consideration and of all decisions made by the board.

"16. A report of all cases decided, including the decisions, will be filed with the Canadian Railway War Board, and with the chief operating officer of the railway affected and with the executive officer of the organization concerned.

"17. The Canadian Railway War Board further agrees that the Canadian Railway Board of Adjustment No. 1 shall have like authority to determine differences between any of the railways represented herein and any other classes of employes of such railways who may request and consent to submitting differences to the Canadian Railway Board of Adjustment No. 1, and to agree that the decision of the said board shall be final.

"18. This agreement shall remain in full force and effect during the period of the present war, and thereafter, unless the Canadian Railway War Board, on the one hand, as representing the railways, or a majority of the executive officers of the organizations, on the other hand, as representing the employes, shall desire to terminate the same, which can, in these circumstances, be done on 30 days formal notice.

The memorandum of agreement was signed by the following:—The Canadian Railway War Board, U. E. Gillen, Chairman, by S. R. Payne, W. M. Neal, General Secretary. The Brotherhood of Locomotive Engineers, W. S. Stone, Grand Chief Engineer, by Ash Kennedy, Assistant Grand Chief Engineer. The Brotherhood of Locomotive Firemen and Enginemen, Timothy Shea, Acting President, by Geo. K. Wark, Vice President. The Order of Railway Conductors, A. B. Garretson, President, by S. N. Berry, Vice President. The Brotherhood of Railroad Trainmen, W. G. Lee, President, by James Murdock, Vice President. The Brotherhood of Railroad Telegraphers, J. M. Mein, Deputy President. The International Brotherhood of Maintenance of Way Employes, A. E. Barker, President, by W. V. Turnbull, Vice President.

Pursuant to the terms of the agreement the following persons were appointed to the Board:—S. N. Berry, Vice President, Order of Railway Conductors; F. P. Brady, General Manager, Eastern Lines, Canadian National Rys.; Wm. Dorey, General Chairman, International Brotherhood Maintenance of Way Employes; U. E. Gillen, Vice President, G. T.R. System; Geo. Hodge, Assistant to Vice President, Eastern Lines, C.P.R.; A. J. Hills, Assistant to President, Canadian National Rys.; S. J. Hungerford, Assistant Vice President, Canadian National Rys.; Ash Kennedy, Assistant Grand Chief Engineer, Brotherhood of Locomotive Engineers; A. D. MacTier, Vice President Eastern Lines, C.P.R.; J. M. Mein, Deputy President, Order of Railroad Telegraphers; Jas. Murdock, Vice President, Brotherhood of Railroad Trainmen; G. K. Wark, Vice President, Brotherhood of Locomotive Firemen and Enginemen.

Messrs. Gillen and Hungerford have since resigned from the board and have been replaced by G. C. Jones, Assistant to President, G.T.R., and W. H. Sample, Superintendent Motive Power and Car Department, G.T.R.

During the two years ended Aug. 31, 1920, the board has been in session 86 days to deal with cases submitted to it.

It is apparent that misunderstanding still exists in the minds of some regarding the position of this board, as independent of the Railway Association of Canada (formerly the Canadian Railway War Board), although this matter was dealt with in a circular issued by the board, on Oct. 17th, 1918, reading in part as follows:—"It seems desirable to point out at this time that the body known as Canadian Railway Board of Adjustment No. 1 should not in any way be confused with the Canadian Railway War Board, which is an association of the Canadian railways through which joint action is taken in connection with important transportation matters affecting their operation. It is composed of railway officers who represent and act for practically all lines in Canada. Canadian Railway Board of Adjustment No. 1 is a body of 12, composed of six railway officers and six representatives of the following railway brotherhoods, viz.: Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen and Enginemen, Order of Railway Conductors, Brotherhood of Railroad Trainmen, Order of Railroad Telegraphers, International Brotherhood of Maintenance of Way Employes. As the War Board takes joint action for all railways, the representatives of the railways on Board of Adjustment No. 1 were selected by the War Board from the official staff of the railways. The board having been so constituted, no actual connection remained between the War Board and Canadian Railway Board of Adjustment No. 1. The function of Board of Adjustment No. 1 is to settle all disputes that arise between the railways and their employes who are members of the Brotherhoods named."

Appended to the report is a condensed statement of the 87 cases which have come before the board and of the decisions rendered. The board's receipts from Aug. 7, 1918, to Aug. 31, 1920, were $17,868.98, half of which was paid by the railways and half by the employes organizations. The expenditures were $15,700.47, the principal items being salaries to office staff, $7,992.29; rent and taxes, $2,651.05; printing, $1,943.07; furniture, $1,345.25.

The board's Secretary is R. Chapelle, and its office is at 263 St. James Street, Montreal.

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**C.P.R. Discontinuing use of Fuel Oil.** On account of the uncertainty of oil supply, the C.P.R. is converting all its oil burning locomotives in British Columbia back to coal, and the same action is being taken in connection with its steamships in the B.C. Coast Service, and also in the hotels, which are now using oil.

The advertising in connection with the train service on the Newfoundland Ry. and the coastal steamship services is being done in the name of the Government Railway Commission, the title of the Reid Newfoundland Co. not being used.

## Grand Trunk Railway Construction, Betterments, Etc.

**Ottawa Crosstown Tracks.**—Hon. A. L. Sifton, acting Minister of Railways, is reported to have promised favorable consideration of a request for the removal of the G.T.R. crosstown tracks in Ottawa. It is expected that an engineer of the Railways Department will be authorized to look into the matter.

**Hamilton Street Crossings.**—A press report states that the railway crossings of a number of street in Hamilton, Ont., are to be repaired, that at Canon St. to be the first to be taken in hand.

**Brantford Subway.** — A press report states that it is estimated that the cost of the proposed subway under the G.T.R. at St. Paul's Ave., Brantford, Ont., already approved by the ratepayers, will be about double the original estimate.

**East London Interswitching Track.**—A press report states that track will be laid on a new piece of line, over 900 ft. long at East London, from the interswitch to the Stratford line.

**London Subway and Track Eelevation.** G. A. Mountain, Chief Engineer, Board of Railway Commissioners, was authorized recently to visit London, Ont., to confer with the city council with regard to the proposed subway under the G.T.R. tracks at Rectory St. This piece of work is part of the plant for the elevation of the G.T.R. tracks in the city, and the elimination of level crossings.

**Detroit Coaling Plant.**—A press report states that a contract has been let for the installation of an electric elevating equipment in the coaling station at Milwaukee Jct. yards, Detroit, Mich.

**Port Huron-Chicago Improvements.**—Windsor, Ont., press report of Nov. 14 stated that improvements estimated to cost $10,000,000 were to be made on the line between Port Huron, Mich., and Chicago, Ill. G. A. Bell, C.M.G., Deputy Minister of Railways, Ottawa, is reported to have said Nov. 15 that no such expenditure was contemplated, adding that some day a lot of money would be needed for betterment and terminals on the line between the points mentioned.

**Kalamazoo Locomotive House.** — A press report states that it is contemplated to start construction in the spring on a frame locomotive house at Kalamazoo, Mich. (Nov., pg. 607.)

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**Roumanian Locomotive Orders.**—L. D. Wilgress, Canadian Trade Commissioner, writes from Bucharest as follows:—Orders have been placed or are pending for the supply of several hundred new locomotives to Roumania. In view of the great deficiency of railway transport, this is considered the most urgent necessity of the country at present. The economic life of Roumania has been practically paralysed owing to the difficulties of transporting the exportable products. The first contract for new locomotives was placed last April with the Baldwin Locomotive Co., Philadelphia, for 50 consolidation locomotives at $65,000 each, payment to be effected in either dollars or oil products. The first lot of these locomotives is expected to arrive in the country shortly. Another order was placed lately with Czecho-Slovakia for 80 new locomotives and the repair of 500 old ones. Five hundred are also to be repaired in Austria. The representative of Canadian interests has been in the country for several months negotiating for the supply of locomotives to Roumania.

## Canadian Pacific Railway Construction, Betterments, Etc.

St. John River Bridge.—The Board of Railway Commissioners is reported to have recently fixed Nov. 25 as the date for hearing representations from interested parties as to the height of the bridge over the St. John River at St. John, N.B., above high water mark. The C.P.R. proposed to erect the bridge at the same height as the existing bridge, and the city council and marine interests asked that it be provided with the same clearance as the highway bridge alongside.

The construction of the substructure for the bridge is expected to have been completed during December by the Foundation Co., Montreal. The work is reported to have involved the excavation of 11,000 cu. yd. of rock, 4,000 cu. yd. of earth and the setting of 800 cu. yd. of gravel in concrete, as well as removing a heavy rock cut for the purpose of straightening out the line at the east approach of the bridge. The 10 concrete masonry piers on land, and the two granite piers in the river are reported to be well advanced to completion.

St. John Street Crossing.—The question of the elimination of the level crossing at Douglas Ave., St. John, N.B., came before the City Council in committee Nov. 4. The City Engineer is said to have reported that an overhead crossing would cost, including expropriation, from $100,000 to $110,000. A suggestion was made that the question of a viaduct should also be considered, and the Mayor stated that the whole matter could be taken up with the Board of Railway Commissioners.

Ottawa West Station. — The Ottawa Board of Control has been advised that the permanent station at Ottawa West will be at Victoria Ave., in conformity with the Board of Railway Commissioners' order.

Timiskaming, Que., District.—We are officially advised that a contract has been signed by the Canadian Pacific Ry., Quebec Government, and the Interprovincial & James Bay Ry. Co. for the construction of a line as authorized by the statutes of 1920, chap. 2, sec. 1, par F, which provided for a grant of $1,600 a mile, in addition to 4,000 acres of land a mile, authorized in 1919, towards the construction of a line from near Timiskaming or Kipawa to the Quinze River via Ville Marie, 66 miles, and a further subsidy of $6,400 a mile in case the company does not receive a subsidy of the same amount from the Dominion Government. The contract provides that construction shall be started before Mar. 17, 1921, and completed subject to the terms fixed by the Government, under the statutes of 1912, chap. 5, sec. 9.

Under the Interprovincial & James Bay Ry. Co.'s charter, the C.P.R. graded and laid track on a 10 mile stretch of line from Kipawa to Mercier Y, some years ago, and completed surveys for its extension towards Quinze River. These surveys were resumed early last summer in order to locate the line to the proposed terminus at Quinze River rapids.

The Board of Railway Commissioners has passed the following orders recently: 30,420, Oct. 22.—Approving Interprovincial & James Bay Ry. revised route map of general location from terminus of its line already built, at mile 10, to mile 70, near the Quinze River. 30,292. Nov. 3. Authorizing Chief Commissioner to approve route map showing general location of Interprovincial & James Bay Ry. branch line from mile 48.2 to Ville Marie, 8 miles.

Acme to Drumheller, Alta.—A press report states that it is intended to complete the grading of the line along the Kneehill between Acme and Drumheller, Alta., next spring. D. C. Coleman, Vice President, Western Lines, who was in Calgary Nov. 15, is reported to have said that on the completion of the line to Drumheller it will be continued down the north side of the Red Deer River to connect with the Bassano-Empress line at either Duchess or Rosemary. (Nov., pg. 594.)

## United States Railway Notes.

The Bureau of Railway Economics announces that the net operating income for September of class 1 U.S. railways fell approximately $29,343,000, or 26.9%, short of amount expected under increased rates. This is based on reports from 207 railways of that class operating 237,899 miles.

The Interstate Commerce Commission announces it has approved a loan of $9,630,000 to the New York, New Haven & Hartford Rd. to aid the carrier in providing itself with equipment, and additions and betterments to way and structures, at a total estimated cost of $13,525,000.

The Railroad Information Bureau, New York, has announced that the average cost of running freight trains one mile as indicated by comparison of principal items of expense selected by Interstate Commerce Commission for statistical purposes, was 23.2% greater in July, 1920, than in July, 1919. The total of selected accounts was $1.89 a mile this year and $1.54 last year.

The Interstate Commerce Commission on Nov. 18 ordered railways in New York State to establish passenger and baggage rates on intrastate traffic, confrming to advanced interstate schedules, in its first decision on the right of the Federal Government under the Transportation Act to require railway rates within a state to correspond to higher levels of interstate tariffs. Similar proceedings are pending affecting more than half the states in the Union.

As a result of special drives to speed up the release and return of freight equipment, the New York, New Haven & Hartford Rd. to Oct. 17 reports that 15,333 loaded cars were placed, and 19,710 empty cars picked up. The railroad's plan of operation included the running of way freights, supported by extra switching service on Sundays, taking empties from industrial sidings and freight houses, for movement to connecting lines, and placing cars for unloading on Mondays. On many Sundays the number of loaded cars placed exceeded 1,000.

Reports of passenger train operation on the Pennsylvania Rd. for the past six months show that for every 10,000 miles run by locomotives, there were total delays to trains aggregating 1 hr. 7 min., due to locomotive failures, something wrong happening to the machinery of a locomotive. Similarly for every 10,000 passenger car miles, the total delays to trains due to car trouble, such as a hot box amounted to 3.9 min. In every 10,000 miles operated by passenger locomotives there was an average of not quite three delays to passenger trains because of locomotive trouble. The total number of minutes lost by all of the 129,745 passenger trains on the whole railway because of locomotive and car trouble, in September, was 53,183, compared with 60,792 in April, when 106,508 trains were operated.

Reports compiled by the American Railway Association's Car Service Division show that progress is being made in the return of freight cars to the home lines. On Oct. 1, 30% of the freight cars were on the lines of the owning road, a gain of 2% from Sept. 1. On Mar. 1, when the railways were relinquished by the U.S. Government, only 2.19% of all the cars were on their home lines, as compared with 44% at the end of 1917, when the railways were taken over. Progress is noted in all districts and with all types of equipment except refrigerator cars. The return of freight cars to their owning lines as rapidly as it can be done consistently with the demands of commerce is one of the objects set for themselves by the railways since their return to private management. In general the railways have provided themselves with the types of cars best suited for the traffic of their respective territories and car repairs can be more satisfactorily made on the home roads. Therefore, relocation is important in the programme of providing more and better service to the public.

## Grand Trunk Railway Stock Arbitration.

The three arbitrators, Sir Walter Cassells, Sir Thomas White and W. H. Taft, who will fix the price to be paid by the Dominion for certain G.T.R. stocks, in connection with the taking over of the line by the Government, met in Montreal Nov. 5. The G.T.R. was represented by its counsel and F. H. Chrysler, K.C., of Ottawa, appeared for the Government, with other counsel. After the meeting Sir Walter Cassels issued a statement in which he said:—"The meeting was held for the purpose of determining definitely the date at which the presentation of the case should begin. Counsel for the G.T.R. applied to the board to fix the date as Feb. 1 next. Counsel for the Government demurred. The G.T.R. counsel then made it clear that they had organized a technical staff of engineers and others when the statute was passed, which had been engaged continuously since that time in preparing the necessary evidence, as to the valuation of the physical assets of the system, and that their leading expert, Mr. Berry, reported that the case could not be ready with their expert evidence until Jan. 1; they said that they had not only been engaged in preparing their own case, but a considerable time had been taken in furnishing matter for the Government upon enquiries directed from time to time. Counsel said as soon as the case was prepared they desired a month in which to analyze the evidence, in order that they might present it in as clear a way as possible and thus save the time of the board. After some further discussion the board granted the application and fixed the time for the beginning of the presentation of the case on Feb. 1, 1921."

It is said that after the arbitrators' sittings there was a meeting of all the counsel engaged on the arbitration to discuss methods of procedure, etc.

# Mainly About Railway People Throughout Canada.

Sir James B. Bell. Chief Engineer, London, Brighton & South Coast Ry., died in England recently.

M. Roy Benson, who has been appointed General Foreman, Michigan Central Rd., St. Thomas, Ont., was born there, May 31, 1899, and entered railway service in 1906, since when he has been, to 1910, apprentice, Michigan Central Rd. shops, St. Thomas, Ont.; 1910 to 1912, mechanic in various automobile shops in Detroit, Mich.; 1912 to 1914, machinist and leading hand, C.P.R., at various points in Ontario; 1914 to Oct. 1920, successively, piece work inspector, erecting shop foreman, general piece work inspector, general locomotive house foreman, and assistant general foreman, Michigan Central Rd., St. Thomas, Ont.

Thomas Harrison Best, whose appointment as Assistant to Treasurer, Canadian Northern Ry. System, and Grand Trunk Pacific Ry., Toronto, was announced in our last issue, was born at Toronto, Oct. 6, 1893, and entered transportation service in July 1912, since when he has been, to Nov. 1913, clerk, Treasurer's office, Canadian Northern Ry., Toronto; Nov. 1913 to Oct. 1915, cashier, Canadian Northern Steamships Ltd., Montreal; Oct. 1915 to Jan. 1918, clerk, Treasurer's office, Canadian Northern Ry., Toronto; Jan. 1918 to Sept. 1920, chief clerk, Treasurer's office, Canadian Northern Ry. System, Toronto.

Lt.-Col. Frank Bond, who died at Montreal, Nov. 21, aged 76, was father of Major F. L. C. Bond, Chief Engineer, G. T. R., there.

W. Borbridge, Master Mechanic, Montreal Division, Quebec District, C.P.R., Montreal, was presented with a purse of money, Nov. 10, by a number of friends, on the occasion of his retirement on superannuation. He was born at St. Johns, Que., Apr. 12, 1855, and entered railway service in 1872, since when he has been, to 1874, brakeman, Brockville & Ottawa Ry. and Canada Central Ry.; 1874 to 1879, fireman, and fitter in locomotive house, same roads; 1879 to 1898, locomotive man, same roads, and their successor, the C.P.R.; 1898 to May 1907, Road Foreman of Locomotives, C.P.R.; May 1907 to Mar. 1910, District Master Mechanic, C.P.R., Ottawa, Ont.; Mar. 1910 to his retirement, Master Mechanic, District 3, Quebec Division; Master Mechanic, District 2 and Montreal Terminals, Quebec Division; and Master Mechanic, Montreal Division, Quebec District, C.P.R., Montreal.

F. P. Brady, who has been appointed Assistant to the Executive, Canadian National Rys., Toronto, was born at Haverhill, N.H., June 22, 1853, and entered railway service 1869 as station baggagemaster Passumpsic Ry., since when he has been consecutively: 1873 to 1880, train dispatcher Northern Rd., at Concord, N.H.; 1880 to 1888, Chief Train Dispatcher Southeastern Ry., at Richford, Vt.; 1888 to 1889, Trainmaster, C.P.R.; 1889 to 1898, Assistant Superintendent, C.P.R.; 1898 to May, 1901, Superintendent, C.P.R.. at Smiths Falls, Ont.; May 1901 to Sept. 1902, Superintendent districts 10 and 11, C.P.R., at Toronto; Sept. 1902 to May, 1903, Superintendent district 19, C.P.R., at Fort William, Ont.; June 1, 1903 to Feb. 1904, Assistant General Superintendent, Central Division, C.P.R., Winnipeg, Man.; Feb. 1904 to Sept. 16, 1908, General Superintendent, Lake Superior Division, C.P.R., North Bay, Ont.; May 1, 1908 to June 1909, Member of Canadian Government Railways Board of Management; June, 1909, to June 1913, also General Superintendent, Canadian Government Railways, Moncton, N.B.; June 1913, on the abolition of the Canadian Government Railways Managing Board, to May 1915, General Superintendent, Canadian Government Rys., Moncton, N.B.; May, 1915, to June 1, 1917, General Superintendent, Canadian Government Rys., Cochrane, Ont.; June 1, 1917, to Dec. 1, 1918, General Manager, Western Lines, Canadian Government Rys., Winnipeg, Man.; Dec. 1, 1918 to Nov. 1920, General Manager, Eastern Lines, Canadian Northern Ry., and latterly Canadian National Rys., Montreal.

Charles Edward Brooks, who has been appointed Mechanical Assistant, Locomotive Department, to Vice President, Operation and Maintenance, Canadian National Rys., Toronto, was born at Constantinople, Turkey, July 3, 1886, and entered railway service in 1905, since when he has been, to 1908, apprentice, G.T.R., Montreal, 1908 to 1914, machinist, draftsman, and Locomotive Foreman, Grand Trunk Pacific Ry., successively, Portage la Prairie and Rivers, Man., Watrous and Regina, Sask., Wainwright and Edmonton,, Alta.; 1914 to May 1915, General Foreman, G.T.P.R., Transcona, Man.; May 1915 to Oct. 1, 1920, Superintendent of Motive Power, G.T.P.R., Transcona.

J. R. Cameron,
Assistant General Manager, Lines West of Edmonton, Alta., Canadian National Railways.

C. B. Brown, Engineering Assistant to Vice President, Operation and Maintenance, Canadian National Rys., Toronto, was presented with a silver tea service by the engineering staff at Moncton, N.B., Nov. 18, on leaving there, where he was Chief Engineer, for Toronto.

G. B. Burpee, General Agent, Passenger Department, C.P.R., Cleveland, Ohio, was married at St. John, N.B., Nov. 11, to Miss E. Kimball.

Lady Bury, wife of Sir Geo. Bury, formerly Vice President, C.P.R., is spending some time in Montreal.

Joseph Robert Cameron, whose appointment as Assistant General Manager, Western Lines, Canadian National Rys., Vancouver, B.C., was announced in our last issue, was born at Truro, N. S., Nov. 5, 1865, and educated there. He entered railway service in 1882, since when he has been, to 1885, in C.P.R. service in Winnipeg; 1886 to 1901, in Northern Pacific Ry. service at Winnipeg, and Grand Forks, N.D.; 1902 to 1906, Superintendent of lines under construction, Canadian Northern Ry., Winnipeg; 1906 to 1908, Superintendent, C.N.R., Port Arthur, Ont.; 1908 to 1911, General Superintendent, Western Lines, C.N.R., Winnipeg; 1911 to Aug. 31, 1920, Assistant General Manager, Western Lines, Canadian National Rys., Winnipeg.

D. R. Campbell, whose appointment in charge of Construction Department, Western Lines, Canadian National Rys., Winnipeg, was announced in our last issue, was presented with a purse of money and an engraved gold match case by the local staff, Nov. 10, on leaving Vancouver, where he was General Superintendent, Pacific Division, C.N.R.

Ronald Chisholm, whose appointment as Inspector of Agencies, Western Lines, Canadian National Rys., and Grand Trunk Pacific Ry., Edmonton, Alta., and east, at Winnipeg, was announced in our last issue, was born at Georgeville, N.S., Feb. 25, 1871, and entered C.P.R. service Dec. 1, 1891, resigning therefrom July 3, 1918, when he entered Canadian National Rys. service and was Inspector of Agencies, Western Lines, Winnipeg.

E. J. Chamberlin, of Ottawa, formerly President, G.T.R., and G.T. Pacific Ry., and Mrs. Chamberlin, will spend the winter in the southern states.

D. C. Coleman, Vice President, C.P.R. Western Lines, returned to Winnipeg recently after a trip of inspection over the company's lines between Winnipeg and the Pacific coast. He was accompanied on the trip by A. Kelley, G. F. Galt, and G. W. Allan, M.P., of Winnipeg, and Mayor Whitmore, of Regina, Sask.

W. G. Connolly, whose appointment as City Passenger Agent, Canadian National Rys. and Grand Trunk Pacific Ry., Vancouver, B.C., was announced in a recent issue, was born at McAdam Jct., N.B., May 28, 1889, and entered railway service July 1, 1906, since when he has been, to Mar. 9, 1909, stenographer and ticket clerk, G.T.R., Ottawa, Ont.; Mar. 9, 1909, to June 1, 1910, ticket clerk, G. T.R., Montreal; June 1, 1910, to Nov. 1, 1914, Assistant City Passenger and Ticket Agent, Grand Trunk Pacific Ry., Vancouver, B.C.; Nov. 1, 1914, to June 1, 1915, acting City Passenger and Ticket Agent, G.T.P.R., Vancouver, B.C.; June 1, 1915, to Sept. 10, 1920, City Passenger and Ticket Agent, G.T.P.R., Vancouver, B.C.

Mrs. John Crerar, who died at Hamilton, Ont., Nov. 22, after a short illness, was the mother of Lady George McLaren Brown, wife of the General European Manager, C.P.R., London, Eng.

David Crombie, whose appointment as Transportation Assistant to Vice President, Operation and Maintenance, Canadian National Rys., Toronto, was an-

nounced in our last issue, was born at Hamilton, Ont., May 13, 1864, and entered railway service in June, 1882, since when he has been, to 1887, telegraph operator, G.T.R.; 1887 to 1889, ticket agent, same road, Chatham, Ont.; 1889 to 1890, dispatcher, same road, London, Ont.; 1890 to 1892, dispatcher, Flint and Pere Marquette Rd., Saginaw, Mich.; 1892 to 1894, car distributor, same road; 1894 to Jan. 1, 1900, Superintendent of Car Service, same road; Jan. 1 to July 1900, Superintendent of Car Service, Pere Marquette Rd., Detroit, Mich.; July 1900 to 1893, Superintendent of Transportation, same road; 1903 to Feb. 1907, in private business; Feb. to Oct. 1907, Master of Transportation, Middle Division, G.T.R., London, Ont.; Oct. 1907 to Nov. 22, 1910, Assistant to General Transportation Manager, same road, Montreal; Nov. 22, 1910, to Jan. 14, 1913, Assistant to Vice President, Transportation, Maintenance and Construction, same road, Montreal; Jan. 14 to Aug. 1, 1913, General Superintendent of Transportation, same road, Montreal; Aug. 1913 to May 1914, Inspector of Transportation, Pere Marquette Rd., Detroit, Mich.; May 1914 to Nov. 1916, Inspector of Transportation, Canadian Northern Ry., Toronto; Nov. 1916 to Nov. 1, 1920, General Superintendent, Ontario District, Canadian National Rys., Toronto.

M. C. **Dunn**, who has been appointed City Passenger Agent, Canadian National Rys. and City Freight Agent, Canadian National-Grand Trunk Rys., Kingston, Ont., was born at Enterprise, Ont., Dec. 16, 1864, and entered railway service in Oct. 1888, since when he has been, to Mar. 1912, agent and operator, Bay of Quinte Ry., Yarker, Ont.; Mar. 1912 to Oct. 1920, City Freight and Passenger Agent, Canadian Northern Ry., latterly, Canadian National Rys., Kingston, Ont.

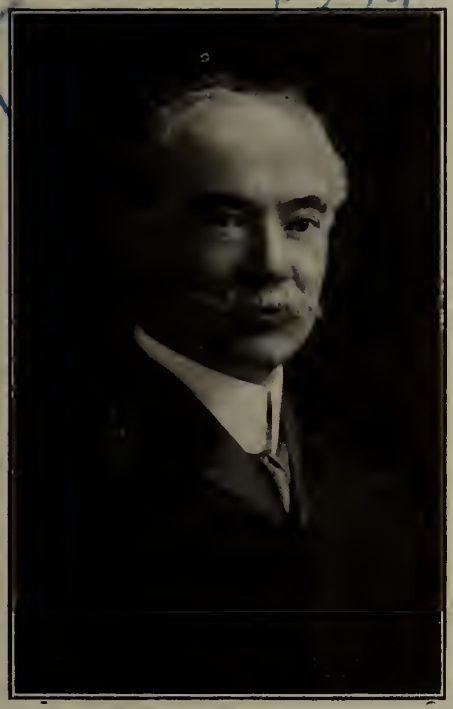
W. H. **Ellis**, formerly Dean, Applied Science Faculty, Toronto University, who died in Muskoka, Aug. 23, left an estate valued at $43,348, to his widow.

Frank C. **Foy**, who has been appointed Canadian Passenger Agent, New York Central Rd., Toronto, was born there, July 5, 1881, and entered transportation service in Oct. 1900, since when he has been, to Sept. 1902, stenographer, Niagara Navigation Co., Toronto; Sept. 1902 to Oct. 1903, stenographer, New York Central Rd., Toronto; Oct. 1903 to Oct. 1908, City Ticket Agent, N.Y.C.R., Toronto; Oct. 1908 to June 1918, Canadian Passenger Agent, N.Y.C.R., Toronto; June to Sept. 1918, Passenger Agent, N. Y.C.R., Buffalo, N.Y.; Sept. to Dec. 1918, Passenger Agent, N.Y.C.R., Albany, N. Y.; Dec. 1918 to Sept. 1919, acting General Agent, N.Y.C.R., Utica, N.Y.; Sept. 1919 to Nov. 1, 1920, City Passenger Agent, N.Y.C.R., New York, N.Y.

Major Robt. Douglas **Galbraith**, M.C., C.E., son of the late John Galbraith, sometime Dean Applied Science Faculty, Toronto University, who died in Toronto, Sept. 12, as a result of war injuries, left an estate valued at $15,359.

Thomas **Ginnelly**, whose appointment as Assistant Freight Claims Agent, C.N. R. Western Lines, Grand Trunk Pacific Ry., and Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C., was announced in our last issue, was born in Ireland, Feb. 11, 1880, and entered transportation service Nov. 18, 1898, since when he has been, to Oct. 1900, clerk, Local Freight Department, Midland & Great Western Ry., Sligo, Ireland; Oct. 1900 to Sept. 1901, clerk, Passenger Department, same road, Clanmorris, Ireland; Sept. 1901 to June 1902, clerk, Local Freight Department, same road, Ballinasloe, Ireland; June to Dec. 1902, clerk, Local Freight Department, same road, Westport, Ireland; Dec. 1902 to July 1903, assistant local agent, same road, Ballisadare, Ireland; July 1903 to Mar. 1909, Assistant Superintendent, same road, Sligo, Ireland; Mar. 1909 to June 1910, clerk, Freight Claims Department, C.P. R., Winnipeg; June 1910 to 1914, clerk, Freight Claims Department, Canadian Northern Ry., Winnipeg; 1914 to Oct. 1920, chief clerk, Freight Claims Department, Canadian Northern Ry., latterly Canadian National Rys., Winnipeg.

A. S. **Goodeve**, member of the Board of Railway Commissioners for Canada, died at the Toronto General Hospital, Nov. 22, following an operation which he underwent on Nov. 11. He was born at Guelph, Ont., Dec. 15, 1860, and educated at the public and high schools there. He was a graduate and medallist of the Ontario College of Pharmacy, and was in business as a druggist at Chesley, Bruce County, Ont., from 1884 to



A. S. Goodeve,
Member, Board of Railway Commissioners for Canada.

1896. He went to Rossland, B.C., in 1896, in the same business, and was for three years a member of the city council, and Mayor in 1899-1900. In 1902 he was Provincial Secretary for British Columbia; 1909-1910, member of the B. C. Forestry Commission; wes elected to the Dominion Parliament for Kootenay in 1908, and was appointed Conservative western whip, and assistant chief whip in 1911. He was appointed a member of the Board of Railway Commissioners for Canada, in Apr. 1912. The funeral took place at Ottawa, Nov. 24.

Frederick Passmore **Gutelius**, Vice President and General Manager, Delaware Hudson Rd., Albany, N.Y., who has been retained by the Ontario Government Commission enquiring into the proposed hydro radial railway system, arrived in Toronto, Nov. 24, was born at Mifflinburg, Pa., Dec. 21, 1864, and graduated from Lafayette College as civil engineer in 1887. He entered railway service in 1888, since when he has been, to 1892, Assistant Engineer and Assistant Supervisor, Pennsylvania Rd., Pittsburg, Pa.; 1885 to 1898, General Superintendent, Columbia & Western Ry.; 1898 to 1900, Superintendent, C.P.R., Nelson, B.C.; 1900 to 1902, in various positions in Engineering Department, C.P.R.; 1902 to Mar., 1906, Engineer, Maintenance of Way, C.P.R., Montreal; Mar. 1906 to Sept. 15, 1908, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; Sept. 15, 1908, to Dec. 30, 1910, General Supintendent, Lake Superior Division, C.P. R., North Bay, Ont.; Dec. 30, 1910, to Jan. 1913, General Superintendent, Eastern Division, C.P.R., Montreal; Jan. 1912 to Apr. 30 1913, one of the commissioners investigating expenditures and other matters in connection with the construction of the National Transcontinental Ry. On the abolition of the Government Railways Managing Board in May, 1913, he was appointed General Manager, Canadian Government Railways, with all powers usually vested in the executive of railway corporations, reporting to the Minister of Railways and Canals. He resigned in May 1917, on his appointment as Vice President, Delaware & Hudson Co., Albany, N.Y., and on the taking over of the management of the U.S. railways by the U.S. Railroad Administration, during the war, he was appointed Federal Manager, Delaware & Hudson Rd., and on the relinquishment of that control, Mar. 1, was appointed Vice President and General Manager of that road and its allied properties.

Miss Madeleine M. **Hall**, daughter of Grant Hall, Vice President, C.P.R., is announced as being engaged to H. S. Day, of Montreal.

Geo. **Ham**, of the headquarters staff, C.P.R., Montreal, was entertained to dinner at Toronto, at the end of October, by the Toronto Women's Press Club.

Jas. **Higgins**, who was a boiler maker in Leaside shops, Canadian National Rys., and gave up his position to become a soldier-labor candidate for the representation of Northeast Toronto in the Ontario Legislature, at the by-election on Nov. 8, polled 1,882 votes, against 8,035 for Major A. C. Lewis, Conservative, and 4,351 for Major W. H. Kippen, Liberal.

Sir Hormidas **Laporte**, one of the Canadian National Railways' directors, returned to Montreal from Europe on Nov. 13.

Z. A. **Lash**, K.C., Senior Counsel, Canadian National Rys., and President, Great North Western Telegraph Co., who died at Toronto, Jan. 24, left an estate valued at $756,586, which will be divided equally between his three sons, Miller Lash, Z. G. Lash, and J. F. Lash, Toronto, and his daughter, Mrs. K. D. Macmillan, Aurora, N.Y.

Louis **Lavoie**, who has been appointed General Purchasing Agent, Canadian National Rys., Toronto, was born at Rimouski, Que., June 22, 1879, and entered railway service Oct. 1, 1894, since when he has been, to Nov. 1901, clerk, General Manager's office, Intercolonial Ry., Moncton, N.B.; Nov. 1901 to Aug. 1902, stenographer to Manager's Assistant, I.R.C., Moncton, N.B.; Aug. 1902 to Sept. 1904, secretary to General Superintendent, I.R. C., Moncton, N.B.; Sept. 1904 to Nov. 1909, chief clerk to General Superintendent, I.R.C., Moncton, N.B.; Nov. 1, 1909, to Mar. 1910, Purchasing Agent, Canadian Government Rys., Ottawa, Ont.; Mar. 1910 to Nov. 1918, Purchasing Agent, Canadian Government Rys., Rail-

ways and Canals Department, Ottawa, and from 1913 to Nov. 1918, also Purchasing Agent for Hudson Bay Ry. and the Port Nelson terminals; Nov. 1918 to Nov. 1920, Assistant General Purchasing Agent, Canadian National Rys., Toronto.

Frank Lee, Engineer Maintenance of Way, C.P.R., Winnipeg, was married to Miss Ruth Skeel, of Cleveland, Ohio, recently.

Capt. G. L. Lumsden, formerly of the overseas air force, and son of Hugh D. Lumsden, at one time Chief Engineer, National Transcontinental Ry., and now of Orillia, Ont., was married at Brantford, Oct. 30, to Miss E. H. Digby.

M. H. MacLeod, Vice President, Construction, Canadian National Rys., and E. Langham, who has retired from the position of General Purchasing Agent, will sail from Vancouver, B.C., towards the end of December, by Canadian Government Merchant Marine, s.s. Canadian Highlander, for a trip to Australia and New Zealand.

M. J. Maguire has been appointed General Manager, Dublin & Southeastern Ry. in Ireland.

Charles Frederick Martin, whose appointment as Superintendent of Transportation, lines west of Edmonton, Alta., Canadian National Rys., Vancouver, B.C., was announced in a recent issue, was born at Farnham, Que., July 27, 1886, and entered railway service in Oct. 1900, since when he has been, to Oct. 1903, messenger, C.P.R., Farnham, Que.; Oct. 1903 to July 1904, car checker, C.P.R., Farnham, Que.; July 1904 to Apr. 1906, clerk, Mechanical Department, C.P.R., Farnham, Que.; Apr. 1906 to Nov. 1908, stenographer, C.P.R., Farnham, Que.; Nov. 1908 to Apr. 1910, secretary to General Superintendent, Western Division, C.P.R., Calgary, Alta.; Apr. 1910 to May 1911, secretary to General Manager, Western Lines, C.P.R., Winnipeg; May 1911 to June 1912, chief clerk, C.P.R., Kenora, Ont.; June to Nov. 1912, General Yardmaster, C.P.R., Souris, Man.; Nov. 1912 to Aug. 1915, in private business in Winnipeg; Sept. 1915 to Oct. 1917, chief clerk, Car Service Department, Canadian Northern Ry., Winnipeg; Oct. 1917 to Aug. 31, 1920, Inspector of Transportation, Canadian National Rys., Winnipeg.

Herbert Robert Mathewson, who has been appointed Assistant General Agent, Passenger Department, C.P.R., Chicago, Ill., was born in July, 1883, and entered C.P.R. service Feb. 1, 1904, since when he has been, to Aug. 25, 1905, clerk and stenographer, Passenger Department, Montreal; Aug. 25, 1905, to Mar. 15, 1906, not in railway service; Mar. 15, 1906, to Mar. 17, 1911, stenographer and clerk, District Passenger Agent's office, Toronto; Mar. 17, 1911, to Mar. 29, 1912, chief clerk, General Agent's office, Passenger Department, Chicago, Ill.; Mar. 29 to May 20, 1912, acting District Passenger Agent, Toronto; May 20, 1912, to July 29, 1913, chief clerk to Eastern Passenger Agent, New York; July 29, 1913, to June 13, 1916, chief clerk to District Passenger Agent, Toronto; June, 1916, June 1916, Travelling Passenger Agent, Chicago, Ill.; and subsequently to Dec. 1, 1917, excursion clerk, General Passenger Department, Montreal; Dec. 1, 1917, to Nov. 1920, Travelling Passenger Agent, St. John, N.B.

George G. McKay, who has been appointed General Agent, Passenger Department, Canadian Pacific Ocean Services Ltd., Chicago, Ill., was born at Hamilton, Ont., June 13, 1878, and entered transportation service in 1893, since when he has been, to June 1905, operator and ticket agent, G.T.R., at various points in Ontario; June 1905 to June 1906, ticket agent, Pere Marquette Rd. and Cincinnati, Hamilton & Dayton Rd., Detroit, Mich.; June 1906 to Oct. 1911, City Passenger and Ticket Agent, C.P.R., Detroit, Mich.; Oct. 1911 to June 1916, City Passenger and Ticket Agent, C.P.R., Chicago, Ill.; June 1916 to June 1920, Travelling Passenger Agent, C.P.R., Detroit, Mich.; June to Nov., 1920, Assistant General Agent, Passenger Department, C.P.R., Chicago, Ill.

Mrs. McNicoll, widow of David McNicoll, formerly Vice President, C.P.R., returned to Montreal, early in November, after spending several weeks in British Columbia and Alberta.

E. F. Merritt has been appointed Works Manager, Lancashire & Yorkshire Ry. carriage and wagon works, at Newton Heath, Eng.

Donald Miller, a Wabash Ry. locomotive man, was, it is stated in a press dispatch, presented recently at St. Thomas, Ont., with the Brotherhood of Locomotive Engineers long service badge, after 40 years active membership. He is said to have driven a locomotive 44 years, and to be the oldest member, in years of service, of the order in Canada, and among the twenty oldest in America.

Jas. Mills, at one time President, Ontario Agricultural College, Guelph, afterwards a member of the Board of Railway Commissioners, and now the Board's Librarian at Ottawa, has been honored by a new building at the college being named Mills' Hall.

A. J. Mitchell, Vice President, Finance and Accounts, Canadian National Rys., who left Toronto, Sept. 28, for England, on official business, returned to Toronto Nov. 13.

S. N. Parent, at one time Chairman, National Transcontinental Ry. Commission, who died at Montreal, Sept. 7, left an estate valued at $470,200.

T. P. Phelan, President, Canada Railway News Co., Toronto, bought three horses in the United States recently, which will race under his colors, on Canadian tracks, next year.

Prince Purachatra, brother of the King of Siam, and who is Commissioner General of the Siamese State Railways, visited Canada during November, and spent some time in the C.P.R. Angus shops, Montreal. He was educated in England, and is visiting various countries, to obtain hints for the improvement of the Siamese railways.

Mrs. Rutherford, wife of J. G. Rutherford, C.M.G., one of the Board of Railway Commissioners, and Miss Rutherford, have returned to Ottawa, after spending some time in British Columbia.

Hon. J. D. Reid, Minister of Railways and Canals, who left for England about the middle of September, accompanied by Mrs. and Miss Reid, returned to Ottawa Nov. 29.

Brig. General H. N. Ruttan, C.M.G., who has been elected an honorary member of the Engineering Institute of Canada, was one of the charter members of the Canadian Society of Civil Engineers in 1887, and was President in 1910. He entered G.T.R. service in 1866, on the engineering staff, and three years later transferred to the Intercolonial Ry., and in 1872-73, was in charge of the engineering and construction of 50 miles of that line along the Baie des Chaleurs. He transferred to the Dominion Government's service in connection with the C. P.R., in 1874, and made some of the first surveys for that line along the north shore of Lake Superior, and in the following year was in charge of a survey party to select a line for the C.P.R. between Edmonton, Alta., and the Yellowhead Pass. He was engaged on this for nearly two years, and located the line now generally followed by the Canadian Northern and Grand Trunk Pacific Rys. From 1877 to 1880 he was in charge of the engineering work between Winnipeg and Kenora (then Rat Portage), and in the latter year he commenced private practice in Winnipeg. He was appointed City Engineer, Winnipeg, in 1886, and retired in 1914, being appointed Consulting Engineer.

Lord and Lady Shaughnessy spent the first week end in November with the Governor General and Duchess of Devonshire, at Rideau Hall, Ottawa.

Hon. Mrs. A. T. Shaughnessy, the widowed daughter in law of Lord Shaughnessy, Chairman, C.P.R., was married to Hon. Piers Legh, son of Lord Newton, at London, Eng., Nov. 15. The Prince of Wales was present and gave gifts to the bride and bridegroom. Among the other givers of presents were the Duke of Connaught, the Prince of Wales' household, Lord Shaughnessy, and C. R. Hosmer, one of the C.P.R. directors.

Henry J. Small, formerly Superintendent of Motive Power and Machinery, Southern Pacific Co., Sacramento, Cal., died at Barkeley, Cal., at the end of October. He was born at Cobourg, Ont., and educated at the Normal School, Toronto. He entered railway service in 1863, with the Chicago & Northwestern Ry. at Chicago, Ill., the whole of his railway service being in the U.S.

E. Stephenson, town ticket agent, G.T. R., Whitby, Ont., died Nov. 22, as a result of a paralytic stroke.

Sir Thos. Tait, President, Fredericton & Grand Lake Coal & Ry. Co., and heretofore Vice President, Canadian Salt Co., Windsor, Ont., has also been elected President of the latter company, succeeding E. G. Henderson, who died recently.

W. K. Thompson, formerly Superintendent, District 3, Ontario Division, C. P.R., Toronto, and who retired from the service about 6 years ago, died at Toronto Nov. 22, aged 66.

H. H. Vaughan, consulting engineer, Montreal, formerly Assistant to Vice President, C.P.R., is now engaged for the G.T.R., in connection with the valuation of its equipment, for the arbitration to settle the amount to be paid by the Dominion Government for certain of the company's capital stock.

R. C. Vaughan, who has been appointed Vice President in charge of Purchases, Supplies, and Stores, Canadian National Rys., Toronto, was born there, Dec. 1, 1883, and entered railway service Oct. 3, 1898, since when he has been, to Mar. 1902, office boy, clerk and stenographer, General Freight Agent's office, C.P.R., Toronto; July to Dec. 1902, in Freight Department, G.T.R., Toronto; Jan. 1903 to July 1, 1910, clerk, secretary to Third Vice President and General Manager, and chief clerk to Third Vice President, Canadian Northern Ry., Toronto; July 1, 1910, to Oct. 1918, Assistant to Third Vice President, C.N.R., Toronto; Oct. 1918 to Nov. 1920, Assistant to President, Canadian National Rys., Toronto.

N. B. Walton, whose appointment as Assistant General Superintendent, Canadian National Rys., with jurisdiction over Grand Trunk Pacific Ry. lines between

Edmonton, Alta., and Prince Rupert, B. C., with office at Prince Rupert, was announced in a recent issue, was, on Oct. 26, when he returned to Edmonton to remove his family, presented with $1,000 and a set of Crown Derby china, for Mrs. Walton, by the G.T.P.R. staff there, where he was Superintendent formerly.

Archibald Watt, whose appointment as Assistant Master Mechanic, Canadian National-Grand Trunk Pacific Rys., Smithers, B.C., was announced in our last issue, was born at St. Louis, Que., Mar. 5, 1874, and entered railway service July 26, 1890, since when he has been, to Sept. 1892, wiper, G.T.R., Montreal; Sept. 1892, to Oct. 1897, fireman, G.T.R., Montreal; Oct. 1897 to Oct. 1901, locomotive man, G.T.R., Montreal; Oct. 1902 to Aug. 1906, machinist, G.T.R., Montreal; Aug. 1906 to Mar. 1907, Locomotive Foreman, Central Vermont Ry., St. Albans, Vt.; Mar. to Sept. 1907, Locomotive Foreman, G.T.R., Montreal; Sept. 1907 to Jan. 1908, machinist, G.T.R.; Mar. to Aug. 1908, machinist, Grand Trunk Pacific Ry., Saskatoon, Sask.; Aug. to Dec. 1908, Locomotive Foreman, G.T.P.R., Melville, Sask.; Dec. 1908 to June 1909, Locomotive Foreman, G.T.P. R., Wainwright, Alta.; June to Dec. 1909, machine foreman, G.T.P.R. Edmonton, Alta.; Jan. 1910 to June 1912, Locomotive Foreman, G.T.P.R., Prince Rupert, B.C.; June 1912 to Apr. 1916, General Foreman, G.T.P.R., Prince Rupert, B.C.; Apr. 1916 to Nov. 1920, District Master Mechanic, Mountain Division, G.T.P.R., Smithers, B.C.

James Waugh, who has been appointed Commercial Agent, Canadian National Rys., G.T.R., G.T. Pacific Ry. and G.T. Pacific Coast Steamship Co., San Francisco, Cal., entered G.T.R. service in 1891 as clerk in the Commercial Express Line office at Milwaukee, Wis., since when he has been, from 1894 to 1900, Soliciting Freight Agent, same line, Chicago, Ill.; 1900 to July 1, 1905, Travelling Freight Agent, same line, Detroit, Mich.; July 1, 1905, to July 1908, Michigan State Agent, Reading Despatch Line, Detroit; July 1908 to Oct. 31, 1911, Travelling Freight Agent, G.T.R., Philadelphia, Pa.; Oct. 31, 1920, Commercial Agent, G.T.R. System, 1911 to July 1915, Commercial Agent, G. T.R., Omaha, Neb.; July 1915 to Oct. 25, San Francisco, Cal.

R. H. Webster, Commercial Agent, Canadian National Rys., Moncton, N.B., was presented with a silver tea service by the local Freight Department staff, Nov. 6, on the occasion of his marriage with Miss A. Crandall, of St. John, N.B., Nov. 9.

H. K. Wicksteed, B.A.Sc., Chief Engineer of Location, Canadian National Rys., Toronto, has gone to Brazil, expecting to be away three months.

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Responding to petitions received from carriers throughout the U.S. showing that further time is necessary to make changes in freight and passenger rates under the provisions of section 4 of the Act to Regulate Commerce, the Interstate Commerce Commission on Nov. 2 postponed effective date of its orders heretofore issued until Mar. 1, 1921, as to rates and charges for transportation of freight; and until Mar. 1, June 1, and Oct. 1, 1921, as to various classes of passenger fares and charges.

The Montreal Chamber of Commerce is reported to have passed a resolution asking the Board of Railway Commissioners to re-establish the pre-war custom of issuing excursion tickets at reduced fares for week ends and holidays.

## The Quebec and Chibougamau Railway Project.

Canadian Railway and Marine World is officially advised that the Quebec Government has made a contract with the Quebec and Chibougamau Ry. Co. for building the first 50 miles of its railway from Chicoutimi to St. Felicien. Construction is to be started by May 1, 1921, and the 50 miles is to be completed and ready for operation by May 1, 1923. This piece of line will form part of 120 miles of main line and branches for which the Quebec Legislature last session voted a subsidy of 4,000 acres of land a mile, not convertible into cash by the Government. The line to be constructed is described as follows:—From the Quebec & Lake St. John Ry., near Chicoutimi, as far as, or near a point on, the James Bay Ry. in Demeules Tp., to the west of Lake St. John, running through the region east and north of the lake, the length of the main line and branches being 120 miles.

Chicoutimi, on the Saguenay River, is the terminus of a section of the Quebec & Lake St. John Ry., 227 miles from Quebec, and 51 miles from Chambord Jct., whence another section of the line 12.01 miles long extends to Roberval, from where a 17.6 mile section, built under the James Bay Ry.'s charter, carries the line to St. Felicien, on the Chamouchouan River. The proposed new line when completed will therefore extend from St. Felicien, on the west side of Lake St. John, round its northern and eastern shores, to Chicoutimi, on the Saguenay River, which, flowing from the eastern side of the lake, carries its waters to the Gulf of St. Lawrence, and will form, with the sections of the Quebec & Lake St. John Ry. and James Bay Ry., referred to, a belt line round the lake.

The Quebec & Chibougamau Ry. Co. was incorporated at the Quebec Legislature's last session to build a railway from Quebec to Chicoutimi, and thence northerly along the Mistassini River valley to Lake Chibougamau, about 180 miles north of Lake St. John, with branch line. The total length of the line from Quebec to Lake Chibougamau is estimated at 400 miles, irrespective of branch lines. The projected route of the line from Chicoutimi to St. Felicien connected with the route of the line subsidized by the Legislature, hence the contract with the Q. & C. Ry. Co.

The company is reported to have deposited a considerable sum with the Government as a guarantee, and to have agreed to wait until the completion of construction of the whole line before receiving the subsidy. The surveys for the line are reported to have been practically completed, and contracts for ties and other timber to have been let.

The route of the projected line from Quebec to Chicoutimi would follow the valleys of the Montmorency and the Jacques Cartier Rivers, and would give a line approximately 137 miles long, against the present C.N.R. line of 227 miles via Chambord Jct. From Chicoutimi the line would run north of the Saguenay River, to the north of Lake St. John, and along the Mistissani River valley to Lake Chibougamau, approximately 180 miles north of the lake. The country through which the first section of the line would pass through a good deal of timber ,and is generally very similar to that through which the Quebec & Lake St. John Ry. runs. The territory between Chicoutimi and St. Felicien is reported to be twice as great in area as the district already settled on the south shore of Lake St. John. It possesses valuable untouched forests, large areas of level agricultural land, and an excellent climate. There are in operation at Jonquiere, Kinogami, Chicoutimi and Port Alfred large paper, pulp and sulphite mills to which the pulpwood taken will be handled. The Mistissani River valley is reported to be rich in timber, and to have numerous large waterpowers, and at Lake Chibougamau there are reported to be deposits of magnetic iron, copper and asbestos awaiting development.

The Q. & C. Ry. Co. is being financed by New York and London, Eng., capital, the syndicate being represented in Canada by a provisional board of directors consisting of H. C. Thomson, London, President; Captain M. C. Eastman, of the Royal Engineers, Vice President and General Manager; H. L. F. Blake, mining expert; J. G. Scott, formerly General Manager, Quebec & Lake St. John Ry. and General Manager, Great Northern Ry.; and J. F. Grenon, C.E., Chicoutimi.

## Scarcity of Cross Ties in the United States.

Owing to the unprecedented levels to which prices of railway cross ties have risen, the Pennsylvania Rd. has decided to investigate the adaptability of the hardwoods of Central and South America for this purpose. Enquiries have been started along several lines, not only to ascertain how much more cheaply ties, or the material for ties, can be purchased in those countries, but also to investigate the question of the longer life of ties made from the southern hardwoods, as compared with those made from the North American native woods heretofore chiefly used. Under normal conditions the Pennsylvania Rd. uses from 5,000,000 to 6,000,000 annually. White oak, the most desirable North American wood for this purpose, is becoming rapidly scarcer. The other available woods in the U.S. have a very short life as ties, unless creosoted, which adds materially to their cost The average net cost of railroad ties ready for placing in the roadbed has risen fully 100% since the beginning of the war.

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Manganese Steel Rails Ordered—The Southern Pacific Co. has ordered 2,000 tons of manganese steel rails, at a reported cost of $375,000. It is to be used on curves of from 6 to 12 deg. between Kern Jct. and Tehachapi, Cal., 47 miles, and between Truckee and Blue Canyon, Nev., 41 miles. It is said that the decision to use manganese rail for curves on these divisions is primarily a safety measure and is based on the experience of the Delaware, Lackawanna & Western Rd. The Southern Pacific Co. will use the manganese rail both for outer and inner rail. The manganese content will be 10.5-15.0%, carbon running 0.92 to 1.10%. The rail will be quenched in water immediately after passing the hot-saws. The rail webs at the ends will be drilled with high speed drills and copper plugs will be pressed and sweated in, to provide for rail bonding, since track drills are not capable of drilling the steel.

The C.P.R. is reported to have arranged for a heavy movement of grain from Goderich, Ont., during this winter.

## Locomotive House Organization.

By E. R. Webb, Master Mechanic, Michigan Central Rd., St. Thomas, Ont.

To have a proper locomotive house organization it would be necessary first to have proper supervision. This means to have enough of the right class of men to handle the work according to the size of the locomotive house and the number of locomotives dispatched per day. The next in connection with the organization is the system of handling the work.

When the locomotive arrives at the coal dock after making its trip, and has a full pressure of air, the air brake inspector should be assigned to inspect all the air, steam heat and scoop operating equipment and report any defects which he may notice. This inspection should take place while the locomotive man is inspecting the locomotive, and be reported to the engine house office as soon as the inspection is finished, so that the work report will be made out at the same time that the work is reported by the locomotive man.

The locomotive is then handled by the hostlers, coaled, sanded, fire dumped, watered, washed off and placed in the locomotive house. As soon as the locomotive arrives in the locomotive house, boiler, machinery and tank inspectors should thoroughly inspect it and the work be reported to the locomotive house office as quickly as possible, so that it may be included with reports by the locomotive man and air inspector. This work should be copied off on forms and distributed to the different departments. When it is finished the heads of these departments should have the men who have done the work sign the slips so that in case of inferior work or other trouble, the work can be traced to those responsible. The foreman should then take the slips into the locomotive house office, where the work is checked off the work book and the slip filed. As soon as the foreman of each department completes the work on a locomotive he should o.k. the locomotive on a board, which should be in every locomotive house, and made so that there is a place for each foreman of a department to o.k. his work. When the locomotive is reported o.k. on the board, final inspectors should then go over the locomotive and see that the work has been done properly and that nothing has been missed. The board or reports to the locomotive house foreman should then be o.k'd. The locomotive is then ready for service.

In case a locomotive comes in that is due for quarterly or monthly inspection, or hydrostatic test, orifice test or washout, a man designated to look after the reports, should have a stenciled sign placed on the front of the locomotive showing any or all inspections due.

Proper drop pits, machine shops, and tool rooms are a very essential part of the locomotive house equipment, and should be kept up to a high standard so that the very quickest turns that are always occurring in locomotive houses will not be delayed on account of having inferior machines, tools or drop pits.

It is also very important that the road foreman of locomotives should keep in close touch with the locomotive house organization and report needed work, so that the report of needed work is in the locomotive house office when the locomotive arrives at a terminal.

Many other essential features in connection with the locomotive house equipment add to its efficiency, such as heat, light and ventilation, proper facilities for handling material, wash rooms and lunch rooms. Every effort should be made by the men in connection with the locomotive house organization to maintain the force in a harmonious and willing spirit, as it is essential that all in such an organization pull together.

The foregoing paper was read before the Central Railway Club in Buffalo, N. Y., recently.

## Additional St. Lawrence Bridge for Montreal.

The question of additional bridge accommodation across the St. Lawrence River between Montreal and the south shore has been under consideration for some time, and special attention has been directed to it recently by the fact that the Montreal Harbor Commission has suggested the building of a low level bridge, with a draw span to provide for navigation. The only bridge providing for general traffic across the river is the Victoria Jubilee bridge, owned by the G. T.R., which has a 13½ ft. roadway in additional to railway tracks. A meeting of representatives of Montreal business interests was held Oct. 29, Lord Shaughnessy presiding, when the question was discussed. A deputation headed by Lord Shaughnessy waited on the Quebec Government Nov. 19 and presented the case for the provision of additional accommodation. Hon. L. A. Taschereau, Prime Minister, expressed sympathy with the plan, and pointed out that it was proposed to ask the Legislature, at its next session to provide for the erection of a bridge at Ile Perrot, and that the Dominion Government had already refused to aid such a bridge. He could not say what the Quebec Government might be prepared to do in the way of building a bridge, but the matter would be discussed and taken up again with the deputation at a future meeting.

In this connection the Montreal Central Terminal Co.'s plans were laid before the Montreal Chamber of Commerce, Montreal, on Nov. 3, when C. N. Armstrong explained the project, which was introduced in 1890. The company, he stated, provided plans for a bridge, and obtained financial support in New York, but the project was turned down on three successive occasions by the Dominion Government. The project was revived in 1912, and, after being approved by the then Minister of Public Works, the company acquired lands at a cost of about $1,000,000 in the Cote St. Michel district. The plans provided for the erection of a bridge from somewhere between Longueuil and St. Lambert, east of St. Helen's Island, and therefrom with a single span of 1,250 ft. reach Montreal near Ontario St., the bridge to be 150 ft. above water level. At a subsequent period the charter was amended so as to provide for the construction of a tunnel. The war intervened and nothing was done. After some discussion a resolution was passed asking the Dominion Government to appoint a commission to investigate the question of the construction of a bridge or tunnel between Montreal and the south shore and of the provision of additional railway accommodation in and about Montreal.

A proposition is reported to have been submitted to the Montreal City Council by H. G. Tyrrell, formerly of Toronto, and now President of the Tyrrell Engineering Co., New York, for a franchise for a toll bridge between Montreal and Longueuil.

## Canadian Traffic League's Annual Meeting, Etc.

The Canadian Traffic League, which is composed of traffic directors, managers, commissioners, and other officials in charge of traffic for industrial and commercial organizations, held its annual meeting at Toronto, Nov. 3, the President, A. W. Bell, of General Motor Co., Oshawa, Ont., in the chair. Reports were presented from the following committees:—Classification, export, express, freight claims, organization, railway legislation and bills of lading, rate construction, refrigerator and heated cars, also a special committee on shippers load and count. A number of other matters were dealt with, including the revision of the constitution.

The League's objects, as stated in the revised constitution, are:—To promote a better understanding by the public, provincial and Dominion governments, of the needs of the traffic world. To secure modification of present laws, regulations and rulings, where they are harmful to the free interchange of commerce. To advance fair dealing. To promote, conserve and protect commercial and transportation interests. To co-operate with the Board of Railway Commissioners for Canada, other organizations, and the transportation companies, thus bringing about better conditions generally.

The following officers were elected:—Honorary President, J. E. Walsh, General Manager, Canadian Manufacturers Association; Honorary Vice President, T. Marshall, Manager, Transportation Department, Toronto Board of Trade; President, F. W. Dean, Steel Company of Canada, Hamilton, Ont.; President, G. P. Ruickbie, Pulp and Paper Association, Toronto; Executive Committee, S. Brown, Manager, Transportation Department, Canadian Manufacturers Association, Toronto; N. Boyd, Gutta Percha & Rubber Co., Toronto; W. S. Campbell, Canadian General Electric Co., Toronto; W. R. Caldwell, Dominion Canners Ltd., Hamilton, Ont.; L. R. Howe, Assistant Traffic Manager, Transportation Department, Toronto Board of Trade.

In the evening, the League held its annual supper in the Toronto Board of Trade rooms, the President, A. W. Bell, in the chair. The principal speaker was D. B. Hanna, President, Canadian National Rys., who received a very hearty welcome, spoke on a number of interesting topics, and was enthusiastically applauded on resuming his seat. Other speakers were:—J. E. Walsh, General Manager, Canadian Manufacturers Association; T. Marshall, Manager, Transportation Department, Toronto Board of Trade; W. J. Grant, District Freight Agent, C.P.R., Hamilton; R. W. Long, District Freight Agent, G.T.R., Toronto; F. W. Dean, the Association's President elect; and Acton Burrows, Proprietor, Canadian Railway and Marine World.

The Pacific Great Eastern Ry. is, according to a press report, about to begin carrying mails from Vancouver to Prince George, and other points in the Caribou District of British Columbia. The mails will be taken from Vancouver to Squamish by steamboat and will be carried thence by rail to Soda Creek, which is as far as the railway is completed, where they will be transferred to a steamboat on the Fraser River for Prince George. Heretofre the Cariboo mails have been transferred at Ashcroft by stages to Barkerville and Prince George.

# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our aunouncements will confer a favor by advising us.

Canadian National Rys.—A. G. BARKER, heretofore Assistant to General Superintendent, Maritime District, also Supervisor of Telegraphs and Time Service, Eastern Lines, Moncton, N.B., has been appointed Superintendent, Moncton Division, Maritime District, vice W. R. Devenish, appointed General Superintendent, Ontario District, Eastern Lines. Office, Moncton, N.B.

F. P. BRADY, heretofore General Manager, Eastern Lines, Montreal, has been appointed Assistant to the Executive. Office, Toronto.

L. S. BROWN, heretofore General Superintendent, Maritime District, Eastern Lines, Moncton, N.B., has been appointed Assistant General Manager, Eastern Lines, vice W. A. Kingsland, appointed General Manager, Eastern Lines. Office, Montreal.

F. F. CAREY, heretofore Assistant Master Mechanic, Campbellton, N.B., is reported to have been appointed Assistant Master Mechanic, St. Maurice Division.

J. W. CONNELL has been appointed Assistant Freight Claims Agent, Western Lines, Winnipeg.

W. R. DEVENISH, heretofore Superintendent, Moncton Division, Maritime District, Moncton, N.B., has been appointed General Superintendent, Ontario District, vice D. Crombie, appointed Transportation Assistant to Vice President, Operation and Maintenance, as announced in Canadian Railway and Marine World for November. Office, Toronto.

A. DEVINE is reported to have been appointed Assistant Master Mechanic, Campbellton, N.B., vice F. F. Carey, transferred.

J. GLAZEBROOK, heretofore Car Foreman, Mirror, Alta., has been appointed Car Foreman, Biggar, Sask.

A. P. GORBELL, heretofore Car Accountant, Maritime District, Eastern Lines, Moncton, N.B., has been appointed Superintendent of Car Service, with jurisdiction over all lines south and east of the St. Lawrence River, vice W. N. Rippey, appointed Superintendent of Transportation, Maritime District, Eastern Lines. Office, Moncton, N.B.

J. W. JOHNSTON, Chief Inspector of Car Lighting, C.N.R., Toronto, has had his jurisdiction extended over the Grand Trunk Pacific Ry.

W. A. KINGSLAND, heretofore Assistant General Manager, Eastern Lines, has been appointed General Manager, Eastern Lines, succeeding F. P. Brady, appointed Assistant to the Executive. Office, Montreal.

E. LANGHAM, heretofore General Purchasing Agent, Toronto has retired from the service.

LOUIS LAVOIE, heretofore Assistant General Purchasing Agent, has been appointed General Purchasing Agent, succeeding E. Langham, who has retired. Office, Toronto.

J. D. McAULAY, heretofore Commercial Agent, Grand Trunk Pacific Ry., Prince Rupert, B.C., is reported to have been transferred to Foreign Freight Department, Canadian National Rys., Montreal.

J. McCLELLAND, heretofore Car Foreman, Calgary, Alta., has been appointed Car Foreman, Mirror, Alta., vice J. Glazebrook, transferred.

L. McCUTCHEON, heretofore Export and Import Freight Agent, Vancouver, B.C., has been appointed Foreign Freight Agent there, and his former position has been abolished.

J. D. MacNUTT, heretofore Inspector of Train Dispatching, Maritime District, Eastern Lines, Moncton, N.B., has been appointed Assistant Superintendent, Halifax Division, Maritime District, Eastern Lines. Office, Truro, N.S.

H. C. MEACHAM has been appointed Import Freight Agent, with supervision of import freight traffic via Atlantic and Pacific coast ports. Office, Montreal.

R. M. MITCHELL, Right of Way and Property Commissioner, C.N.R., has had his jurisdiction extended to include the G.T.P.R.

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R. C. Vaughan,
Vice President, Purchases, Supplies and Stores, Canadian National Railways.

H. M. MORGAN, General Agent, Passenger Department, G.T.R., Buffalo, N. Y., will act in the same capacity there for the C.N.R.

J. C. O'DONNELL, heretofore Superintendent, Manitoba Division, Central District, Western Lines, Winnipeg, has been appointed General Superintendent, Maritime District, Eastern Lines, vice L. S. Brown, appointed Assistant General Manager, Eastern Lines. Office, Moncton, N.B.

W. N. RIPPEY, heretofore Superintendent, Car Service, Maritime District, Eastern Lines, Moncton, N.B., has been appointed Superintendent of Transportation, Maritime District. Office, Moncton, N.B. His duties are to supervise transportation on the district generally; receive from the Superintendent of Car Service all car service orders and transmit them to district officers concerned; distribute cars between various divisions of the district and generally supervise car supply on district; distribute locomotives between divisions (master mechanic to select the individual locomotives of each class involved); see that freight trains and cars are properly loaded, check up overtime and delays and be responsible for the economical operation of train service generally; prepare and distribute working time tables; arrange for special passenger trains; supervise the examination of train and locomotive men in connection with vision and hearing, also knowledge of train rules, air brakes, car heating and lighting, etc.; and perform such other duties as the General Superintendent may specify from time to time.

W. LE B. ROSS, heretofore Local Treasurer, G.T.P.R., Winnipeg, has been appointed Local Treasurer, C.N.R., Western Lines and G.T.P.R., vice C. H. Hickie, transferred to other duties. Office, Winnipeg.

J. G. SWALWELL, heretofore Auditor of Revenue, Grand Trunk Pacific Ry., Winnipeg, has been assigned to other duties in the C.N.R. offices there, and his former position has been abolished.

R. C. VAUGHAN, heretofore Assistant to President, has been appointed Vice President in charge of Purchases, Supplies and Stores. His jurisdiction extends also over the Canadian National Rys.' affiliated and subsidiary companies. Office, Toronto.

JAMES WAUGH, Commercial Agent, G.T.R., San Francisco, Cal., will act in the same capacity for the C.N.R., G.T.R. and G.T.P. Coast Steamship Co., vice W. F. Barry, transferred to the Passenger Department.

Canadian Pacific Ry.—F. L. HUTCHINSON, Manager in Chief of Hotels, has resigned, to take effect Dec. 31. Up to Nov. 17 no appointment of a successor had been made.

D. JONES, heretofore Locomotive Foreman, Windsor, Ont., has been appointed Locomotive Foreman, London, Ont., vice B. Pendleton, transferred.

D. R. KENNEDY has been appointed Assistant District Passenger Agent, St. John, N.B., during winter, and Quebec, Que., during summer, the supervision over rail traffic, ex Atlantic steamships.

H. R. MATHEWSON, heretofore Travelling Passenger Agent, St. John, N.B., has been appointed Assistant General Agent, Passenger Department, C.P.R., Minneapolis, St. Paul & Sault Ste. Marie Ry., and Duluth, South Shore & Atlantic Ry., vice G. G. McKay, transferred to Canadian Pacific Ocean Services Ltd. Office, Chicago, Ill.

B. PENDLETON, heretofore Locomotive Foreman, London, Ont., has been appointed Locomotive Foreman, Ottawa, Ont.

E. J. SEMMENS, Travelling Industrial Agent, Department of Colonization and Development, Calgary, Alta., has had his headquarters transferred to Vancouver, B.C., reporting to J. F. Sweeting, Industrial Agent, Winnipeg.

A. A. SHEPPARD, heretofore Locomotive Foreman, Ottawa, Ont., has been appointed Locomotive Foreman, Windsor, Ont., vice D. Jones, transferred.

Canadian Pacific Ocean Services Ltd. G. G. McKAY, heretofore Assistant General Agent, Passenger Department, C. P.R., Minneapolis, St. Paul & Sault Ste. Marie Ry., and Duluth, South Shore &

Atlantic Ry., Chicago, Ill., has been appointed General Agent, C.P.O.S. Ltd., Detroit, Mich.

SIR E. M. RAEBURN, K.B.E., heretofore Representative of the British Ministry of Shipping, in New York, has been appointed General Manager for Scotland, C.P.O.S. Ltd. Office, 25 Bothwell St., Glasgow.

Grand Trunk Ry.—J. F. AITCHISON, heretofore Auditor of Disbursements, G. T.R., and G.T.P.R., is now Auditor of Disbursements, G.T.R., Montreal, his duties relating to G.T.P.R. having been taken over by the Auditor of Disbursements, Canadian National Rys.

D. T. CRAWFORD, heretofore Inspector of Transportation, Chicago, Ill., has been appointed Superintendent, Chicago Division, Western Lines, vice J. Ehrke, promoted, and his former position has been abolished. Office, Battle Creek, Mich.

J. EHRKE, heretofore Superintendent, Battle Creek, Mich., has been appointed Assistant to General Superintendent, Western Lines. Office, Chicago, Ill.

H. W. MATTHEWS, heretofore Superintendent Terminals, Sarnia Tunnel, Port Huron, Mich., is reported to have been appointed Superintendent, St. Thomas, Ont., vice J. C. Crombie, transferred.

S. L. TRUSLER, heretofore Passenger Trainmaster, Ontario Lines, Toronto, has been appointed Superintendent, Terminals, Sarnia Tunnel, vice H. W. Matthews, promoted. Office, Port Huron, Mich.

Inverness Ry. & Collieries Ltd.—F. C. BIGELOW has been appointed Railway Superintendent. Office, Port Hastings, N.S.

S. G. DAVIS has been appointed General Sales Agent. Office, Port Hastings, N.S.

Minneapolis, St. Paul & Sault Ste. Marie Ry., Duluth, South Shore and Atlantic Ry.—H. R. MATHEWSON, heretofore Travelling Passenger Agent, C.P. R., St. John, N.B., has been appointed Assistant General Agent, Passenger Department, C.P.R., M., St. P. & S.S.M.R., and D.S.S. & A.R., vice G. G. McKay, transferred to Canadian Pacific Ocean Services Ltd. Office, Chicago, Ill.

New York Central Rd., West Shore Rd.—F. C. FOY, heretofore City Passenger Agent, New York, N.Y., has been appointed Canadian Passenger Agent, in charge of passenger traffic in Ontario, west of Sharbot Lake and Kingston. Office, 407 Royal Bank Bldg., Toronto.

J. W. HICKSON, formerly Canadian Freight Agent, Toronto, and latterly in Freight Department, Buffalo, N.Y., has been appointed Canadian Freight Agent in charge of traffic originating at, or destined to, points in Canada west of Sharbot Lake and Kingston, Ont. Office, 407 Royal Bank Building, Toronto.

Timiskaming & Northern Ontario Ry. A St. Thomas, Ont., press report of Nov. 12 stated that labor circles there had been advised that A. E. HOOKWAY, Michigan Central Rd. conductor, an exalderman of the city, and chairman of its board of healt, had been appointed Chairman of the T. & N. O. R. Commission, to succeed J. E. Englehart, resigned. We were officially advised Nov. 18 that no appointment had been made to the Chairmanship, but that Mr. Hookway had applied for the position. Apparently he is one of a considerable number who have done similarly.

## Canadian National Railways Earnings.

| | | |
|---|---|---|
| January | $ 7,727,562 | $ 6,787,517 |
| February | 6,516,059 | 6,265,562 |
| March | 7,761,326 | 7,160,036 |
| April | 8,207,478 | 6,936,635 |
| May | 8,305,860 | 7,884,287 |
| June | 7,776,538 | 6,433,035 |
| July | 9,003,674 | 7,896,685 |
| August | 9,582,989 | 8,415,864 |
| September | 9,685,682 | 8,853,007 |
| October | 12,351,167 | 9,541,628 |
| | $86,438,335 | $76,174,256 |

Approximate earnings for two weeks ended Nov. 14, $5,651,321, against $3,988,357 for same period 1919.

## Canadian Northern Railway System.

| | 1920 | 1919 |
|---|---|---|
| January | $4,200,700 | $4,026,000 |
| February | 3,862,300 | 3,363,800 |
| March | 4,587,700 | 3,554,350 |
| April | 4,732,623 | 3,878,149 |
| May | 4,863,500 | 4,337,750 |
| June | 4,364,600 | 3,131,000 |
| July | 5,168,500 | 4,347,300 |
| August | 5,900,700 | 4,901,150 |
| September | 6,140,500 | 5,260,500 |
| | $43,821,123 | $36,799,999 |

## Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net | Increases or decreases |
|---|---|---|---|---|
| Jan. | $13,914,569 | $13,328,628 | $ 585,941 | *967,571 |
| Feb. | 13,557,104 | 12,843,231 | 713,873 | *267,242 |
| Mar. | 15,715,937 | 13,758,171 | 1,957,766 | 418,721 |
| Apr. | 15,929,416 | 13,587,570 | 2,341,846 | 253,222 |
| May | 16,459,986 | 13,262,044 | 3,197,942 | 164,182 |
| June | 16,480,574 | 13,849,757 | 2,630,817 | *359,604 |
| July | 17,375,761 | 15,756,275 | 1,619,486 | *1,377,218 |
| Aug. | 17,994,769 | 15,793,956 | 2,200,813 | *1,577,355 |
| Sept. | 20,009,287 | 16,100,632 | 3,908,655 | *183,265 |
| Oct. | 24,800,632 | 17,099,810 | 7,700,822 | 2,353,040 |
| | $172,238,035 | $145,380,074 | $26,857,961 | *$1,543,090 |
| Incr. | 29,701,408 | 31,244,498 | ..... | ..... |
| Decr. | ..... | ..... | $1,563,090 | ..... |

Approximate earnings for two weeks ended Nov. 14, $11,400,000, against $7,904,000 for same period 1919.

## Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

| | Gross | Expenses | Net |
|---|---|---|---|
| January | $5,054,034 | $5,867,445 | $*813,441 |
| February | 4,660,831 | 5,159,742 | *498,911 |
| March | 5,756,372 | 5,491,293 | 265,079 |
| April | 5,477,816 | 5,187,340 | 290,476 |
| May | 5,878,934 | 5,547,513 | 331,421 |
| June | 6,645,433 | 6,146,600 | 490,833 |
| July | 7,592,000 | 6,568,053 | 1,023,947 |
| August | 7,764,280 | 6,273,621 | 1,490,659 |
| | $48,829,700 | $46,241,607 | $2,588,093 |
| Incr. | $6,500,553 | $8,266,180 | ..... |
| Decr. | ..... | ..... | $1,765,627 |

## Aerial Transportation Notes.

R. B. Daville, in addressing the Engineers' Institute in Montreal, Nov. 11, on commercial aviation in Canada, said that Canada and the United States are far behind Great Britain and other European countries in the post-war development of aviation. The slow development in Canada is due to lack of capital, and general distrust of aviation as a practical and safe method of transportation, coupled with a comparatively small population and immensely long distances.

J. W. Norcross, President and Managing Director, Canada Steamship Lines, who returned from England recently, is reported to have stated that an air service between Montreal, Toronto and New York will be started next summer, and that while in England he ordered two Vickers-Vimy sea planes. These planes will, it is said, have accommodation for 12 passengers each in addition to two operators, and will be capable of developing a speed of 127 miles an hour. He added that as Canada Steamship Lines is the largest inland water transportation system in the world, there is no reason why it should not also become the premier aerial one as well.

## Transportation for Fort Norman Oil.

The discovery of oil near Fort Norman on the Mackenzie River, in what is reported to be in paying quantities has directed attention to the question of transportation. D. R. Crichton, Calgary, Alta., in a letter to the press points out that there is water transportation down the Mackenzie River from Fort Norman to the Arctic Ocean, which is open for navigation for five months of the year. The navigation through Behring Straits is only open for three months in the year. Mr. Crichton discusses the possibility of building about 300 miles of railway from a point on the Edmonton, Dunvegan & British Columbia Ry. down the Peace River Valley, and then down the Hay River Valley to Great Slave Lake, whence tank steamers could operate to Fort Norman or five or six months in the year. In either case large tanks would be required for storage during the season when navigation is impossible. However, the question of the value of the oil discovered and whether or not the discovery is of sufficient size to justify the investment of so much money for transportation purposes has not yet been determined.

C.P.R. Observation Cars in Italy. — During the war, considerable interest was aroused as to what had happened to the C.P.R. rolling stock, which, prior to the war, was operated over the Austrian State Railways, between Arlberg and Vienna, and Innesbruck and Trieste. It has been announced that while the war was on, the Austrian War Department used them as Red Cross cars, and on the conclusion of peace, handed them back to the C.P.R. in comparatively good condition, and that they have been sold to the Italian Government, for operation on the Italian State Railways, for special purposes.

Electric Signals for Guiding Ships.— A French periodical describes a French method for guiding ships in foggy weather through narrow channels, harbors and so on. The method consists essentially in feeding with alternating current submarine cables or cables laid in the air along the piers and in observing on board ship the positions of said cables by the aid of frames connected to telephones. The frame can be rotated around an axis parallel to the fore and aft line of the ship, so that it can be acertained if the cable is "starboard" or "port" of the ship.

The Newfoundland Railway Commission is reported to have taken over control of the operation of the Newfoundland Ry., and the steamship services operated in connection therewith by the Reid Newfoundland Co. A press report of Oct. 8 states that all bills relating to the railway service are being paid by the Commission, and in advertisements of the trips of the coastal steamers the words "Government Railway Commission" have been substituted for "Reid Newfoundland Co."

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ADVERTISING RATES furnished on application.

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TORONTO, CANADA, DECEMBER, 1920


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## Position of Canadian Northern and Grand Trunk Pacific Railway Securities.

The Canadian Gazette, London, Eng., of Oct. 28, said:—An important statement, which, although unofficial, should be of great interest to holders of Canadian Northern Ry. 5% income charge convertible debenture stock and of Grand Trunk Pacific 4% debenture stock, was made recently at a private gathering of business men in London by A. J. Mitchell, Vice President, Canadian National Rys., who, however, made it perfectly clear that he was not speaking in an official capacity. As regards the Canadian Northern Ry. 5% income debenture stock, it may be recalled that no interest has been paid since Oct. 1914. Apart from the question of interest, stockholders are even more concerned as to the security of the principal, which is repayable at par on May 6, 1930 (or at the option of the company at any time after May 6, 1920, at six months notice). Ever since the Canadian Northern Ry. was taken over by the Canadian Government an official announcement has been awaited as to the Government's intentions in regard to the repayment of this stock, and it may be gratifying to stockholders to learn that Mr. Mitchell, speaking (as we have already intimated) in his personal capacity, expressed his conviction that the Government will pay off this stock at par in 1930. The amount outstanding is £5,144,000. As regards the Grand Trunk Pacific 4% debentures, the interest is guaranteed by the Grand Trunk Ry., subject to the payment of interest on its own loan capital. The debentures are irredeemable, except at the company's option, on one year notice after Mar. 1, 1936. This stock has paid no interest since Mar., 1919. The question in this case is whether the Canadian Government on acquiring the G.T.R., will assume responsibility for the interest on the G.T. Pacific 4% debenture stock. Inasmuch as the Government, under the purchase terms, will in effect be paying interest on G.T.R. guaranteed stock, which clearly ranks after the G.T. Pacific debentures, it is inconceivable that the debentures will be allowed to remain in default. Mr. Mitchell supported this view, giving his opinion that the Government will assume responsibility for all the G.T.R.'s guarantees as soon as it takes possession of the railway. The present quotation of the Canadian Northern 5% income debenture stock is 29.32, and the quotation of Grand Trunk Pacific 4% debentures is 45.50. If Mr. Mitchell's statement ultimately carries official confirmation, the Canadian Northern stock, now standing at about 30, will be worth 100 in 10 years, while as regards the G.T. Pacific 4% debenture, if it becomes an acknowledged liability of the Canadian Government, it will stand at a higher price than 50, at which the yield would be 8%.

The Canadian Gazette of Nov. 4 reported Mr. Mitchell as saying to itis representative:—"The article re Canadian Northern Ry. 5% income debentures and Grand Trunk Pacific Ry. 4% debentures in the Canadian Gazette of Oct. 28 stated that I supported the view expressed with reference to the payment of interest on Grand Trunk Pacific 4% debenture stock. This does not correctly report me. The view expressed by me was that the acquisition of the Grand Trunk Ry. stock by the Government did not in any way change the legal position of the debenture holders, but the fact that the Government was the sole shareholder would tend to strengthen the position of the security holders rather than otherwise."

## The Greater Winnipeg Water District Railway's Position.

In connection with procuring a water supply from Shoal Lake, adjoining Lake of the Woods, for Winnipeg and adjacent municipalities, the Greater Winnipeg Water District Commissioners built a railway from St. Boniface to Shoal Lake, 92 miles, principally to facilitate the taking in of construction materials, but as progress was made with the work, a considerable number of settlers, now said to number over 900, went in and considerable freight and passenger traffic was developed. The commissioners decided to maintain the operation of trains on the line after construction of the water pipe line was completed, with the result that the railway did not earn operating expenses, a recent report stating the deficit as $60,000 a year. The Mayor of Winnipeg is reported to have favored taking up the rails and selling them on the ground that the city went into a water works project, and not a land development and colonization one. One alderman claimed that the line should be subsidized by the Dominion Government, which owns land along its route.

A deputation representing the G. W. W. D. Commissioners is reported to have waited on Premier Meighen when he was in Winnipeg recently, and urged that the line be taken over and operated by the Government, or that it be given a land grant or a cash subsidy. The Premier is said to have stated that the matter would be considered, but he could not hold out any hope that it would be granted. A subsequent press report states that the Premier informed the Commissioners that after consideration it was found impossible for the Government to take over the line, or aid it by a land grant or cash subsidy.

## Grand Trunk Railway Bonds Sold.

Wm. A. Read & Co., the National City Company, Blair & Co., Bankers Trust Co., Guaranty Trust Co., Lee, Higginson & Co., and the Continental and Commercial Trust and Savings Bank, all of New York, offered recently for subscription at par there $25,000,000 Grand Trunk Ry. of Canada (Canadian National Rys. System) 7% 20-year sinking fund gold debenture bonds, and the issue was over subscribed. The bonds are guaranteed as to both principal and interest by endorsement by the Dominion of Canada, the prospectus stating that they are a direct obligation of the G.T.R. of Canada which the Dominion has agreed to purchase and merge with the Canadian National Rys. System, have interest payable April 1 and Oct. 1, and the principal is repayable at par Oct. 1, 1940. The bonds are callable as a whole after Oct. 1, 1935, at 102½, on 30 days notice, on any interest date. A sinking fund of $500,000 a year, available half yearly, beginning April 1, 1921, is to be provided for the purchase of the bonds in the market if obtainable at or below par, but if bonds are not so obtainable during the succeeding six months, the unexpended balance is to revert to the company. Interest is payable in gold at the Bank of Montreal agency in New York.

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper bas done this.

Important traffic orders made by the Board are given in full on another page of this issue.

General order 317. Oct. 27.—Permitting railway companies to issue free transportation to certain agents of Immigration and Colonization Departments of Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island, Railway Y.M.C.A. officers and employes and such officers and agents of Salvation Army as are engaged in immigration work.

General order 318. Nov. 13.—Amending general order 314 re fuel control administration.

30,231. Oct. 14.—Approving agreement between Bell Telephone Co. and Forest Home Telephone Co., Simcoe County, Ont.

30,232. Oct. 19.—Amending orders 29,597 and 30,163, re rebuilding of C.P.R. bridge 9.3, Carleton Place Section, Eastern Division.

30,233. Oct. 23.—Approving revised route map showing general location of Quebec Central Ry. from near Scott's station, St. Marie Parish, to connection with Canadian National Rys. at Drummond Jct., Que.

30,234. Oct. 14.—Approving agreement between Bell Telephone Co. and The Somerset Telephone Co., Megantic County, Que.

30,235. Oct. 13.—Authorizing C.P.R. to divert road allowance in s.e. ¼ Sec. 6, Tp. 22, Range 15, west 3rd meridian, across its Rosetown Southeasterly Branch at mile 57, and to close same within right of way limits.

30,236. Oct. 19.—Authorizing C.P.R. to make highway crossing at mile 57.6, Laurentian Subdivision, Que., and to close crossing at mile 57.7.

30,237. Oct. 21.—Approving Dominion Atlantic Ry. Co.'s release form extending to shippers the privilege of shipping apples in ordinary box cars to Maritime Provinces and Quebec.

30,238. Oct. 21.—Approving agreement between Bell Telephone Co. and Brockville Road Rural Telephone Co., Leeds County, Ont.

30,239. Oct. 21.—Authorizing G.T.R. to build spur on siding for Northumberland Paper & Electric Co., Seymour Tp., Ont.

30,240. Oct. 21.—Authorizing Canadian National Rys. to build spurs for Blocks 73 and 72, Brandon, Man.

30,241. Oct. 21.—Approving agreement between Bell Telephone Co. and Village of Blyth, Ont., and rescinding order 23,362, Feb. 25, 1915.

30,242. Oct. 16.—Relieving Canadian National Rys. from providing further protection at crossing near Fredensthal, Man.

30,243. Oct. 22.—Authorizing C.P.R. to build spur for Swift Canadian Co., Regina, Sask.

30,244. Oct. 23.—Authorizing Essex Terminal Ry. to build siding for Motor Products Corporation, Walkerville, Ont.

30,245. Oct. 21.—Authorizing C.P.R. to build spur for Belgo-Canadian Pulp & Paper Co., St. Flore Parish, Que.

30,246. Oct. 21.—Authorizing C.P.R. to rebuild fender protection at its ferry slip at Port Burwell, Ont.

30,247. Oct. 22.—Authorizing Western Counties Electric Co. to erect its 220 volt power line across G.T.R. on Wharf St., Brantford, Ont.

30,248. Oct. 22.—Authorizing C.P.R. to build spur for Loomis-Dakin Construction Co., Drummondville, Que.

30,249. Oct. 21.—Authorizing G.T.R. to build spur for Toronto Harbor Commissioners on Lot 17, Con. 1, Pickering Tp., Ont.

30,250. Oct. 22.—Relieving G.T.R. from providing further protection at first public crossing north of Fort Covington, Que.

30,251. Oct. 19.—Ordering C.P.R. to erect stock pass 6 ft. high and 5 ft. wide, and farm crossing, for H. Thompson, Tuberose, Sask.

30,252. Oct. 22.—Authorizing Grand Trunk Pacific Ry. to transfer its agent from Entwistle to Gainford, Alta., caretaker to be appointed at Entwistle.

30,253. Oct. 22.—Authorizing Grand Trunk Pacific Ry. to make crossing and road diversion in n.w. ¼ Sec. 9, Tp. 45, Range 7, west 4th meridian, at mile 671.8, Batttle River rural municipality 423, Alta.

30,254. Oct. 23.—Ordering G.T.R. to build station 8 x 10 ft. at Gould's Crossing, Ont., by Dec. 1.

30,255. Oct. 23.—Dismissing application of C. Cunningham, Alamo, B.C., for order reducing C.P.R. rate on crude ore from Sandon, B.C., to the Alamo concentrator, from 70c. to 35c. a net ton, also ordering reparation accordingly from commencement of shipping in June, 1919.

30,256. Oct. 21.—Authorizing C.P.R. to build spur for G. D. Gaudet, St. Gabriel de Brandon Parish, Que.

30,257. Oct. 25.—Approving revised location of Grand Trunk Pacific Branch Lines Co.'s station at Hoey, Sask.

30,258. Oct. 23.—Authorizing G.T.R. to build spur for James Cole, Owen Sound, Ont.

30,259. Oct. 22.—Amending order 30,173, re C.P.R. spur for Prairie Biscuit & Confectionery Co., Regina, Sask.

30,260. Oct. 23.—Authorizing Canadian National Rys. to build spur for Theo. Burrows Lumber Co., in Sec. 1, Tp. 38, Range 27, west principal meridian, Man.

30,261. Oct. 23.—Authorizing C.P.R. to build spur for F. T. Cross, at mile 32.45 Maniwaki Subdivision, Man.

30,262. Oct. 23.—Approving plan showing relocation of crossing gates at Weston Road, near G.T.R. West Toronto station, Ont.

30,263. Oct. 27.—Authorizing City of Medicine Hat, Alta., to build footbridge over C.P.R. at end of Second Ave. Northwest.

30,264. Oct. 26.—Authorizing Canadian Northern Quebec Ry. to make highway crossing in Lot 55, Range 3, St. Boniface Parish, Que.

30,265. Oct. 26.—Authorizing C.P.R. to rebuild bridge 81.14, New Brunswick Coal & Ry., over Sargeson River.

30,266. Oct. 26.—Extending for three months time within which G.T.R. may complete spurs for Windsor Petroleum & Refining Co., Tecumseh, Ont., authorized by order 29,415.

30,269. Oct. 26.—Amending order 30,184, re Saskatchewan Government crossing of Canadian National Rys. in Royal Canadian rural municipality 261, Sask.

30,268. Oct. 26.—Approving location of portion of C.P.R. Leader Southeasterly Branch, mile 35.16 to 50.07, and authorizing it to cross highways.

30,269 to 30,271. Oct. 27.—Extending to Nov. 30, time within which bells and wigwags may be installed at Canadian National Rys. crossings of Amelia, Francis and Brock Sts., Fort William, Ont.

30,272. Oct. 27.—Authorizing Saskatchewan Government to make highway crossing over C.P. R. station grounds at East End, Sask.

30,273. Oct. 28.—Authorizing Canadian Northern Quebec Ry. to build branch from mile 47.9 from Quebec to National Transcontinental Ry., at St. March, Que.

30,274. Oct. 27.—Approving agreement between Bell Telephone Co. and R. H. Edgar (Edgar Telephone System), Dufferin County, Ont.

30,275. Oct. 28.—Amending order 30,091, re C.P.R. diversion at mile 96, Reston Subdivision, Sask.

30,276. Oct. 26.—Authorizing Canadian Northern Ontario Ry. to build bridge over Sinclair Ave., Hawkesbury, Ont.

30,277. Oct. 29.—Authorizing Grand River Ry. to build, at grade, across G.T.R., and Dundas and Beverley Sts., Galt, Ont.

30,278. Oct. 29.—Ordering Canadian National Rys. to build new station at Dropmore, Man., by Sept. 1, 1921.

30,279. Oct. 28.—Authorizing G.T.R. to remove station agent at Rose Point, Ont., and to appoint a caretaker.

30,280. Oct. 29.—Dismissing application of City of Windsor, Ont., to extend Moy Ave. across Essex Terminal Ry.

30,281. Oct. 29.—Relieving G.T.R. from providing further protection at first crossing north of Orillia, Ont.

30,282. Oct. 27.—Authorizing Shawinigan Water & Power Co. and C.P.R. to operate over crossing of St. Maurice St., Three Rivers, Que.

30,283. Oct. 30.—Authorizing City of Windsor, Ont., to extend Hall Ave. over Essex Terminal Ry.

30,284, 30,285. Nov. 1.—Approving Cumberland Ry. & Coal Co. Standard Passenger Tariff, Supplement 1 to C.R.C. 5, and Standard Freight Mileage Tariff, Supplement 1 to C.R.C. 10.

30,286. Oct. 29.—Relieving C.P.R. from providing further protection at crossing 3.2 miles west of Point Dulac, Que.

30,287. Nov. 1.—Authorizing G.T.R. to build spur for Jefferson Glass Co., Toronto.

30,288. Nov. 1.—Autborizing C.P.R. to build spur for Western School Supply Co., Regina, Sask.

30,289. Nov. 2.—Dismissing application of City of Windsor, Ont., for order rescinding order 30,028 ,authorizing C.P.R. to lay tracks to proposed freight yards, at grade, across Caron Ave.

30,290.. Nov. 3.—Relieving G.T.R. from providing further protection at first crossing east of Kinburn, Ont.

30,291. Nov. 2.—Ordering St. Jerusalem Parish, Que., to carry out certain improvements to water course along Canadian National Rys., Lachute Subdivision.

30,292. Nov. 3.—Approving route map showing general location of Interprovincial & James Bay Ry. (C.P.R.) Branch Line, mile 48.2 to Ville Marie, Que., 8 miles.

30,293. Nov. 1.—Approving agreement between Bell Telephone Co. and Tyendinaga Tp., Ont., and rescinding order 27,733, Sept. 30.

30,294. Nov. 3.—Approving location of Canadian National Rys. proposed 3rd class station at Pathlow, Sask.

30,295. Nov. 6.—Authorizing C.P.R. to build spur for United Last Co., mile 11.57, Ste. Agathe Subdivision, St. Jerome Parish, Que.

30,296. Nov. 1.—Relieving G.T.R. from providing further protection at crossing of Kingston Road, near West Hill, Ont., and ordering that cost of installing wigwag signal under order 29,710 be paid 25% out of Railway Grade Crossing Fund, the remainder and maintenance two-thirds by Toronto & York Radial Ry. and one-third by G.T.R.

30,297. Nov. 2.—Authorizing Esquimalt & Nanaimo Ry. to rebuild bridge 93.0 over Englishman's River, B.C.

30,298. Nov. 8.—Approving agreement between Ben Allen Telephone Co. and Bell Telephone Co., Oct. 11.

30,299. Nov. 8.—Authorizing G.T.R. to build spur for Joseph Stokes Rubber Co., Welland, Ont.

30,300. Nov. 8.—Relieving C.P.R. from providing further protection at crossing at Agincourt, Ont.

30,301. Nov. 8.—Authorizing City of New Westminster, B.C., to build crossing over C.P.R. and Vancouver, Victoria & Eastern Ry. at Braid St.

30,302. Nov. 8.—Relieving G.T.R. from providing further protection at second crossing west of Amigari station, Ont.

30,303. Nov. 9.—Approving Western Power Co. of Canada Standard Freight Mileage Tariff, C.R.C. no. B-11.

30,304. Nov. 9.—Extending to July 1, 1921, time within which C.P.R. may build station at Victoria Ave., Westboro, temporary station and platform to be built, and agent, freight express, passenger and telegraph service provided and a spur to take care of carload traffic, to be built by Dec. 1, 1920.

30,305. Nov. 10.—Approving plan and specifications of work to be done on Hanley drain, under C.P.R. in Lot 18, Con. 4, Mornington Tp., Ont.

30,306. Nov. 9.—Authorizing Canadian National Rys. to cross highway between Sec. 28 and 33, Tp. 32, Range 22, west principal meridian, Man.

30,307. Nov. 9.—Amending order 29,661, May 21, re Canadian National Rys. crossing at St. Malo, Que., to provide that nothing obstructing the view shall be placed along the lane within at least 50 ft. from right of way fence northerly; and tbat C.N.R. shall pay J. B. Mercier $100 as compensation.

30,308. Nov. 9.—Approving agreement between Bell Telephone Co. and Brooke Tp., Ont., and rescinding order 22,007, June 8, 1014.

30,309. Nov. 9.—Approving deviation of C.P. R. as built between mile 1.38 and 1.93, St. John Subdivision, New Brunswick District, and authorizing it to cross New Brunswick Power Co.'s tracks (St. John Ry.), and Douglas Ave. and Cushings Mill Road.

30,310. Nov. 10.—Dismissing application of Great Lakes Dredging Co. for order requiring that cubical contents of shipments of quantities of fir piles from British Columbia to Ojibway, Ont., to be ascertained by formula given for round timber in Canadian Freight Classification, and that freight charges be based on an estimated weight of 3.2 lbs. per ft. b.m.

30,311. Nov. 10.—Ordering Canadian National Rys. to extend passing and elevator tracks at Craik, Sask.

30,312. Nov. 9.—Declaring that the team track interswitching toll of 2c. per 100 lb. exacted by C.P.R. on cars unloaded by it on Toronto Power Co.'s private siding at North Toronto was wrongfully made, and authorizing it to repay to R. Laidlaw Lumber Co. excess amount collected.

30,313. Nov. 9.—Approving agreement between Bell Telephone Co. and Centre Thorah Telephone Association, Ontario County, Ont.

30,314. Nov. 10.—Authorizing G.T.R. to operate over siding and spur to be built by Toronto Harbor Commissioners for C. R. Peckover, Toronto.

30,315. Nov. 11.—Relieving C.P.R. from providing further protection at third crossing east of Grand Forks (Columbia) station, B.C.

30,316. Nov. 12.—Relieving C.P.R. from providing further protection at crossing one mile west of Arkwood, Ont.

30,317. Nov. 12.—Amending order 30,182, Oct. 5, re highway crossing over Grand Trunk Pacific Ry. north of n.w. ¼ Sec. 36, Tp. 42, Range 36, west 2nd meridian, Sask.

30,318. Nov. 9.—Authorizing Vancouver & District Joint Sewerage and Drainage Board to cross British Columbia Electric Ry. Port Moody-Coquitlam line in Coquitlam.

30,319. Nov. 9.—Authorizing British Columbia Electric Ry. to cross highway with its Lulu Island Branch in Richmond.

30,320. Nov. 9.—Authorizing Town of Brooks, Alta., to make highway crossing over C.P.R. between Secs. 28 and 29, and 32 and 33, Tp. 18, Range 14, west 4th meridian.

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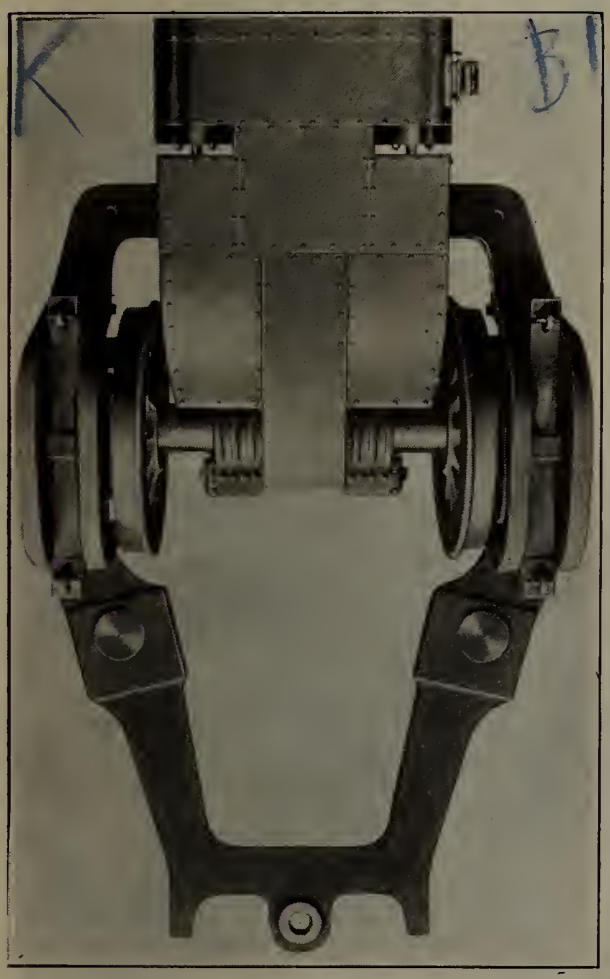
**Railway Lands Patented.**—Letters patent were issued during October for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia as follows:—

| | Acres. |
|---|---|
| Canadian Northern Ry. | 6.03 |
| Canadian Pacific Ry. | 24.27 |
| Total . . | 30.30 |

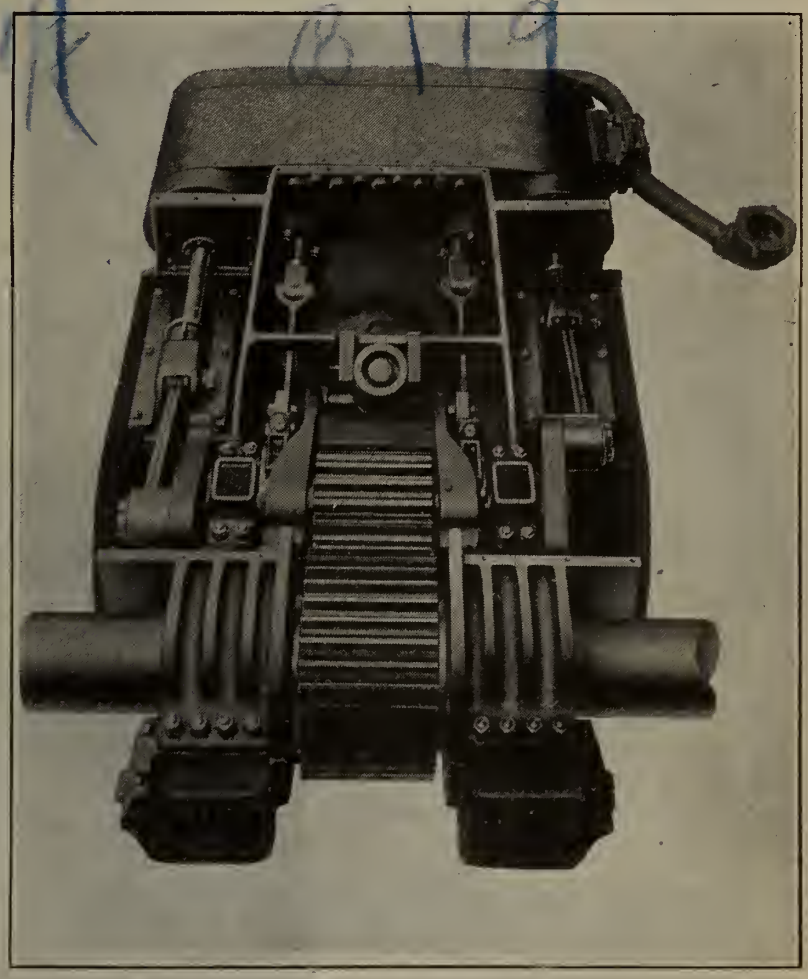
# The Booster Engine for Locomotives.

The four Pacific type locomotives, which the Timiskaming & Northern Ontario Ry. has ordered from Canadian Locomotive Co., are to be equipped with the locomotive booster, and as far as Canadian Railway and Marine World is aware they will be the first locomotives in Canada to have this appliance.

**Description.**—The following description is taken from a bulletin issued by the manufacturers, Franklin Railway Supply Co. The booster consists of a simple 2-cylinder steam engine, upon a special design cast steel bed plate, which bed plate also forms the axle bearings and truck support.



Locomotive Booster in Position on Trailer Truck of Locomotive.



Locomotive booster assembled. Cover removed to show construction and operation.

Three-point suspension is provided; two bearings fitting on the trailing axle, and a third, which is a ball joint, fitting on the back member of the trailing truck frame. This suspension gives sufficient flexibility to compensate for any torsional movement between trailing truck frame and axle due to equalizing, and in addition the ball joint is located near the center of gravity of the booster engine, thereby relieving the bearings on trailing axle normally of the weight and minimizing wear of the booster bearings.

The piston rod, connecting rod and crank shaft follow liberal locomotive practice. The crank shaft and driving piston are integral and are of heat treated steel, liberally designed.

Lubrication is taken care of by enclosing the entire engine and connections in an oil tight steel case and using the splash method. This automatically lubricates all bearings, except the main ones on the traiing axle, which are lubricated in the same manner as is employed for car journal boxes, i.e., a waste packed oil box.

The Westinghouse control valves are air operated. The control is simple. The locomotive man decides that he needs the booster, he makes contact, the rest is automatic, viz.: 1. The booster goes into gear. 2. The steam goes from the booster throttle to the booster engine. 3. The booster power is applied to the axle through an idler gear, which is out of contact when the booster is out of gear. 4. At the proper time the steam cuts off and the booster goes out of gear.

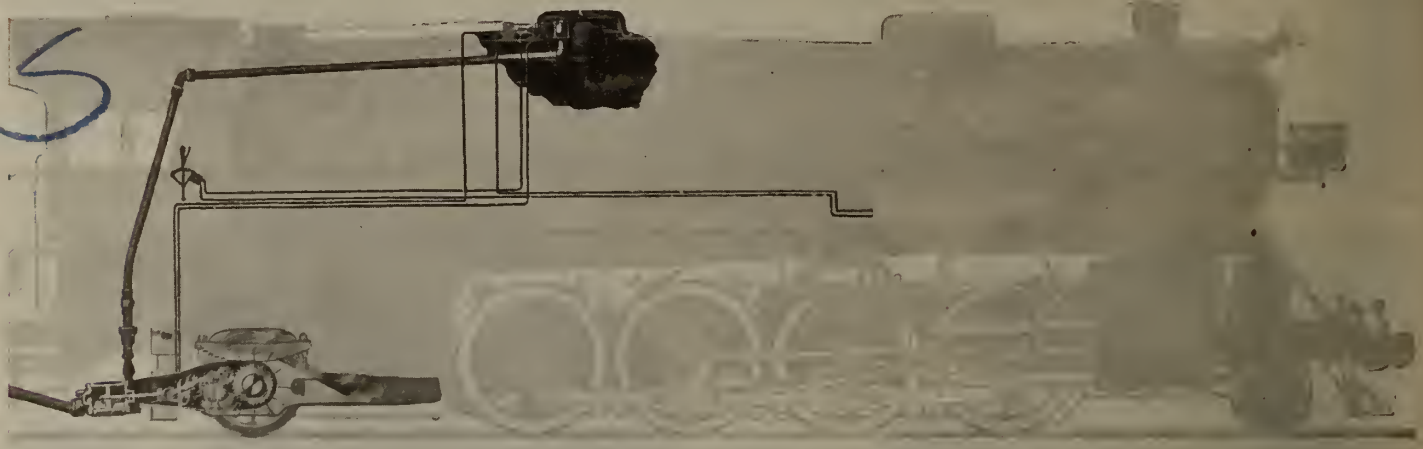
Advantages Claimed.—The manufacturers of the booster make the following claims for it:—For heavy loads at speed, the steam making capacity of locomotive boilers has been enormously increased. To carry this increased boiler capacity trailing wheels have become universal. A large surplus of steam is available in starting. A lot of weight on the trailing wheel is avaiable for starting. The booster makes use of the surplus steam applying it to the trailing wheels in starting. It capitalizes idle weight and spare steam with negligible addition to the weight of the locomotive, and without increased demands on the engineman. Control is semi-automatic giving the locomotive man maximum resource and a negligible minimum of attention to its operation.

Locomotives built recently employ weights bordering on the limit the track structure will bear. Yet their speed pull curves nearly coincide with those of lighter locomotives of the same type. Great starting and accelerating power is the principal advantage. The locomotive booster gives an increase in starting and accelerating power equal to what 50,000 lb. additional locomotive weight would give. And the booster weighs only 3,500 lb. It defers, if not wholly eliminates, large investments for improved roadway to carry bigger locomotives.

The booster puts any locomotive with trailing wheels into the next class above, in starting effort, because the trailing wheels act as an additional pair of drivers. On freight trains this means more tons annually, because of greater starting effort and acceleration, and avoids damage to machinery and equipment, because of a smooth steady start. On passenger trains it means smooth starting and quick acceleration to road speed. This adds to the comfort of the traveling public, protects the equipment from damage, and renders schedules more easily maintained, by avoiding delays in starting.

**Tests on New York Central Rd.**—The manufacturers have supplied the following information:—For approximately two years Pacific type locomotive 3149, equipped with the booster, has been in operation on the New York Central Rd. To determine the booster's operating advantages a series of tests were conduct-

ed on the River Division between Ravena and Weehawken. This division is 130 miles long, with a ruling grade of 0.9157 at Bogota, going west; and 0.46% at Haverstraw, going east. The locomotive has a load on drivers of 184,000 lb., steam pressure 200 lb., and tractive effort of 40,000 lb. It was exhibited at the last Atlantic City railway mechanical convention and has been in continuous road service since that time; no special preparations being made for the test. A dynomometer car was used to obtain the necessary data. In making these tests information was wanted on the following points:—1. Practical increase in tonnage that could be hauled over the division because of the booster. 2. Effect of the booster on train operation over the division. 3. Maximum drawbar pull with booster in action. 4. Maximum drawbar pull without booster. 5. Time saved over the division because of the booster. 6. Increased train acceleration by use of the booster. 7. Effect of a crew inexperienced with the booster, operating a locomotive equipped with a booster.



Locomotive booster, applied to a Mikado Locomotive.

The first test was made going east from Ravena to Weehawken. Without the booster, locomotive 3149 is rated from Ravena with 2,600 tons, and runs to Newburgh, where the tonnage is reduced to 2,100 tons, a reduction of 19.2%. The following is the ruling tonnage for the West Shore Division:—

| Distance in Miles. | | | | |
|---|---|---|---|---|
| Weehawken | Cornwall | Newburgh | Kingston | Ravena |
| 0 | 52 | 57 | 88 | 129 |
| Tonnage Going East Without Booster. | | | | |
| ..... | | 2,100 | 2,600 | ..... |
| Tonnage Going East With Booster. | | | | |
| 2,582 | ..... | | | 2,582 |
| Tonnage Going West Without Booster. | | | | |
| 1,800 | ..... | 2,100 | ..... | 2,600 |
| Tonnage Going West With Booster. | | | | |
| 2,015 | 2,577 | ..... | 2,745 | ..... |

In making the test it was decided to endeavor to take 2,582 tons through to Weehawken. This not only involved getting over the ruling grade at Haverstraw, but also introduced other interesting and important operating problems. At Catskill, the water plug is located at the bottom of two grades. It is the usual practice to leave the train at the top of the grade west of the water plug, run two miles for water, back up to the train, and make a run down grade to get sufficent momentum to carry over the up grade. The profile of the road at this point, fig. 1, shows a down grade of 0.55% and an up grade overaging 0.375%. Running for water in this way consumes 20 to 30 minutes time in good weather. When the weather is bad, with sleet and snow, 30 minutes more is usually lost in pumping up the train line alone, before it can get started after coupling up, thus more than doubling the time lost. In the test run the practice referred to was not followed. Locomotive 3149 hauled the train to the water plug intact, took water and started up the grade with full train, with the booster in operation. As shown by the dynamometer record, fig. 2, the locomotive, with the booster in operation, accelerated to 5 miles an hour very quickly, the drawbar pull showing 41,067 lb. at this point, and in a distance of 580 ft. the speed increased from 5 to 8½ miles an hour, or an increase of 70% as to acceleration. When the booster was disengaged, and the locomotive took the load entirely, the drawbar pull showed 33,497 lb., a difference of 7,570 lb. drawbar pull.

Trailer truck of locomotive, with booster.

Reference to fig. 1, showing the road profile, and fig. 2, showing the dynamometer record, clearly indicate the part the booster played in making possible the starting of the train and getting up to speed on the grade; without the booster this performance would have been impossible.

At this point an important time saving operating situation developed. Because of the time saved at Catskill, West Point was reached three minutes before an express was due. The express was followed to Weehawken, whereas usually two or three local passenger trains are allowed to go ahead. At times this adds another 30 minutes delay in addition to the time lost at Catskill. After leaving Catskill, the booster was used for starting whenever the train was stopped for signals or other reasons, each start showing rapid acceleration.

The ruling grade on this division is known as the Haverstraw grade, fig. 3. It is over 6 miles long and an average of about 0.46%. This grade was approched at a speed of 33 miles an hour, with the booster idle, and continuing up grade at the end of the first mile the speed was 28½ miles per hour; at the end of second

mile, 19 miles an hour; at the end of the third mile, 12 miles an hour; at the end of the fourth mile, 8 miles an hour; at the end of the fifth mile the speed was

point the booster was cut in, on a grade of 0.52% and in 432 ft. the speed reached 8 miles an hour and the drawbar pull 42,900 lb., an increase of 6,459 lb. draw-

cause of the booster in three quarters of a mile of 33 1/3%, with a train tonnage of 22.9% above normal. In taking this train over the ruling grade, the booster

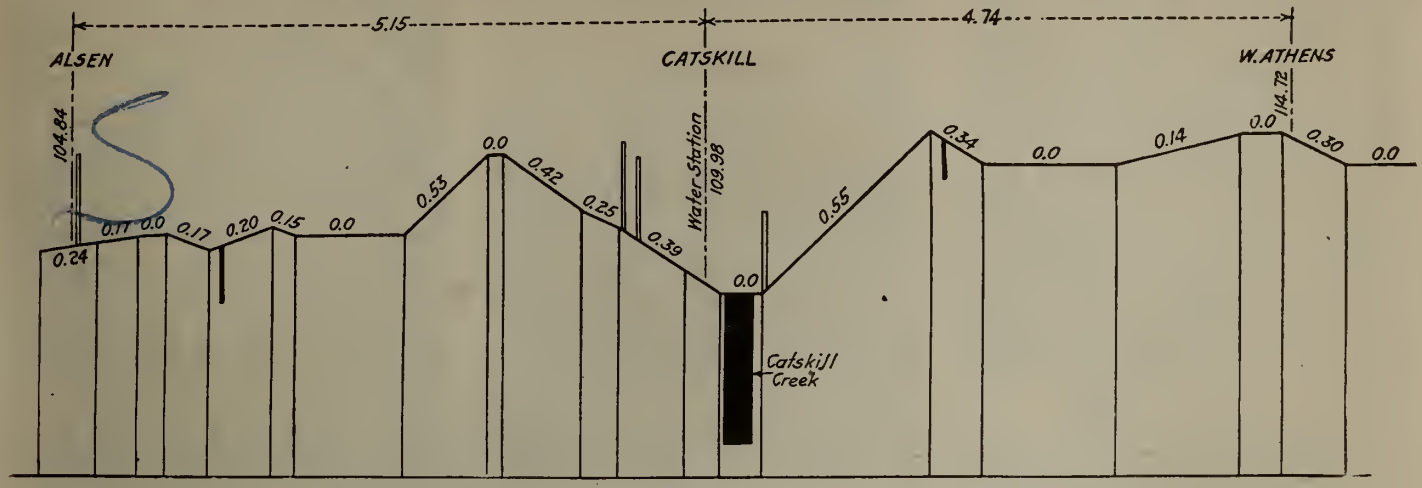



Fig. 1. Profile of New York Central Rd. River Division, Catskill, N.Y.

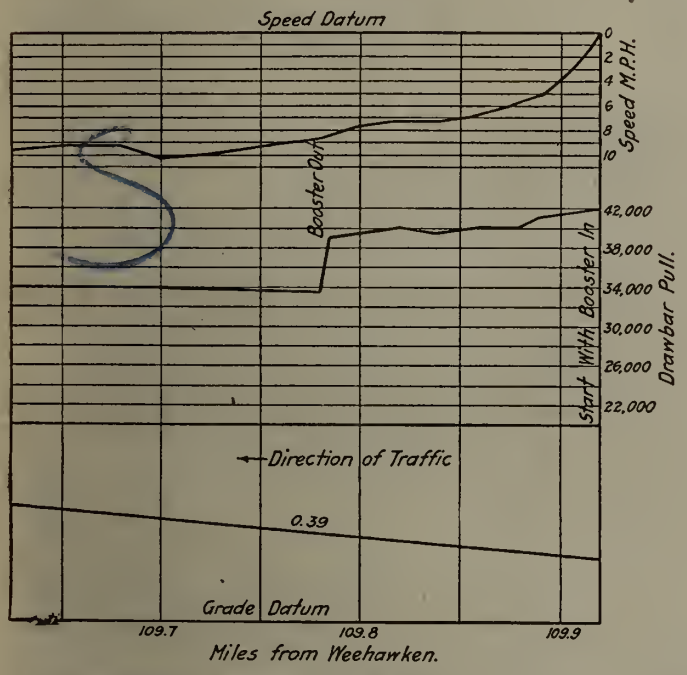



Fig. 2. Locomotive booster assisting in starting train of 2,582 tons, on Catskill grade.

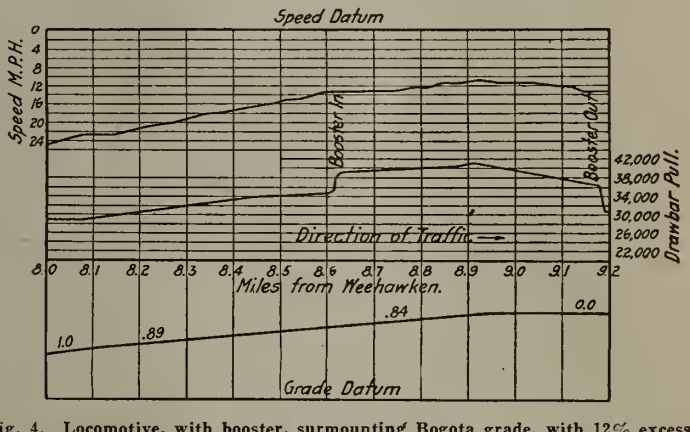



Fig. 4. Locomotive, with booster, surmounting Bogota grade, with 12% excess baggage.

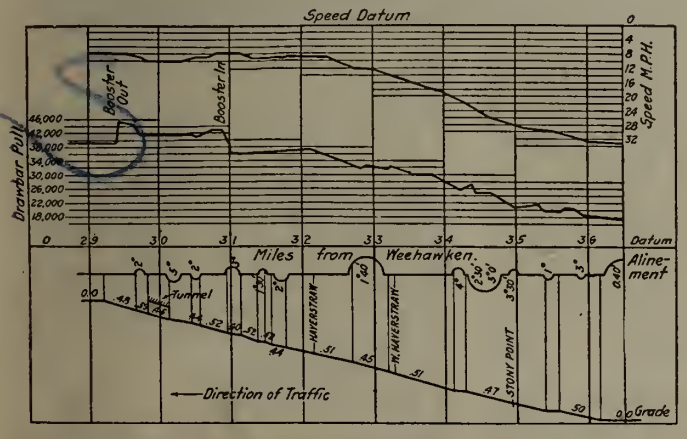



Fig. 3. Performance of locomotive, with booster on Haverstraw grade, with 22.6% excess tonnage.

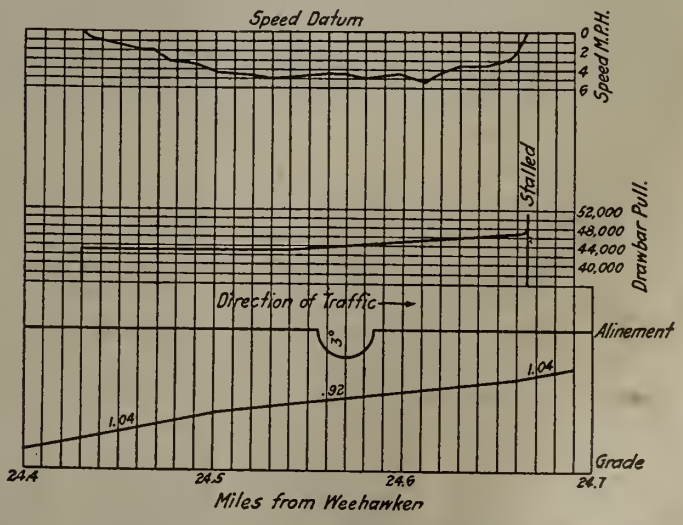



Fig. 5. Stalling test of locomotive, with booster, to determine maximum drawbar pull.

7½ miles an hour, and falling rapidly. The drawbar pull showed 36,441 lb. Without the assistance of the booster the train would have stalled. At this

bar pull, or 17.7% because of the booster. In the first ¾ mile after the booster was working the speed reached 10 miles an hour. This shows an acceleration, be-

was used for about 1⅝ miles, and just before being disengaged a drawbar pull of 45,080 lb. was recorded on the dynamometer car. The train arrived at Wee-

hawken with the same tonnage with which it started from Ravena. This was the first time this tonnage had ever been hauled over the entire division by this type of locomotive. In addition no difficulty was experienced and the locomotive was handled by a crew not regularly assigned to the locomotive. Since this test was made the crew regularly operating this locomotive has hauled 2,618 tons over the division, an increase of 24.6% over the regular tonnage.

By referring to the tabulated statement it will be noted that the tonnage rating of this locomotive without the booster is 1,800 tons to Newburgh, at which point it is increased to 2,100 tons to Kingston, where it is again increased to 2,600 tons to Ravena. The use of the booster permitted increasing the tonnage to 2,015 out of Weehawken, increasing it to 2,577 at Cornwall, and again increasing it to 2,745 at Kingston, which tonnage was hauled to Ravena.

The ruling grade going west on this division begins 7 1/3 miles from Weehawken, at Bogota. It is a 1% grade, approximately 1¾ miles long. The dynamometer record was started at 8 miles from Hoboken, where the speed was 25 miles an hour, and about two-thirds of the way up the speed had dropped to 13 miles an hour. At this point the booster was cut in. The drawbar pull immediately increased from 34,228 to 38,793 lb., an increase of 4,565 lb., as shown in fig. 4.

At West Nyack, a test was made, to determine the combined power of the locomotive with the booster. The grade at this point is 1.04%. The train was brought to a standstill, and a start made by taking slack. As shown by the dynamometer car record, fig. 5, the train proceeding 0.235 of a mile, when it stalled, and the maximum drawbar pull at zero speed registered 51,138 lb. The boiler pressure remained constant; the throttle was wide open and the reverse lever in the corner.

To determine the maximum drawbar pull of the locomotive without the booster, a test was made on an 0.86% grade into Congers, the tonnage at this point being 1,958 tons, one car having been set off, on account of hot boxes. With the booster working, the train was brought entirely on the grade, the booster then cut out, and the locomotive proceeding until stalled. As shown by the dynamometer car record, fig. 6, the drawbar pull registered 40,421 lb. at zero speed. To get the train moving again, the booster was engaged and the maximum drawbar pull registered 49,953 lb., showing an increase of 9,532 lb. in favor of the booster.

At Cornwall the tonnage was increased to 2,577 tons, the usual tonnage from there to Newburgh being 1,800 tons. At West Park, on a 0.52% grade, it was found necessary to again use the booster, as the speed had dropped to 12 miles an hour. Upon arrival at Kingston, the train was increased to 2,745 tons, which is 145 tons over regular rating of 2,600 tons, and the train continued to Ravena, successfully handling this tonnage.

One of the important features of the booster emphasized by these tests was the rapid acceleration which is accomplished at practically no increase in weight, as the booster weighs less than 4,000 lb. The following tabulation shows clearly the reason for this.

| | lb. |
|---|---|
| Maximum drawbar pull of locomotive..... | 40,421 |
| Drawbar pull of locomotive necessary for work on given grade ..... | 36,441 |
| Difference (force available for acceleration). . . ..... | 3,980 |
| Maximum drawbar pull of locomotive, plus booster . . ..... | 49,618 |
| Less drawbar pull necessary for work.... | 36,441 |
| Reserve for acceleration with booster is increased to . ..... | 13,177 |
| Deducting difference for acceleration without booster . . ..... | 3,980 |
| Increased force available for acceleration on same locomotive with booster operating . . ..... | 9,197 |

Hence 9,197/3,980 equals 231% increase in force available for acceleration purposes.

On freight trains this is important, as it enables a quick get-away and the increase in available starting power means a smooth, even, start. This often saves sufficient time to permit a freight train to continue on its run, when otherwise it might necessarily have to take a siding to permit other trains to pass. In addition it avoids damage to rolling stock by avoiding the need of taking slack. On passenger trains, it means saving time in starting from station or other stops. A few minutes saved at each stop with a heavy train helps to maintain operating schedules. The smooth easy start also adds to the comfort of the travelling public.

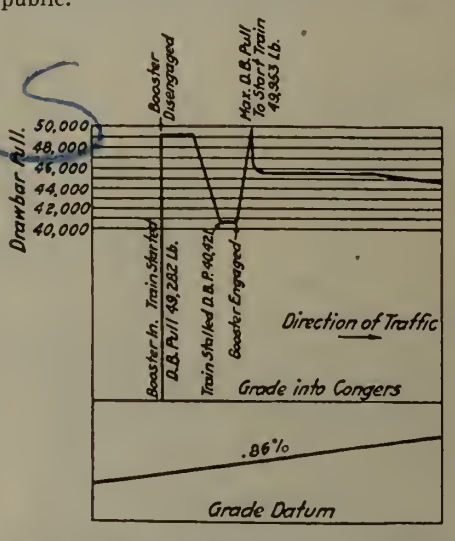



Fig. 6. Stalling test of Locomotive, with booster, to determine maximum drawbar pull without booster.

Conclusions.—The manufacturers make the following claims:—1. The booster renders possible increasing the tonnage that a locomotive can haul. 2. It provides quick acceleration, that helps to maintain schedules more easily, and reduces the time over the division. In several instances under observation, the time consumed for get-away of freight out of terminals and yards was reduced 50%. 3. It eliminates the need for taking slack in starting. 4. It reduces tire and rail wear, as slipping of drivers is avoided. 5. It increases the average speed over grades and eliminates stalling. 6. The booster power is always instantly available at speed below 12 miles an hour. 7. It helps to relieve traffic congestion, increasing the maximum ton miles over the division. 8. No extra coal is consumed because of the booster, and fuel economy should result, because the time required over the division is reduced. 9. It is automatic in operation and control, and adds no extra duties to the locomotive crew. 10. Because of its smooth steady pull at starting, it reduces wear and tear on equipment, and eliminates break-in-twos. 11. It gives the effective increase in drawbar pull in starting, and at slow speeds, that an additional pair of drivers would give, but avoids hauling around 50,000 lb. or more weight that large locomotives would involve, weight that is useless a large percentage of the time, and that present track and bridge structure will not carry. 12. The booster is in motion less than 10% of the time. Its maintenance is negligible. 13. It avoids stalling where sudden weather changes while en route would render impossible the hauling of normal tonnage. 14. It provides a reserve capacity that helps to even out the difference between an experienced and inexperienced crew.

**The Booster in Canada.**—As stated at the commencement of this article, the 4 Pacific type locomotives which the Timiskaming & Northern Ontario Ry. has ordered from the Canadian Locomotive Co. will be the first in Canada to be equipped with the booster, Canadian Locomotive Co. having advised us that it has not been applied on any locomotives built at Kingston up to this time, and Montreal Locomotive Works having advised us that it has not been applied on any locomotive built there. We are also advised that the C.P.R. Mechanical Department is investigating the booster, but that this investigation has not progressed far enough to enable anything to be said as to its merits, or whether it will be used by that company. The Canadian National Rys. management informs us that it does not intend to take any action at present, as it understands the booster has not yet passed beyond the experimental stage on the several U.S. railways on which it is being tested. The Grand Trunk Ry. management states that it has not equipped any of its locomotives with the booster, and its use is not being considered.

## C.P.R. Tools Returned by a Convert.

(From the Vancouver World.)

The equipment of the Canadian Pacific Ry. is this day enriched by the addition of a shop drill and steel saw, both very much the worse for wear, which some years ago belonged in the local shops. "I have been saved and squared myself with God," reads the letter that accompanied the tools, which comes from a mechanic formerly in the employ of the company here, "and I want to square myself with man, so I am sending these back." F. W. Peters, General Superintendent, to whom the letter was addressed, commented on the fact that the donor had "got religion" a short time after leaving the company's employ, the result of which was a substantial consignment of tools which had previously found their way out of the company's shops. Those which arrived today are something which the offender states he "overlooked," and the C.P.R. officials are looking forward to another shipment as the religious influences become stronger.

Railway Engineers Nominated. — The Engineering Institute of Canada's nominating committee, for officers for 1921, has named J. M. R. Fairbairn, Chief Engineer, C.P.R., as President. Among those nominated for councillors are Major F. L. C. Bond, Chief Engineer, G.T.R., Montreal, for district 1; S. S. Oliver, Chief of Stores, Quebec Ry., Light, Heat & Power Co., Quebec, for district 2; C. C. Kirby, District Engineer, C.P.R., St. John, N.B., and S. B. Wass, Division Engineer, Canadian National Rys., Moncton, N.B., for district 3.

The C.P.R. Co. has given $250,000 to the centennial endowment fund of McGill University, Montreal, and $50,000 to the University of Montreal.

# Canadian Pacific Railway 60-ton Hopper Bottom Box Car.

As stated in Canadian Railway and Marine World, when the orders were placed last spring and summer, the C.P. R. is having 3,500 sixty-ton hopper bottom box cars built. Hoppers are being provided at the side door openings, as a result of very satisfactory service having been obtained from 200 cars similarly equipped which were placed in special service between Port McNicoll and West St. John, N.B., commencing Oct., 1911. The general dimensions are as follows:—

| | |
|---|---|
| Type | Single sheathed, steel framing |
| Length inside | 40 ft. 6 in. |
| Width inside | 8 ft. 6 in. |
| Height inside | 9 ft. |
| Height from rail to top of floor | 3 ft. 7 in. |
| Width of door opening | 6 ft. |
| Capacity in cubic ft., exclusive of hoppers | 3,098 cu. ft. |

Sixty Ton Hopper Bottom Box Car, Canadian Pacific Railway.

| | |
|---|---|
| Light weight | about 48,300 lb. |
| Maximum lading | about 120,700 lb. |
| Limit load 5½ x 10 in. journals | 169,000 lb. |
| Ratio of lading to weight of car at rail | 71.4% |

The arch bar trucks are composed of 1¼ x 6 in. top and bottom members, with cast steel column posts, designed to take either Harrigan pinless brake beam hanger or A.R.A. standard type. The spring plank is a 13 in. no. 32 channel, with ends at arch bar, and spring seat, reinforced by heavy steel castings. An unusual feature is the use of a rivet through the spring plank on each side of the spring plate, the heads of the rivets preventing the springs from slipping out of position.

**Underframe.**—The center sills are composed of two 12 in. 35 lb. ship channels, tied together by ¼ x 20 in top cover plate. Steel striking casting, coupler carrier, draft lugs and center brace are used.

The bolsters are made up of 5/16 in. pressed steel diaphragms, riveted to center and side sills, and covered top and bottom by 14 x ⅝ in. plates. The crossbearers are made up of ¼ in. pressed steel diaphragms, riveted to center and side sills, and covered at top by a 6 x 7/16 in. plate and bottom by a 6 x ⅜ in. plate.

The underframe is fitted with four crosstie webs or stiffeners, pressed from ¼ in. plate. Two of these stiffeners are located between each bolster and crossbearer. Between the centr sills at each crossbearer and stiffener a ¼ in. pressed diaphragm is used.

**Side Framing.**—The side plate is a special rolled angle 6 x 3½ x ⅜ in., having an 87° root angle. The posts and braces are U shaped, pressed from ¼ in. plate, flattened at side sill and plate, to provide large riveting surface. The side sill is 9 in., 17.5 lb. per foot. The door posts are made of 4 in. 8.2 Z bars.

The side doors represent what is believed to be the best obtainable. The interlocking front and back edges afford exceptional protection against weather and pilfering. The top edge is thoroughly weatherproof, yet so arranged that it cannot become blocked with ice. The bottom of the door is fitted with turned rollers, that fit on very substantial and rigidly supported track. This track is not likely to be blocked with ice, but in case it should be, the interference is plainly visible and easily removed. The location of rollers at the bottom of the door does away with the binding, or cramping, so frequently noticed on doors suspended from the top.

The grain hoppers, located at the side door opening, on each side of the car, are the Burnett type. When used for freight that cannot be dumped through the hopper, the car has a solid level floor the same as an ordinary box car; when grain, coal, etc., are to be loaded the specially constructed sections of the floor over the hoppers are turned up against the side door posts. This arrangement allows the load to go directly into the hoppers, and also saves considerable temporary door lumber. When the cars are unloaded, it is only necessary to remove the pin that locks the hopper doors; the doors open quickly by gravity and immediately a large percentage of the contents of the car discharges through the hoppers. The balance of the load may be shoveled to the middle of the car by hand, or if the unloading plant is equipped with power shovels, as most elevators are, the floor door on one side of the car is released from the door post, and the cables taken through the door opening as usual. The hopper doors have no operating mechanism; they are closed directly by hand and secured by simple locking bar arrangement.

**End Frame.**—Murphy horizontal corrugated ends, in two pieces, are used. The top section is formed to secure ample connection to side plates, and provide a very strong end plate. The bottom edge of the end is securely riveted to a 6 x 4 x ½ in. angle forming end sill, which is in turn securely fastened to side sills and diagonal braces as well as center sills.

**Roof.**—Murphy outside metal roofs, with 13/16 in. t. and g. boards, laid longitudinally, are used in connection with strong Z bar carlines, providing ample supports at side plates. Part of the cars

are equipped with angle type carlines.

Lining and Decking.—The side and end lining is 1½ x 5 in. t. and g. and must show more than 6% decrease in weight, after being placed for 96 hours in a hot cupboard, the temperature of which is maintained at from 160° to 180° F. The lining, after being milled, is dipped in paint and dried before application. The decking is 2¼ in. thick, and securely bolted to ⅛ in. plate at side sills, and fastened to center sills by floor clips.

The specialties used are:—

| | |
|---|---|
| Dust guards | Thornburg |
| Journal boxes | McCord 5½ x 10 in. round bottom |
| Brake beams | M.C.B. no. 2 |
| Four point suspension | Creco. |
| Truck bolsters | Simplex |
| Side bearings | Stucki |
| Draft gear | Murray Type H, Class 25 |
| Doors | Camel, bottom hung |
| Roof | Murphy, outside metal |
| Uncoupling device | Imperial Type B |
| Brakes | Westinghouse schedule KC 1012 |
| Packing cups and expander rings | Johns-Manville |
| Coupler yokes | Cast steel |

## Improvements in Cast Iron Wheels.

For the railway material industry, the United States Bureau of Standards has worked out a number of important problems. It has completed an investigation of the graphitization of white cast iron upon annealing. This problem arose in connection with other investigations of the properties and characteristics of chilled iron car wheels and in particular the best range of annealing temperatures. This was brought to the attention of the Bureau by one of the car wheel manufacturers. The composition is so chosen and the wheel is so cast that the tread and inside of the flange show white iron and the remainder graphitized or gray iron. In order to relieve the stresses set up during the cooling of the wheel under drastic conditions, the wheels are piled in pits, while red hot, and allowed to cool very slowly. Investigation developed that the highest temperature at which no graphitization of the tread and flanges takes place is about 700 degrees Centigrade, which is also the maximum annealing temperature for car wheels.

The investigation of stresses in chilled iron car wheels caused by heat from brake action has been nearly completed, says the Bureau report. A very large percentage of car wheel failures are attributed to stresses caused by heating of the tread by brake action, the central part of hub of the wheel remaining relatively cool. It is the purpose of the investigation to determine and record for adoption the most suitable material and design of wheels to resist stresses of this kind. In this investigation the tread of the wheel is heated by passing an electric current through a curculator resistor insulated from the tread. The wheel remains stationary, thus readily permitting the taking of the temperature and strain gauge readings. Considerable differences have been found in the behavior of wheels differing in design and weight.

Freight and Passenger Train Costs.—A United States National Coal Association bulletin states that the average cost of running a freight train one mile (on the basis of July returns) was $1.897, and the cost of running a passenger train was $1.03. By sections the cost per freight train per mile was: New England, $2.39; Great Lakes, $2.095; Ohio-Indiana-Alleghany, $2.215; Pocohontas, $2.155; Southern, $1.545; Northwestern, $1.633; Central Western, $1.832, and Southwestern $1.724.

## Birthdays of Transportation Men in December.

Many happy returns of the day to:—

E. T. Agate, ex-Assistant Superintendent, Lake Superior Division, Canadian Northern Ry., Capreol, Ont., now of Toronto, born at Pittsford, N.Y., Dec. 7, 1874.

A. G. Albertsen, General Agent, Passenger Department, C.P.R., Minneapolis, Minn., born at Copenhagen, Denmark, Dec. 31, 1887.

J. H. Barber, Engineer, Toronto Terminals Division, Ontario District, C.P.R., Toronto, born at Cobourg, Ont., Dec. 20, 1856.

W. E. G. Bishop, District Freight and Passenger Agent, Canadian National Rys., Cochrane, Ont., born at Central Clarence, N.S., Dec. 4, 1888.

H. E. Bissell, Land and Tax Agent, Grand Trunk Pacific Ry., Winnipeg, born near Noyan, Que., Dec. 31, 1867.

N. E. Brooks, ex-Engineer, Maintenance of Way, Western Lines, C.P.R., now at Sherbrooke, Que., born there, Dec. 25, 1866.

W. W. Butler, Presdent, Canadian Car & Foundry Co., Montreal, born at Danville, Ohio, Dec. 9, 1862.

J. M. Cameron, General Superintendent, Alberta District, C.P.R., Calgary, born at Lochaber, N.S., Dec. 18, 1867.

W. C. Casey, General Agent, Passenger Department, Canadian Pacific Ocean Services Ltd., Winnipeg, born at Moncton, N.B., Dec. 12, 1882.

G. W. Caye, General Purchasing Agent, G.T.R., Montreal, born at Malone, N.Y., Dec. 1, 1865.

R. J. Foreman, Foreign Freight Agent, Canadian National-Grand Trunk Rys., Montreal, born at Toronto, Dec. 31, 1878.

A. H. Foster, Manager, Brantford Municipal Ry., Brantford, Ont., born at Guelph, Ont., Dec. 24, 1888.

W. H. Gardiner, City Freight Agent, C.P.R., and District Freight Agent, Esquimalt & Nanaimo Ry., Victoria, B.C., born there, Dec. 6, 1859.

A. S. Goodeve, member Board of Railway Commissioners for Canada, born at Guelph, Ont., Dec. 15, 1860.

A. J. Gorrie, ex-Superintendent District 1, Transcontinental Division, Canadian Government Rys., Quebec, now of Toronto, born at Raith, Kirkcaldy, Scotland, Dec. 10, 1868.

W. H. Grant, General Tie Agent, Canadian National-Grand Trunk Pacific Rys., Toronto, born at Acton, Ont., Dec. 8, 1858.

F. P. Gutelius, Vice President and General Manager, Delaware & Hudson Rd., Albany, N.Y., born at Mifflinburg, Pa., Dec. 21, 1864.

J. T. Hallisey, Superintendent, Halifax Division, Maritime District, Canadian National Rys., Truro, N.S., born at Beaver Bank, N.S., Dec. 29, 1862.

D. B. Hanna, President, Canadian National Rys., Canadian Government Merchant Marine Ltd., etc., Toronto, born at Thornliebank, Scotland, Dec. 20, 1858.

R. W. D. Harris, ex-Trainmaster, Moose Jaw Division, Saskatchewan District, C.P.R., Moose Jaw, now of Tappen, B.C., born at Victoria, B.C., Dec. 12, 1879.

J. J. Hennigar, District Freight Agent, Great Lakes Transportation Co., Windsor, Ont., born at Topeka, Kan., Dec. 21, 1884.

W. J. Kelly, Superintendent of Telegraphs and Telephones, Timiskaming & Northern Ontario Ry., North Bay, Ont., born at Renfrew, Ont., Dec. 17, 1875.

L. S. Landers, Division Engineer, Canadian National Rys., Edmundston, N.B., born at Farnham, Que., Dec. 15, 1888.

J. G. Legrand, Bridge Engineer, Canadian National Rys. Western Lines and Grand Trunk Pacific Ry., Winnipeg, born at Sompuis, France, Dec. 24, 1861.

J. M. MacArthur, Superintendent, Medicine Hat Division, Alberta District, Medicine Hat, Alta., born at Toronto, Dec. 8, 1885.

H. M. MacCallum, General Freight Agent, Canadian Pacific Ocean Services, Ltd., Toronto, born at Huntingdon, Que., Dec. 3, 1882.

A. McCowan, Master Car Builder, Canadian National Rys. Western Lines and Grand Trunk Pacific Ry., Winnipeg, born at Perth, Scotland, Dec. 5, 1868.

J. T. McGrath, ex-Superintendent of Motive Power and Equipment, Chicago & Alton Rd., Bloomington, Ill., born at Toronto, Dec. 6, 1869.

A. T. McKean, Division Freight Agent, C.P.R., Calgary, Alta., born at St. John, N.B., Dec. 18, 1886.

Capt. R. McKillop, Superintendent, London Division, Ontario District, C.P.R., London, Ont., born at Perth, Scotland, Dec. 26, 1884.

A. D. MacTier, Vice President, Eastern Lines, C.P.R., Montreal, born at Blairgowrie, Scotland, Dec. 27, 1867.

J. C. O'Donnell, Superintendent, Divisions 2 and 3, Central District, Canadian National Rys., Winnipeg, born at Cobden, Ont., Dec. 17, 1879.

Alfred Price, General Manager, Eastern Lines, C.P.R., Montreal, born at Toronto, Dec. 6, 1861.

W. J. Radford, Assistant Manager, Toronto Suburban Ry., Toronto, born at Boldre, Hants, Eng., Dec. 23, 1870.

G. D. Robinson, ex-European Freight Agent, Canadian Pacific Ocean Services Ltd., Montreal, born at St. John, N.B., Dec. 7, 1877.

H. W. Sharpe, Master Mechanic, Quebec District, Canadian National Rys., Quebec, Que., born at Campbellton, N.B., Dec. 6, 1869.

G. E. Smart, Mechanical Assistant (Car Department) to Vice President, Operation and Maintenance, Ontario District, Canadian National Rys., Toronto, born at Edinburgh, Scotland, Dec. 23, 1873.

W. Tansley, Car Service Agent, Ontario District, C.P.R., Toronto, born at Shelburne, Ont., Dec. 27, 1872.

M. F. Tompkins, General Freight Agent, Eastern Lines, Canadian National Rys., Moncton, N.B., born at Margaree, N.S., Dec. 6, 1878.

H. H. Vaughan, ex-Assistant to Vice President, C.P.R., now Consulting Engineer, Montreal, born at Forest Hill, Essex, Eng., Dec. 26, 1868.

R. C. Vaughan, Vice President, Purchases, Supplies and Stores, Canadian National Rys., Toronto, born there, Dec. 1, 1883.

A. P. Walker, Assistant Engineer, Ontario District, C.P.R., Toronto, born at West Hartlepool, Eng., Dec. 9, 1860.

E. B. Walker, Electrical Engineer, Canadian National Rys., Toronto, born there, Dec. 15, 1879.

J. B. Way, Freight and Ticket Agent, C.P.R., Saulte Ste. Marie, Ont., born at Port Hope, Ont., Dec. 10, 1865.

R. W. Burnett, Engineer and Works Manager, Joliet Railway Supply Co., Chicago, Ill., formerly General Master Car Builder, C.P.R., writes:—"I read Canadian Railway and Marine World each month with great interest."

# The Railway Situation in Newfoundland.

By P. T. Magrath, St. John's, Newfoundland.

Like the rest of the world, Newfoundland has its railway problem, not the less, but perhaps the more difficult to solve, because it is a country of but some 250,000 people, and it is, in the opinion of many authorities, largely over supplied with this expensive method of transportation. Even before the war, the Newfoundland Railway was not a paying concern, losing on an average about $100,000 a year for about 10 years, on an average annual income of about $650,000, according to figures supplied the Government. The railway, originally built for the colony by the late Sir Robert Reid, of Montreal, a contractor who had previously undertaken many large railway ventures in Canada, is a narrow gauge line.

The actual mileage operated is about 1,000, and the road is being worked by Sir Robt. Reid's sons, under a lease for 50 years from the Newfoundland Government, the company being paid for the operation by mail subsidies and grants of land along the railway line, or, in other parts of the country, accepted by the Reids in preference to cash, because of the possible value of the timber, mineral and farmland wealth in the country and its eventual development. With the outbreak of war, the railway situation became complicated in Newfoundland, and while traffic fell off, the cost of coal, labor and other supplies increased enormously, the reconditioning of the line proved difficult, locomotives and cars could not be procured, and all the other phenomena of the situation in Canada and the United States were reproduced here. The annual loss steadily increased, reaching $350,000 for the year ended June 30, 1918, and amounting to $310,000 for the seven months ended Jan. 31, 1919, the latest figures available, with little reason to suppose there has been any drop in the rate of losses since these deficits have been incurred on an income of about $1,250,000 a year.

At the same time, rolling stock and roadbed have been allowed, according to critics, to run down, accidents increased, and public confidence in the road as a safe means of travel became shaken. A great deal of criticism was engendered by politics, because the railway has played a large part for 30 years in the politics of the country, each succeeding government finding it more or less necessary to become closely associated with the railway management, and the party in opposition using this as a ground for criticism and hostility. In the general election of just a year ago, for instance, the then opposition bitterly attacked the then Government for having been under the domination of the Reids and pledged themselves, as others had done before them, to make the Reids toe the mark and carry out their contract. A political change took place, the opposition was elected, and now the tables are turned and the new administration is charged with being more closely allied with the Reids than any of its predecessors. The reason for this is that at the legislative session last spring an act was passed creating a commission to study and act upon acute problems of the railway. The Reids had claimed in effect that it was impossible for them to continue the operating of the system much longer, without Government help, the Government agreed to furnish $1,000,000 for reconditioning purposes, provided the Reids agreed to supervision by a commission on which the Government would have four members, one being the charman, and the Reids three. The Government planned to have one of its four an English railway manager, and another an accounting expert, but these have not yet been selected. The other two were to be a Government representative, who would be chairman, and the Colonial Engineer, himself a competent railway authority, and adviser to the Government on these matters. The $1,000,000 was ear-marked for the purchase of locomotives, freight cars, and new fish-plates for fastening the rails, those at present in use being condemned as too small for effective service, and provision was made for a thorough study of the general business. It was also understood, according to critics, that this commission scheme was to be merely a tentative one, to continue only for a year, and that at the next session of the Legislature some permanent plan for the operation of the railway hereafter would be submitted.

Whether or not it be correct that the commission appointed recently by the Government has exceeded its powers, the programme upon which it has resolved is as follows:—

The mid-interior section of the railway, where the line ascends the range of hills, known as the Topsails, and which form the backbone of the country, at a height far above sea level, is to be abandoned for the winter in future, at any rate for passenger traffic, and a new route is to be operated in winter via Argentia, in Placentia Bay, and Sydney, N.S., giving passenger, mail and express freight transit probably once a week by the steamship Kyle, with an alternative service between Halifax and Argentia by the steamship Meigle. By this means it is hoped that delays of past years will be avoided, because virtually every winter since the trans-insular railway began trains have been at times two or three weeks making the trip of 546 miles between St. John's and Port aux Basques, and last winter this section of the road had to be abandoned at the end of January and was not reopened until well into May.

A local passenger, mail and freight service is to be maintained each winter, while the through line is closed, semi-weekly between St. John's and Grand Falls (the seat of the great Northcliffe paper mills) on the east coast, a distance of about 500 miles, while a similar service will be conducted on the west coast, between Port aux Basques and beyond Bay of Islands, the seat of the main herring industry, a distance of about 150 miles, the interior section of the Topsails already described, and totalling about another 100 miles, with practically no settlers, being abandoned.

To make this Argentia-Sydney service effective, Argentia, heretofore without railway connection and three miles from the nearest point on the track, is to be connected by a spur line covering that distance, and now under construction, and at Argentia it is proposed to build piers extensive enough to take large ocean freight steamships and to use it as a winter shipping port for the Harmsworth paper mills operating in the interior of the country, and at present suffering difficulty from this cause, if the company will agree to make it a terminal for such purposes.

The whole system of the in-bay and coastwise steamship connection, heretofore partly owned and operated by the Reids, and partly by the Government, has been taken over by the commission and is being operated in conjunction with the railway line. The Reids formerly had 10 ships connecting with the trains at convenient points for the great bays and at other sections of the coast into which the country naturally divides itself, because nearly the whole of the population are settled around the seaboard in countless harbors whence they ply their fishery pursuits and the railway without such auxiliaries would be virtually useless to them. Some of the Reid steamships were taken for war purposes, and others were lost by perils of the sea and the Government procured others in England, and in America, while the previous administration bought two locally which did the main services from St. John's, north and west, and it is claimed that better results can be obtained by combining all these—Reid and Government—as a single agency in connection with the railway.

The Government also made provision whereby the commission could undertake the development of certain coal areas on the west coat of the island, adjacent to the railway line, for the purpose primarily of affording a supply for the operating of the line, and, secondarily, for the utilization of any surplus for general economic purposes, if a report by a Canadian Government geologist whose services were requested was favorable. He came to the island, examined the area, and reported in sufficiently encouraging terms as to its possibilities to warrant the authorities in undertaking work upon it, and this in a preliminary stage has been started, and five large motor trucks, each weighing two tons and to carry five tons of coal, have been bought and taken to the scene, to be used in getting the coal to the main line of the railway, four miles distant. It is hoped to accomplish this the present autumn before snow falls, but otherwise next spring, as the road to the mine is but newly built and rough in construction and could hardly be utilized during the severe winters of this region.

The commission has cut off all passes to legislators and others, and is working on the basis that everybody who travels on the railway, no matter what his state or condition, must pay his fare. It also proposes to begin next spring the running of a daily trans-insular service, which was in effect for two years before the war, but was then abandoned until last year, when it was resumed; but it was dropped again this year on the ground that there was a shortage of rolling stock.

The commission has also re-arranged the terminals and ports of call for the various coasting steamships, and expects to effect substantial improvements in this way.

What the net result will be it is difficult to say. The saving which the cancelling of passes would represent is but small and can only be a drop in the bucket as compared with general expense of the service, though the step meets no criticism. As against it, however, the employes of all branches of the railway

have put before the commission a demand for an increase of 30% for all salaries under $1,000 and 20% for all salaries over that, and the conceding of these will increase to a goodly extent the cost of working the railway. Not improbably it may be followed by a similar demand from the crews of the coastal steamships. There will be a substantial saving made by abandoning the cross country express service during the winter, but the benefit to follow from the use of Argentia by the Northcliffe Co. is not easily seen, because at present a lot of the paper is shipped by this firm through Heart's Content, in Trinity Bay, or through St. John's, and while the company might ship more through Argentia, it would not likely exceed an extra cargo of 4,000 tons annually, and the extra freight on this would not pay in years, for the sheds that would have to be erected to protect the paper, while waiting for shipment, if the Government had to put them up, and as the Northcliffe people have such an equipment at Heart's Content already, they are not likely to repeat the experiment at Argentia.

The view is expressed in non-political quarters that the Government is taking a big risk in associating itself too closely with the operation of the railway in the light of the experience of Canada and the United States in this very same proposition. The U.S., it is argued, had to abandon the experiment within two years after having sunk a billion dollars therein. Canada began exactly as Newfoundland, by appointing government members on a board of directors to operate the Canadian Northern Ry., and had as a result to advance such large sums of money to finance the project that it had to take the line over altogether, doing somewhat the same thing with the Grand Trunk Ry., and now finding itself with an annual liability that may be this year $1,000,000,000.

As shown already, the cost of operating the Newfoundland Ry. alone was to the Reids for the fiscal year 1918-1919 about $500,000. That, it is understood, did not include the operating of the steamships, and it is not believed here that these could have been operated at a profit. The steamships the Government is operating in addition to these, are likewise believed to be unprofitable, and many people expect that a year from now, when the figures of the working of the combined system are available, they will show a shortage staggering in its proportions.—Montreal Star.

## Automatic Train Control Committee.

At a recent meeing, in New York, of the joint committee on automatic train control, which was appointed by President R. H. Aishton, of the American Railway Association, the following appointments were made:—Chairman of committee, C. E. Denney, Vice President and General Manager, New York, Chicago & St. Louis Rd.; vice chairman for operating division, T. H. Beacom, Vice President and General Manager, Chicago, Rock Island & Pacific Ry.; vice chairman for engineering division, A. M. Burt, Assistant to Operating Vice President, Northern Pacific Ry.; vice chairman for signal division, W. J. Eck, Signal and Electrical Superintendent, Southern Ry.; vice chairman for mechanical division, J. T. Wallis, Chief of Motive Power, Pennsylvania System.

The duties of the joint committee are to confer with the Interstate Commerce Commission, to prescribe rules for tests, and to arrange for actual tests. Under the Transportation Act, the Interstate Commerce Commission has authority to order any carrier, upon two years notice, to install automatic stops and train control of a design approved by the Commission.

## Co-ordination of Station Services, C.N.R. and G.T.P.R.

Under the general plan of co-ordination of Canadian National and Grand Trunk Pacific Railways at points where both lines have had stations heretofore, and where rail facilities will permit, but one station will be used for passenger business, and all passenger trains will operate in and out of such stations. The stations to be used are: at Yorkton, Sask., G.T.P.R.; Canora, Sask., C.N.R.; Saskatoon, Sask., C.N.R.; Moose Jaw, Sask., C.N.R.; Battleford, Sask., C.N.R.; Prince Albert, Sask., C.N.R.; Portage la Prarie, Man., G.T.P.R.

At Regina, Sask., separate stations are still maintained. All G.T.P.R. trains and C.N.R. Regina-Gravelbourg trains 53 and 54 operate to and from the G.T.P.R. station. All other trains operate to and from the union station.

Port Arthur-Fort William-Sioux Lookout, Ont., trains 181 and 182 now operate between Port Arthur and Sioux Lookout, running to and from the C.N.R. passenger stations at Port Arthur and Fort William, and the use of the C.P.R. Fort William station by them has been discontinued.

## Irish Railway Operation Discontinuances.

The following, reproduced from the Railway Magazine, London, Eng., is a sample of advertisements which have been appearing in Irish newspapers recently.

Great Northern Railway of Ireland.

Owing to the refusal of certain members of the company's staff to carry out their duties, a state of affairs has arisen which necessitates the closing of portions of the line for public traffic.

In addition to the Bundoran Branch the following sections of the line will be closed for passenger, goods, and live stock traffic ON AND FROM MONDAY, SEPT. 20, 1920:—

Dundalk to Enniskillen;
Carrickmacross Branch;
Cootehill Branch.

(Then follows a list of trains discontinued.)

For full particulars see posters at stations.

JOHN BAGWELL, General Manger.
Dublin, Sept. 15, 1920.

## Numbering of Canadian National Railways Locomotives.

A subscriber wrote Canadian Railway and Marine World recently as follows: "I would appreciate it very much if you could advise me what system the Canadian National Rys. have adopted in renumbering locomotives of the Canadian Government, Canadian Northern and other lines absorbed by the Canadian National. I know the Pacific type is 5000 to 5999, ten-wheel type 1000-1999, etc., but would like information to cover all classes, consolidation, Sante Fe, switch, road, etc."

The Canadian National Rys. Mechanical Department has furnished us with a copy of its general scheme of locomotive classification, in tabular form, as follows:—

| Class letter. | Type. | Wheel arrgt. |
|---|---|---|
| X | Miscellaneous . . | ..... |
| A | American or | 4-4-0 |
| B | 8-wheel . . | ..... |
| C | Mogul . . | 2-6-0 |
| D | ..... | ..... |
| E | ..... | ..... |
| F | 10-Wheel . . | 4-6-0 |
| G | ..... | ..... |
| H | ..... | ..... |
| I | ..... | ..... |
| L | Consolidation . . | 2-8-0 |
| M | ..... | ..... |
| N | ..... | ..... |
| R | Mikado . . | 2-8-2 |
| S | ..... | ..... |
| T | Santa Fe | 2-10-2 |
| J | Pacific . . | 4-6-2 |
| K | ..... | ..... |
| | Mountain . . | 4-8-2 |
| O | 6-wheel switch | 0-6-0 |
| P | 8-wheel switch | 0-8-0 |
| Q | 10-wheel switch | 0-10-0 |
| Z | Electric . . | ..... |

It will be noted that the various types of locomotives, such as consolidation, Pacific, 10-wheel, etc., are sub-divided, and these sub-divisions are governed by the diameters of the drivers. For instance, in classifying Pacific type locomotives, all with drivers 70 in. or less are in class J, and all with drivers over 70 in. in diameter are in class K.

Each of these classes is sub-divided J-1, J-2, K-1, K-2, etc. Locomotives that are of radically different design and size are put in different sub-classes, but when there are two or more classes which are all of the same general design, but merely differ in details, a further sub-division is made, as for instance, J-1-a, J-1-b, K-1-a, K-1-b, etc., so that the classification symbol on the cabs of locomotives shows not only the type but the class and sub-class of each, and this classification symbol is used instead of the locomotive numbers in referring to any particular class of locomotive.

Miscellaneous types are classified under the class letter X, which includes any narrow gauge locomotives, no matter what their particular type may be, also saddle tank locomotives, type 0-4-0, and any other odd types which do not come under any of which may be called the standard types.

The C.N.R. has no mountain type locomotives, so no class letter has been assigned to them, but nos. 6000 to 6999 have been reserved for them.

| Driving wheel diameters. | Road nos. assigned. |
|---|---|
| All diameters | 1 to 99 |
| 63 in. or less | 100 to 199 |
| Over 63 in. | 200 to 399 |
| 52 in. or less | 400 to 469 |
| 58 in. or less, but over 52 in. | 470 to 529 |
| Over 58 in. | 530 to 999 |
| 52 in. or less | 1000 to 1015 |
| 58 in. or less, but over 52 in. | 1016 to 1199 |
| 63 in. or less, but over 58 in. | 1200 to 1499 |
| Over 63 in. | 1500 to 1799 |
| 52 in. or less | 1800 to 1804 |
| 58 in. or less, but over 52 in. | 1805 to 2200 |
| Over 58 in. | 2201 to 2999 |
| 58 in. or less | 3000 to 3199 |
| 63 in. or less, but over 58 in. | 3200 to 3999 |
| 58 in. or less | 4000 to 4999 |
| 70 in. or less | 5000 to 5499 |
| Over 70 in. | 5500 to 5999 |
| ..... | 6000 to 6999 |
| All diameters | 7000 to 7999 |
| All diameters | 8000 to 8499 |
| All diameters | 8500 to 8999 |
| ..... | 9000 to 9999 |

## Improving Car Service on the Northern Pacific Railway.

On account of the extensive territory and widely varying conditions on the Northern Pacific Ry., it must necessarily use different methods best suited to local conditions on each division. Cars are distributed as between divisions by the Superintendent of Transportation, who has his headquarters in St. Paul, Minn. There cars are then distributed locally on each division by a car distributor, who reports direct to the superintendent of that division. Local distribution and local movement of cars is checked by travelling car service agents, who are on the line continuously and who report direct to the Superintendent of Transportation.

Each travelling car service agent is assigned to a territory comprising mileage which he can cover effectively. Each general superintendent has an assistant, who also devotes his attention almost exclusively to checking terminal movements and devising methods for improvement of car service at terminals and at local industries in his territory. All operating officers are working direct with shippers and consignees for more prompt unloading and for prompt and heavier loading. This direct appeal is regarded as more effective than distribution of literature.

The Northern Pacific is getting very satisfactory co-operation from shippers, and is inaugurating a plan of having shippers and consignees advised in advance of arrival of cars for unloading and loading, so that they may be prepared to begin unloading or loading, as the case may be, promptly when the car arrives. In the case of consignees, this method will frequently avoid delay in placing of car at point where consignee wants it, and also perhaps some delay due to taking up bill of lading in case of freight consigned to "shipper's order."

## Grain Inspected at Western Points.

The following figures, compiled by the Dominion Bureau of Statistics' Internal Trade Division, show the number of cars of grain inspected at Wininpeg and other points on the Western Division, during October, and for two months ended Oct. 1920 and 1919:—

| | Oct. 1920 | 2 mos. to Oct. 1920 | 2 mos. to Oct. 1919 |
|---|---|---|---|
| Canadian National Rys. | 10,362 | 15,864 | 15,745 |
| Canadian Pacific Ry. .. | 23,607 | 35,202 | 24,594 |
| Grand Trunk Pacific Ry. | 3,095 | 4,647 | 6,887 |
| Great Northern Ry. (Duluth) . . ..... | 16 | 117 | 340 |
| Totals . . .....37,080 | | 55,830 | 47,566 |

## Telegraph, Telephone and Cable Matters.

As stated in Canadian Railway and Marine World for October, the jurisdiction of G. D. Perry, General Manager, Great Northwestern Telegraph Co., Toronto, has been extended over the Grand Trunk Pacific Ry. telegraph lines. The position of Manager of Telegraphs, held formerly by H. Hulatt, has been abolished. Mr. Hulatt continues as Manager of Telegraphs, G.T.R.

The following appointments have been made in the Great Northwestern Telegraph Telegraph Co.'s Traffic Department:—General Traffic Superintendent, C. E. Davies, Toronto; Superintendent of Railway Service, Eastern Division, E. Kenward, Toronto; Superintendent of Railway Service, Western Division, R. M. McMillan, Winnipeg; District Traffic Superintendent, Montreal District, G. H. Walters, Montreal; District Traffic Superintendent, Western Division, B. S. Round, Winnipeg; Chief Electrician, H. K. Clarke, Toronto; Supervisor Wire Service, Geo. T. Trowhill, Toronto; Superviser of Traffic, C. C. Stewart, Toronto.

## Among the Express Companies.

The Canadian National Ex. Co. has opened offices at Van Bruyssels, Que., and Elsas, Sask (formerly Endat); and has closed its offices at Perthuis, Que., Agate, Ont., and Darwell, Alta.

The Express Traffic Association calls the attention of shippers to the susceptibility to damage by frost, of shipments during winter, and points out the necessity for better protective packing for fruits, vegetables, flowers, liquids, etc. Shipments are not always carried in heated trains, but are frequently hauled considerable distances in wagons in cities and towns, and are of necessity moved on station platform trucks where heated protection cannot always be provided. The association points out that express companies are not liable for any loss or damage to shipments caused by weather conditions which are beyond their control.

The second anniversay of the signing of the armistice was celebrated by a dinner in honor of returned men now engaged with Dominion Express Co. and attached to Montreal staff. The programme included speech, songs and recitations by local officials and employes. There was present a man who had seen service with the Italian Army, also one who fought side by side with those attached to the U.S. forces. Among the invited guests were: T. E. McDonnell, Vice President and General Manager; V. G. R. Vickers, former Superintendent of Atlantic Division, Montreal; J. J. Murray, General Superintendent, Eastern Division, Toronto; F. W. Branscombe, Superintendent, Atlantic Division, Montreal; H. A. Woodhouse, Assist. Superintendent, Atlantic Division, Montreal; D. Doody, Route Agent, Atlantic Division, Montreal; W. A. Clark, General Agent, Montreal; A. C. Thorn, Agent (in charge of operations), Montreal, and all returned soldiers at present engaged in the Montreal office, 82 in number. Two officials of the Brotherhood of Dominion Express Employes, Grand President Allan Paton, Montreal, and Grand Financial Secretary-Treasurer, J. Donaldson, Toronto, were also invited. C. Benson acted as chairman. The toast to the returned men was proposed by A. Paton and responded to by R. M. Robertson, a late member of the 73rd Royal Highlanders. The dinner was a great success and has sown a seed that will result in bringing together employer and employe in social festivities on more occasions in the future than in the past with a view to maintaining the same high spirit of loyalty and co-operation essential to the successful carrying on of service to the public. W. Frankton and F. Hipkin, of the Montreal city office, were chairman and secretary of the dinner committee.

## Grain in Store at Elevators.

Grain in store at public terminal elevators, interior terminal elevators, country elevators in Western Division, and public elevators in east, also at U.S. Atlantic seaboard ports. Prepared by the Dominion Bureau of Statistics, Internal Trade Division.

| Week ended Nov. 5th, 1920: | Wheat. Bush. | Oats. Bush. | Barley. Bush. | Flax. Bush. | Rye. Bush. | Totals. Bush. |
|---|---|---|---|---|---|---|
| Fort William ..... | | | | | | |
| C.P.R. ..... | 1,622,199 | 355,958 | 178,151 | ..... | 119,408 | 2,275,715 |
| Consolidated Elevator Co. ..... | 1,159,425 | 47,875 | 11,033 | 43,624 | 563 | 1,262,520 |
| Ogilvie Flour Mills Co. ..... | 708,323 | 72,242 | 69,866 | ..... | 3,464 | 952,895 |
| Western Terminal Elevator Co. ..... | 940,450 | 90,262 | 23,134 | 90,170 | 4,860 | 1,148,876 |
| G. T. Pacific ..... | 861,929 | 274,911 | 43,561 | 41,369 | 17,581 | 1,239,351 |
| Grain Growers' Grain Co. ..... | 1,180,299 | 583,390 | 119,544 | ..... | 58,242 | 1,941,475 |
| Fort William Elevator Co. ..... | 590,479 | 176,832 | 42,361 | 62,356 | 21,019 | 893,047 |
| Northwestern Elevator Co. ..... | 625,538 | 33,645 | 14,014 | 43 | *29 | 673,211 |
| Port Arthur— | | | | | | |
| Port Arthur Elevator Co. ..... | 2,262,382 | 557,364 | 215,648 | 272 | 51,376 | 3,087,042 |
| Sask. Co-op. Elevator Co. ..... | 2,320,799 | 177,096 | 18,367 | 104,710 | 23,924 | 2,644,896 |
| Canadian Government Elevator ..... | 258,887 | 318,934 | 37,753 | 235,526 | 33,739 | 774,839 |
| Davidson and Smith ..... | 19,955 | 3,189 | *15 | ..... | 201 | 25,330 |
| Total Public Terminal Elevators ... | 12,649,665 | 2,691,698 | 773,417 | 578,070 | 334,348 | 17,027,198 |
| Total Private Terminal Elevators | 1,804,675 | 987,171 | 125,289 | 13,310 | 53,148 | 3,105,593 |
| Saskatoon: Can. Gov't Elevator ..... | 43,906 | 9,121 | 181 | 1,654 | ..... | 54,862 |
| Moose Jaw: Can. Gov't Elevator ..... | 148,603 | 100,456 | ..... | 1,302 | 4,257 | 254,618 |
| Calgary: Can. Gov't Eleveator..... | 115,253 | 165,791 | 11,553 | 29 | 6,002 | 298,628 |
| Vancouver, B.C.: Can. Gov't Elevator | 2,574 | ..... | ..... | ..... | ..... | 2,574 |
| *Total Interior Terminal Elevators .. | 310,336 | 275,368 | 11,734 | 2,985 | 10,259 | 610,682 |
| Midland— | | | | | | |
| Midland Elevator Co. ..... | 81,191 | ..... | ..... | ..... | ..... | 81,191 |
| Tiffin, G.T.P. ..... | 738,944 | ..... | ..... | ..... | ..... | 738,944 |
| Port McNicoll ..... | 58,501 | 287,432 | 39,722 | ..... | ..... | 385,655 |
| Goderich— | | | | | | |
| Elevator and Transit Co. ..... | 74,403 | 12,047 | ..... | 5,822 | ..... | 92,272 |
| West Can. Flour Mills Co., Ltd. ..... | 243,169 | ..... | ..... | ..... | ..... | 243,169 |
| Toronto: Campbell Flour Mills Co..... | 20,160 | ..... | 3,049 | ..... | ..... | 23,209 |
| Kingston— | | | | | | |
| Commercial Elevator Co. ..... | 1,647 | 14,873 | 2,805 | ..... | ..... | 19,325 |
| Port Colborne— | | | | | | |
| Dom. Gov't Elevator ..... | 693,498 | ..... | 50,013 | ..... | ..... | 743,511 |
| †Maple Leaf Milling Co.. Ltd. ..... | 110,356 | ..... | ..... | ..... | ..... | 110,356 |
| Harbor Commissioners No. 1 and 2 | 2,081,186 | 573,036 | 169,106 | ..... | ..... | 2,823,328 |
| Montreal Warehousing Co. ..... | 362,443 | 163,856 | 119,076 | ..... | ..... | 645,375 |
| Ogilvie Flour Mills Co. ..... | 268,727 | ..... | 4,987 | ..... | ..... | 273,714 |
| Quebec Harbor Commissioners ..... | 2,629 | 3,926 | ..... | ..... | ..... | 6,555 |
| Total Public Elevators ..... | 4,736,854 | 1,055,170 | 388,758 | 5,822 | ..... | 6,186,604 |
| *Total Country Elevators ..... | 17,816,641 | 5,378,011 | 1,338,322 | 825,100 | ..... | 25,358,074 |
| U.S. Atlantic Seaboard Ports— | | | | | | |
| Baltimore, Md. ..... | 413,216 | ..... | ..... | ..... | 50,274 | 463,490 |
| Total U.S. Atlantic Seaboard Ports..... | 413,216 | ..... | ..... | ..... | 50,274 | 463,490 |
| Total Quantity in Store ..... | 37,731,387 | 10,387,418 | 2,637,520 | 1,547,287 | 448,029 | 52,751,641 |

*Overshipped.
†Week ending Oct. 29th, 1920.

S. C. Graham, General Yardmaster, Calgary Terminals, C.P.R., writes:—"I would not be without Canadian Railway and Marine World, as there are so many interesting articles therein."

# Electric Railway Department

## The Ontario Hydro Electric Railways Enquiry.

Mr. Justice Sutherland, chairman of the Commission appointed by the Ontario Government, to enquire into the Hydro Electric Power Commission of Ontario's radial railway projects, issued the following statement Nov. 13:—"The members of the Radial Railway Commission, a day or two after their last public meeting on Oct. 26, visited the New England and middle west states to see the lines of radial railways, suggested in the evidence already taken as to some extent analogous to, or comparable with, the lines of radial railways in Ontario in question, and other lines, and to make enquiries as to cost of construction, stock and bond issues, upkeep, maintenance and passenger and freight revenue. In the course of their investigations they met and conferred with the managers and operating officials of the railways. It is the intention of the commission, if possible, to call several of these men and obtain their experiences and expert testimony. They have also retained F. P. Gutelius, an experienced railway engineer and operating expert, to investigate and report on the questions involved in the enquiry, and to give evidence, if deemed advisable, before it. They have also secured the services of the firm of auditors, Price, Waterhouse & Co.

"When the Commission adjourned, it was expected that a public meeting, for the purpose of continuing taking evidence would be held at the end of this week, or the beginning of next, at which W. S. Murray, the engineer who made a report to the Hydro Electric Power Commission in May last with reference to the proposed construction of the Toronto and Bowmanville, the Toronto, Hamilton and Niagara Falls and the Hamilton, Guelph and Elmira radials, would be called, and certain other witnesses. It has been found impossible to secure their attendance before Nov. 22, when the next meeting will be held."

The commission appointed by the Ontario Government resumed its sittings in Toronto Nov. 22, the first witness called being W. S. Murray, Consulting Engineer, New York, who made a report os the Hydro Electric Power Commission of Ontario's Railway Projects in May at Sir Adam Beck's request. His evidence was largely a defence of his report. On subsequent days, up to Nov. 24, when this matter was written, other witnesses examined were C. E. Friend, Comptroller, Canadian National Rys., who testified in regard to Niagara, St. Catharines & Toronto Ry. and Toronto Suburban Ry. earnings, etc.; Lt. Col. G. C. Royce, General Manager, Toronto Suburban Ry., and E. P. Coleman, General Manager, Dominion Power & Transmission Co., who gave information in regard to their respective lines. The principal examination of witnesses was conducted by I. F. Hellmuth, K.C., counsel for the Government commission, the cross examinations being made by R. A. Mackay, K.C., representing the Ontario Hydro Electric Railway Association, and R. S. Robertson, representing municipalities either opposed or not interested in the hydro electric railway projects.

## Regina Public Utilities' Deficits.

The Regina, Sask., city aldermen met as a special committee recently, to discuss the deficit in the operation of the city's public utilities for the current financial year. It was reported that the civic utilities, which include the municipal railway, the electric lighting and power plant, and the waterworks, showed a deficit for the nine months ended Sept. 30 of $115,000, and that it was expected that with the installation of the new unit at the power house the deficit would be redeemed by the end of the year. Commissioner Thornton expressed the opinion that the deficit on the light and power plant might be reduced from about $66,000 to about $20,000 by the end of the year.

The deficit of the municipal railway for the 9 months ended Sept. 30 was reported to be $46,000, and Commissioner Thornton is reported to have expressed the opinion that, given favorable conditions, the deficit might be reduced to $36,000 by Dec. 31.

A report from D. W. Houston, Superintendent of the municipal railway, which was considered, is reported to have stated that the weekly average receipts for three months ended April 30 were $20,000, compared with $16,500 for the three months ended July 31 and $13,694 for the three months ended Oct. 31. These figures were for the second week only in each of the months and excluded returns for Saturdays and Mondays, which are very variable. The people generally, the report added, were not patronizing the street railway as they should. Mr. Houston suggested that better results would be secured if citizens, instead of paying the deficit in taxes, were to use the money for riding on the cars when they would reap the additional advantage conferred by the service given.

### Canadian Electric Railway Association.

**Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.**

**Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.**

**President, A. Gaboury, Superintendent, Montreal Tramways Co.**

**Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.**

**Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.**

**Executive Committee, The President, Vice President, and F. D. Burpee, Manager, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.**

**Official Organ—Canadian Railway and Marine World, Toronto.**

## British Columbia Electric Railway Fares and Expenditures.

Geo. Kidd, General Manager, British Columbia Electric Ry., is reported to have said in a recent interview that until the question of whether the company's lines are to remain under the Board of Railway Commissioners' jurisdiction or not is settled, no capital expenditures will be made. He is also reported to have said:—"Since the 6c. fare went into effect about $1,225,000 has been granted in wage increases. Last year wages and salaries totalled $3,452,565, and the increase which went into effect on Oct. 1 amounted to $250,000. There are 2,600 employes. To think of a 5c. fare would be impossible. Few street railways are operating on a 5c. fare today. The recent increases in wages make it impossible to return to the 5c. fare. Some effort should be made to stabilize the company's revenue, either by agreement or by other methods. The further raising of fares is not under consideration by the company.

## Winnipeg Electric Railway Preferred Stock Issue.

The Winnipeg Electric Ry. is issuing $3,000,000 cumulative 7% stock preferred as to dividends and assets, which will make its capitalization as follows:—

| | Authorized. | Outstanding. |
|---|---|---|
| Common stock | $11,000,000 | $11,000,000 |
| 7% Preferred stock (this issue) | 3,000,000 | 3,000,000 |
| Bonds and debenture stock (including subsidiaries) | | 10,245,000 |

The stock is being offered at 90, yielding 7¾%, with a bonus of 30% common stock. Following are extracts from the prospectus issued by Nesbitt, Thompson & Co., Montreal.

The company does a power, lighting and gas business, and operates the entire street railway system of the City of Winnipeg, consisting of 120 miles. It has a hydro electric development of 33,000 h.p. capacity and an auxiliary steam plant of 13,000 h.p. In addition the company controls a large undeveloped water power capable of 170,000 h.p. development capacity. The franchises, we consider, are very satisfactory.

The properties (exclusive of the large undeveloped water power), were valued by the Manitoba Public Utilities Commission at $24,369,431. This replacement value is equivalent to over $450 a share for the preferred stock, or about $100 a share for the common stock.

Average annual net earnings for the three pre-war years ended Dec. 31, 1914 (which would have been available for dividends on the present issue of preferred stock), were $1,148,193. Average annual net earnings for the three years ended Dec. 31, 1919, under very adverse and war conditions, which would have been available for dividends on present issue of preferred stock, were $496,637.

Preferred stock dividend, $210,000 (equal to almost two and one half times preferred dividend).

Estimated net earnings for current fiscal year, based on actual figures for first eight months, are $630,000 (equal to three times preferred dividend).

The Public Utilities Commissioner au-

thorized the company to increase its street railway fares to 7c. cash or 4 tickets for 25c., and to increase the price of gas to $1.75 per 1,000 ft. as from Sept. 1, 1920, and made the following statement in connection therewith: "To ensure continuance of a satisfactory service the rate must be such as will be attractive to investors. In my judgment 8% is the proper rate to fix."

The management of the company was taken over in Oct., 1917, by A. W. McLimont, who possesses a broad experience in the operation of public utility companies. Since his inception as Vice President and General Manager, the progress of the company, both as regards the goodwill of its patrons, and from an operating standpoint, has been very gratifying.

The proceeds of this issue will be used to retire notes and bank loans. With these paid off it is expected that the company will be in a position to recommence payment of dividends on its common stock within a reasonable time.

## The Question of Jurisdiction Over British Columbia Electric Railway.

The British Columbia Electric Ry. applied, last summer, to the Board of Railway Commissioners, for approval of a tariff of commutation fares. The Chief Commissioner expressed himself as not being altogether satisfied that the Railway Act, as amended and consolidated in 1919, placed the company under the Board's jurisdiction, inasmuch as the company's undertaking had not been declared a work for the general advantage of Canada, and in order to satisfy himself as to the Board's jurisdiction, he submitted a stated case to the Supreme Court, a draft copy of which has been furnished Canadian Railway and Marine World as follows:—

"In the matter of the application of the British Columbia Electric Ry. Co., Ltd., for approval of tariff of commutation fares, B.C.E.R. 30, C.R.C. 21, between points on its Central Park line, District 1, between Vancouver and New Westminster. The following case is stated by the Board of Railway Commissioners for Canada for the opinion of the Supreme Court of Canada:

"1. The company was incorporated in England, under the Imperial Companies Act, 1862 and 1893, with head office in London, and was licensed under the B.C. Companies Act to carry on business in B.C., with its head office at Vancouver, for the purpose (among other things) of taking over and acquiring all the business, franchises, rights, powers, and all the other assets of the Consolidated Ry. Co., a company incorporated by special act of the B.C. Legislature by 57 Victoria, chap 56, being The Consolidated Railway and Light Company's Act, 1894, which act was amended and consolidated with certain other acts by special act of the B.C. Legislature by 59 Victoria, chap. 55, being The Consolidated Railway Company's Act, 1896.

"2. The B.C. Electric Ry. Co. has leased and operates, as part of its system, the railway lines Vancouver & Lulu Island Ry. Co. and the Vancouver, Fraser Valley & Southern Ry. Co., the undertakings of which companies have been declared by Parliament to be works for the general advantage of Canada.

"3. That, so far as the operation by the B.C.E.R. Co. of the Vancouver & Lulu Island and the Vancouver, Fraser Valley & Southern Ry. is concerned, it is admitted that such operation is under the Board's jurisdiction.

"4. Sec. 6, par. (c), of the Railway Act, 1919, provides as follows:—

" 'Every railway or portion thereof, whether constructed under the authority of the Parliament of Canada or not, now or hereafter owned, controlled, leased, or operated by a company wholly or partly within the legislative authority of the Parliament of Canada, whether such ownership, control, or first mentioned operation is acquired or exercised by purchase, lease, agreement, or other means whatsoever, and whether acquired or exercised under authority of the Parliament of Canada, or of the legislature of any province, or otherwise howsoever; and every railway or portion thereof, now or hereafter so owned, controlled, leased, or operated shall be deemed and is hereby declared to be a work for the general advantage of Canada.'

"5. By act of the Parliament of Canada, passed in 1920, chap. 65, it was provided as follows:—

" 'Sec. 6 of The Railway Act, 1919, chap. 68 of the statutes of 1919, is amended by adding thereto the following subsection:

" '2. The provisions of paragraph (c) of this section shall be deemed not to include or apply to any street railway, electric suburban railway or tramway constructed under the athority of a provincial legislature, and which has not been declared to be a work for the general advantage of Canada otherwise than by the provisions of the said paragraph. Provided that this subsection shall not affect or come into force with respect to any street railway, electric suburban railway, or tramway in the Province of British Columbia until the expiration of one year from the passing of this act.'

"6. Objection has been taken to the jurisdiction of the Board to deal with this application, on the ground, shortly stated, that a general provision, declaring the undertaking of unnamed companies' works for the general advantage of Canada, is not effective to bring such companies within the legislative authority of the Parliament of Canada, and therefore under the jurisdiction of the Board; that such declaration to be effective must be made in express words, specifying particularly the company or companies sought to be affected.

"7. The question which the Board, in pursuance of the powers conferred upon it by the Railway Act, 1919, submits for the opinion of the Supreme Court of Canada is: 'Whether, under the above facts and legislation, those portions of the system of the B.C.E. Ry. Co., other than the Vancouver & Lulu Island and the Vancouver, Fraser Valley & Southern Ry. Companies, wholly situate in the Province of British Columbia, have been declared by Parliament to be a work or works for the general advantage of Canada, or whether specific reference to the company in the foregoing legislation will be necessary for that purpose?' "

The matter came before Mr. Justice Anglin, of the Supreme Court, at Ottawa, Sept. 29, who ordered that it be provisionally set down for hearing at the end of the western list of cases inscribed for the Court's autumn session, notice of the hearing to be given to all parties who appeared on the application to the Board of Railway Commissioners and that any parties desiring to file factums do so before Oct. 20.

We were officially advised Nov. 18 that there was not time for the parties to prepare and file their factums for the Supreme Court's October session, and, by consent, the case was enlarged and will probably be heard at the February sittings.

## Winnipeg Street Railway Situation.

From Winnipeg Electric Railway Public Service News.

The story is told of the fly that, riding on the wheel of a racing chariot, exclaimed "My! what a dust I am raising." The professional trouble makers and others who seek to ride into public favor at the expense of the public utilities are very much like the fly.

The efforts to create an unreasonable opposition to what is, perhaps, Winnipeg's most important utility—the street railway—is contrary to the spirit of united effort which is so generally urged at this time. During this period of reconstruction there should be no divided interests in matters that are so close to the public welfare and to the progress of any community as its street railway system.

The trend of events in every section of the country shows that municipalities are awakening to the fact that street railways should be treated as friends and not as enemies. Where this spirit is dominant it is significant that the service is the best, that extensions are proceeding and the needs of the community served to the best advantage. If, in Winnipeg, the street railway service is not to be lessened, if general business development is not to be stunted, the street railway problms, which are of necessity the problems of the city, must be approached in a spirit of honest co-operation and in a desire to give careful and fair minded consideration to all the facts. There must be sane discussion and common sense. It is easy to criticise, it is easy to cripple, but it is a difficult thing to build for the future.

The street railway must have the co-operation of the public if it is to grow, and likewise nothing can deaden the progressive movement of Winnipeg so much as the stagnation of its street railway.

Rows make good newspaper copy, and co-operation does not, but in the long run the public, through its representatives, and the street railway will have to pool their interests and pull together if either is to prosper—and they will not prosper separately.

## Canadian Street Car Fares.

A very small percentage of car riders in Winnipeg pay the cash fare of 7c. Most of them buy tickets which give them their ride for 6¼c. Compared with many other cities in Canada and the United States, Winnipeg's street car fare is low. In the United States 170 cities have 7c. fares, 55 cities have 8c. fares, and in 26 cities the rate is 7c. with 1c. extra for transfer. The number of cities in which the fare is 10c. is now approaching the one hundred mark.

We have just had compiled a list of street car fares in cities in Canada. This compilation shows that in Sydney, N.S., Levis, Que., and on the Regina, Calgary and Saskatoon municipally owned lines, the rate of fare is 10c., with no reduced tickets except for children.

Sherbrooke, Que., has an 8c. fare, while the following cities have a 7c. fare:—Quebec, Fort William (municipally owned), Halifax, Montreal and Edmonton. In the last city, the street railway is municipally owned and the city commissioners have applied for a 10c. fare because the 7c. fare did not meet the cost of giving service.—Winnipeg Electric Railway Public Service News.

## Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry. — The company was asked recently by Vancouver City Council for an extension of Broadway East line; for the connecting up of the Georgia St. viaduct, and the running of through cars on it and for increased service in other parts of the city. The management replied that the extensions and increases in service were not justified. In addition, it pointed out that as long as the fares charged are in jeopardy, owing to the possibility that the company might be thrust back upon the terms of the original franchise, no further capital expenditures could be made on the railway. The company is prevented from obtaining more rolling stock, owing to the proposed change in the rule of the road.

Burnaby municipality applied to the Board of Railway Commissioners recently for an order for a crossing over the company's interurban railway at Salisbury road, but the matter was deferred pending the Supreme Court's decision as to the Board's jurisdiction over the company.

Hamilton Radial Ry.—A press report states that a contract has been let by the Dominion Government for the erection of a new bridge across the canal at Burlington Beach, Ont. The work is not expected to be completed for about a year. Pending the erection of the bridge the Hamilton Radial Ry. will operate its cars from Hamilton to the canal bank, and from the opposite bank of the canal to Oakville, passengers walking from one car to the other along a temporary foot bridge. It was expected that an arrangement could have been made for the operation of the cars across the G.T.R. bridge, but the matter of terms could not be agreed upon. (May, pg. 257.)

London & Port Stanley Ry.—The London, Ont., City Council has approved of the submission of a bylaw to a vote of the ratepayers on Jan. 1, 1921, to issue debentures for $257,500 for the L. & P. S. Ry. It is said that the whole of the line will have to be reballasted next year, and that other expenditures will have to be incurred to maintain the roadbed in good condition.

Hamilton St. Ry.—A press report of Nov. 6, stated that no further work would be done on the lines in Hamilton, Ont., during this year, and that there was no prospect of the tracks on Wentworth St. being relaid, as the city council was not prepared to go on with the necessary paving. (Oct., pg. 561.)

Montreal Tramways Co.—A press report states that the company has been instructed by the Montreal Tramways Commission to replace two sections of track on St. Catherine St., which had been removed from the usual location and laid close to the sidewalk as a temporary measure, during sewer reconstruction by the city council. (Sept., pg. 503.)

We are officially advised that the company has under construction the following sections of new single track: Kelly St. extension, Alimistic St. to Bordeaux St., 2.30 miles; Park Ave. extension, Atlantic Ave. to Ball St., 0.95 of a mile. The following betterments are also being carried out:—Cote St. Catherines Rd., 1.69 miles single track; St. Catherines line, Marboro to Prefontaine, 0.22 of a mile, single track; Notre Dame line, Montcalm to Craig, 1.25 miles, single track; St. Catherine line, Victoria to Glen, 0.15 of a mile, single track, and Greene to Atwater, 0.48 of a mile, single track. There is also under construction a substation at Cote St. (Sept., pg. 503.)

Three Rivers Traction Co. has, we are officially advised, completed the erection of a small brick car barn of 9 cars capacity at Three Rivers, Que., and it has also made some extensions to its old car barn.

Niagara, St. Catharines & Toronto Ry. A press report states that the company is building an addition to its car barns and shops on Welland Ave., St. Catharines, Ont., that the addition is 100 x 200 ft., is of brick and steel with concrete floor, that the machine shop will be in the center of the building, and that when completed the entire building will be 200 x 400 ft. (Sept., pg. 503.)

Ottawa Electric Ry.—A press report of Nov. 16 stated that automatic switches had been installed at the corner of Bank and Sparks Sts.; at the corner of Bank and Queen Sts.; two at the junction of Elgin and Sparks Sts.; at the corner of Sussex and Rideau Sts., and that it is expected that automatic switches will be installed at other junction points next summer. (May, pg. 257.)

Sherbrooke Ry. & Power Co. is, we are officially advised, contemplating making a small extension to its car barns. (Dec., 1919, pg. 670.)

## Mainly About Electric Railway People.

R. A. Brown, who is Superintendent, Calgary Municipal Ry., as well as having charge of the Calgary city electric light and power plant, has been elected a councillor of the recently formed Alberta Association of Professional Engineers.

Ernest P. Fredericks, who came to Canada from Massachusetts, some two or three years ago, and organized the Association of Holders of Public Utilities Securities, in Toronto, who subsequently located in Ottawa, and later became Secretary-Manager of the Belleville, Ont., Chamber of Commerce, has resigned that position.

T. H. McCauley, General Manager, New Brunswick Power Co., is reported in St. John, N.B., papers as having resigned. He was appointed last spring, having previously been Manager of Calgary Municipal Ry.

H. A. McLean, of Sarnia, Ont., has been appointed Manager, Moose Jaw Electric Ry., Moose Jaw, Sask., succeeding A. H. Dion, whose resignation was announced in our last issue. He is a brother of J. A. McLean, President, Manitoba University, and is a graduate in mechanical and electrical engineering of Ann Arbor University, Mich. He was engaged, during the war, on munitions work, at Trenton, Ont.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., has been elected President, Vancouver Canadian Club, of which he was Vice President during the past term.

E. F. Seixas, General Manager, Monterey Ry., Light & Power Co., Monterey, Mexico, spent a short time in Toronto recently and returned to Monterey, with his wife and family, who had been in Toronto during the summer.

## Answers to Electric Railway Questions.

The following are among answers to questions sent to the American Electric Railway Association's question box:—

**Equipment.**—What are the relative advantages at the present time of chilled cast iron wheels vs. steel wheels?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.:—For city service we find a good cast iron wheel just as satisfactory as any steel wheel and very much more economical. The chief objection to cast iron wheels is liability to chipped and broken flanges. These troubles have been practically eliminated, by careful attention to moulding practice. Our flange dimensions are 1 3/16 x ⅝ in., and we insist on the elimination of any sign of the parting line between sand mould and chill. This is ground off by the manufacturer.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.:—None from our experience. We are replacing cast iron and rolled steel wheels, which when worn and turned to limit are made into centers upon which tires are shrunk, restoring the wheel to original diameter. In operation cast wheels are rougher and make more noise, tending to reduce life of axles and bearings, unless ground smooth when put on, which would materially shorten their life. They also show a greater tendency to skid, and when flat spots develop have to be scrapped. Other troubles are clipped flanges and broken treads, neither of which occur to steel wheels, which are almost invariably sent to shop for worm flanges, and since this condition comes gradually, steel wheels can be shopped at the convenience of the shops and all the wheels of a car attended to at once. On the other hand cast wheels fail one at a time, and must be shopped at once, and for this reason cast iron equipments are sent to shop five times for every twice the steel equipments are shopped. Unless they are severe, flat spots on steel wheels disappear in a few days without requiring attention in the shop. As to the comparative cost, I give below figures based on last market quotations received, the ultimate cost in ten years being for seven renewals of cast wheels, compared with one renewal of steel wheels, and two sets of tires on an original set of wheels:

| City service wheels. | Cast iron | Rolled steel | Tires |
|---|---|---|---|
| Diameter of wheel, new.. | 33" | 34" | 34" |
| Weight, new, in lbs. ..... | 510 | 600 | 340 |
| Average life, in miles .... | 46,000 | 195,000 | 176,000 |
| Average life, in months.. | 14 | 58 | 53 |
| Weight after removal, in lbs. . ..... | 420,460 | (300) | 100 |
| Cost when new (1920).... | $27.00 | $54.00 | $30.00 |
| Machinery, mounting and renewal . . ..... | 1.00 | 1.00 | 1.30 |
| Cost of three turnings.... | ..... | 1.65 | 1.65 |
| Credit for scrap (1920).... | 7.00 | (nil) | .95 |
| Total net cost per wheel.. | $21.00 | $56.65 | $32.00 |
| Total cost at end of 10 years . . ..... | $175.00 | $168.30 | $120.00 |
| Average per 1,000 miles.... | 0.438 | 0.421 | 0.300 |

**Motor Commutators.**—Do you practice undercutting of mica of the commutators of railway motors, with the use of soft brushes, and if so, with what results?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.:—We have practiced undercutting of mica in commutators for several years. The results have been such that the life of commutators will likely full equal that of the armature cores themselves.

**Equipment Standardization.** — Please furnish a list of simple equipment parts which in your opinion should be standardized.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.:—Brake heads and hangers (to conform with A.E.R.A. standard shoes). Journal boxes, wedges and check-plates. Motor bearing liners (for standard sizes of axles and motors) and system of lubrication.

Trolley wheels—depth and contour of grooves and dimensions of hub and pin.

Standard flexible cables for car wiring and motor connections—for each standard rating of motor, including insulation for 600, 1200 and 1500 volts.

**Schedule Speeds.** — Please furnish a statement of the schedule speed on three of your typical routes in city operation, representing respectively a high, medium and slow speed line Please furnish speed both with and without layover and for both base and rush-hour schedule.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.:—During morning hours, 6 to 10.30 a.m., speed without layover, 10.2 miles an hour. With layover, 9.3 miles an hour.

Normal time throughout day, 9.3 miles an hour without layover and 8.8 with layover.

Evening rush, 8.4 without layover and 7.8 miles an hour with layover.

Owl cars (after midnight), 11.2 miles an hour without layover. (No layover provided for after midnight.)

## Street Railway Fare Advances.

The Cleveland, Ohio, Ry. has increased its fares from 5c. to 6c. cash, or 9 tickets for 50c., with a charge of 1c. for transfers.

The residents in 345 United States cities with a population of over 22,000,000 people are now paying street car fares of 7c. or more. Six and a half million people pay 10c. cash.

Illinois Public Utilities Commission has sustained the 8c. street car fare in Chicago and made it permanent. The city opposed the application and asked that the franchise rate of 5c. be restored.

Italian street car fares have been raised in the day time from 6c. to 9c., and at night from 8c. to 15c. It is said that a ride on a night street car now costs 50% more than a ride in a cab prior to the war.

Manchester, Eng., has a municipal tramway system. According to official figures it has, for the past two years, been losing at the rate of $20,000 weekly. To increase revenues, the length of zones has been reduced.

A short time ago it was found that the 6c. fare in Kansas City, Mo., was not sufficient to permit the company to meet operating expenses, and so it was advanced to 8c. But even this fare failed to produce the revenue required and the company went into bankruptcy. The press and public bodies of Kansas City are criticising those who permitted the city to receive such a black eye, and are loud in deploring the situation.

Two weeks ago street car fares in Philadelphia were raised from 5c. to 7c. One week ago car fares in Cleveland were boosted to 6c. Both these cities have been freely referred to by press and public as "low fare cities of the continent." Speaking about Cleveland, reminds us that Cleveland riders do not have to include any such enormous franchise taxes and paving obligations in their car fares as Winnipeg car riders do. This Cleveland Street Ry. operates under an ideal franchise. In Cleveland the rider pays for a ride. In Winnipeg he not only pays for a ride, but helps to pay for a paving block and a tax bill every time he boards a car. It's not the company's fault. It's the law.—Winnipeg Railway Public Service News.

## London Street Railway Situation.

The Ontario Railway and Municipal Board is reported to have advised the London, Ont., city council that the results of the operation of the line during October were that after paying the conductors and motormen the guaranteed maximum wages of 48c. an hour, and after making provision for bond redemption and other charges, there was a surplus of $17.36.

It is only out of any surplus so remaining that any increase of wages can be given the men. The men agreed to operate the cars for a certain time at maximum rate of 48c. an hour, with a hope of getting an increase to 52c. The Ontario Railway and Municipal Board, which continues to operate the line, has never had anything in the way of a surplus which would justify the granting of any proportion of the increased wages asked, with the result that the whole question of wages is still unsettled. The men continue to threaten to strike, but have not done more than threaten up to date. It is claimed that the Ontario Railway and Municipal Board may abandon the accumulation of the necessary amount for the redemption of bonds and so release a considerable sum for an increase of wages. However, nothing has been done; the line is still being operated, and developments are being awaited by all parties.

## Hydro Electric Power Commission of Ontario's Railway Projects.

Several matters in connection with the proposed electric railway lines into Hamilton came up for discussion between F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario, and the city council's railway committee Nov. 13. The particular matter considered was the entrance of the provincial highway into the city, and its relation to projected electric railway construction. It was decided to ask the Ontario Highway's Department to reconsider its plans for taking for a highway entrance the route planned for the electric railway entrance. Some other matters in connection with bridges were discussed, but it was stated that nothing definite could be settled until after the Royal Commission on the hydro electric radial railway's projects reports.

Representatives of municipalities within which the Niagara, St. Catharines & Toronto Ry. operates, met at Thorold, Nov. 12, to decide what steps should be taken to have the N., St. C. & T. Ry. made part of the projected hydro electric radial railway system in the Niagara peninsula.

A press report states that arrangetween the Hydro Electric Power Comments are being made for a meeting bemission of Ontario and representatives of municipalities between Port Burwell and London, as to plans for building of an electric railway.

A plan showing the proposed route of the Toronto Eastern Ry. through the City of Toronto and York and Scarborough townships is reported to have been filed in the country registry office. The line will, it is said, start at the foot of Bay St. and will run east on private right of way on land to be made by the Harbor Commission. After crossing the Don the road will run along Keating St. nearly to Leslie St., where it turns slightly north and runs through a block between Leslie St. and Morley Ave. south of Eastern Ave., which has already been acquired by the Hydro Electric Power Commission. The route laid out continues northerly and easterly to Danforth Ave., and then easterly across blocks of unbuilt-on property, a good deal of which, however, is laid out for building lots—leaving York Tp. at Dawes Road, and then across Scarborough Tp. to Scarborough Jct.

## Guelph Radial Railway Matters.

We are officially advised that the Guelph, Ont., City Council has decided to terminate the agreement between the city and the Hydro Electric Power Commission of Ontario, under which the Commission was to acquire the railway. This course, we are advised, is rendered necessary because of the Ontario Government's decision that until all the municipalities interested in the Hamilton-Guelph-Elmira hydro electric railway line project have voted to include the Guelph Radial Ry., it cannot approve of the proposed purchase.

The city council has decided to apply at the next session of the Ontario Legislature for permission to increase the Guelph Radial Ry.'s capital stock by $250,000, and to increase the fares from 5c. cash or 6 tickets for 25c., to 7c. cash or 4 tickets for 25c., and double fares after 11 p.m. The fares on the line are fixed by statute, and can therefore only be changed by statute.

The city council intends, provided assent is given by the Ontario Government, to submit to the ratepayers a question asking them whether they wish the municipality to operate its own electric railway, or whether they wish the Hydro Electric Power Commission of Ontario to operate it under existing arrangements; and, in addition, whether they would care to have the city enter into an agreement with the C.P.R., satisfactory to both parties, for the operation of the municipal railway.

In connection with the suggestion as to the C.P.R. operating the line, F. L. Wanklyn, General Executive Assistant, C.P.R., has written a city official that as citizens had voted against entering into a contract with the C.P.R. in Aug. 1919, the company has no wish to reopen negotiations in any way.

The Hydro Electric Power Commission of Ontario is reported to be ready to enter into a contract for the operation of the line.

**Negotiations for sale of Toronto Railway, etc.**—The Toronto City Council will meet specially, Dec. 1, to receive a report on negotiations for the purchase of the electric railway, power and light interests of the Toronto Ry., and itis subsidiary and allied companies, by the City of Toronto and the Hydro Electric Power Commission of Ontario.

**Lambeth Motor Transport Co.** was inaugurated about two years ago to carry freight and passengers between Lambeth and London, Ont., following the abandonment of the London & Lake Erie Ry. and Transportation Co.'s electric line. A meeting of shareholders was called to be held in Lambeth, Nov. 12, to consider the company's financial position and to decide relative to its being wound up.

## Calgary Municipal Railway's Finances.

The Calgary, Alta., City Council passed a resolution, Oct. 25, authorizing the submission to the ratepayers at the December elections of a bylaw to raise $265,000 by debentures to adjust the Calgary Municipal Ry. finances. The city commissioners, in recommending the taking of this action, said:—"We recommend that a bylaw for $265,000 to adjust the finances of the street railway department be prepared and submitted to a vote of the ratepayers at the forthcoming municipal elections. With the approval of the council there will have been expended by Dec. 31, 1920, on capital account $256,308.83. It is estimated there will be a loss on sale of the debentures of $8,691.11 (approximately 3%), making a total of $256,000. The sum of $23,308.83 has been expended on capital account for the creation of various assets and should now be included in a bylaw, thereby converting the temporary debt into a long term one. This expenditure extends over a period from 1914 to 1920. During that period the department has contributed to its sinking fund reserve $311,555.09. At the time authorizations were made by council, this expenditure was ordered charged to revenue surplus, and depreciation reserve, temporarily, to be later included in a bylaw. These accounts will now be relieved of these temporary charges and a sufficient amount can be transferred from surplus revenue to bring the depreciation reserve to what it would have been had no reduction taken place on account of the war." It was also explained that the capital account of the railway included $15,000, cost of installing a new intersection on Center St.; $1,391.39 for handling and store charges on rails for the Center St. extension, and $1,098.45 for similar charges on other street railway material and switches. The total cost of the intersection at Center St. was reported to have been about $51,000.

The city's request to the Alberta Public Utilities Commission for authority to issue bonds for the amount mentioned in the bylaw has been considered, and the Commission's Secretary wrote the Mayor, Nov. 4, as follows:—"In reference to the application made by you on behalf of the city for permission to issue debentures to the amount of $265,000 to cover over-expenditure on capital account of the street railway company, I am directed by the Board to indicate the Board's position in regard to it. It is desired in the first place to point out that the city's application is made after the expenditure has actually been incurred, and that the time for any application for permission to borrow on debentures should be made before the expenditure of the money, and not afterwards. It will be readily seen that the course adopted by the different councils of the City of Calgary within the last few years is entirely contrary to the spirit, not only of the Public Utilities Act, but also of the Calgary city charter.

"The city charter provides that all money bylaws will be first submitted to the burgesses, while the Public Utilities Act provides that all applications for approval of debenture issues shall be made to the Board of Public Utility Commissioners prior to, or immediately before, the first reading of the bylaw. Both these provisions provide a check upon the expenditure of monies by the city council, and it will be seen that if the money is first expended, and the approval of the board and the assent of the ratepayers is afterwards sought, the power to prevent the expenditure is rendered practically ineffective. While the Board desires, therefore, to express its disapproval of the course followed in this instance, as well as to indicate that consideration of applications of this nature is liable to be refused in the future, it is willing to consider the present application apart from the objection just mentioned.

"The proposed debenture issue is to cover capital expenditure made on the street railway system during the last seven years or so. From the statement submitted to the Board and from the information derived at the Board's interview with you and Mr. Brown, it appears that out of the amounts covered by proposed debentures $158,216.61 was taken from the depreciation fund of the street railway, and a further $98,092 was taken from what was termed the surplus revenue account of the railway. It appears, however, that in 1914 or thereabouts the amount to be set aside annually on account of depreciation was so reduced as to fail to meet the requirements of the depreciation account. In other words, what was placed in this surplus revenue account during this period was placed there at the expense of the depreciation fund. The whole amount, therefore, covered by the proposed debenture issue represents the impairment of the railway company's depreciation account.

"If, therefore, the Board approves of the whole issue, it must be on the understanding that the whole proceeds will be placed in this depreciation account. If the council does not desire to do this the Board is willing to approve of a portion of this amount to the extent of $158,216.61, which is the amount by which the actual depreciation account is shown to be now impaired, without taking into account any insufficiency in the amount hitherto set aside for this purpose. It will be understood, of course, that the proceeds of any such issue are to be placed in the depreciation account."

The letter from the Public Utilities Commission was discussed at a meeting of the city council, Nov. 8. A letter from City Comptroller W. C. Wood is reported to have been laid before the council stating in effect that the money had not been "taken" from the depreciation account, but had simply been temporarily borrowed. The mayor and several aldermen are said to have expressed the opinion that the Public Utilities Commission's criticism was justified. A resolution was passed for the submission of a bylaw to raise $265,000 for street railway purposes, and agreeing to the terms outlined in the Public Utilities Commission's letter, viz., that the total capiltaization of the expended borrowings shall be placed to the credit of the street railway depreciation account.

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**Motor Bus Limitations.**—English transportation authorities consider motor busses all right up to a certain point, beyond which street cars are imperative. J. B. Hamilton, General Manager of the Leeds Corporation Tramways, said recently: "To serve industrial centers with busses is like taking soup with a teaspoon, or eating haggis with a toothpick." He added that it was economical to use the bus only as a feeder to the city service.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry. Co.—Western Canada Power Co.**—At a meeting the bondholders of the Western Canada Power Co., in Montreal, Nov. 1, a resolution was passed waiving the right to issue any further bonds of the authorized issue of $20,000,000 authorizing the cancellation of $1,000,000 of the authorized issue held by the company, and making certain alterations in the trust deed; the resolution to become effective upon the British Columbia Electric Ry. Co. giving an unconditional guarantee of the principal and interest of the $5,000,000 of the authorized issue of bonds which were sold to the public. The effect of the resolution, when it becomes operative, will be that the company's bond issue will be restricted to the $5,000,000 now in the hands of the public.

**British Columbia Electric Ry.** and allied companies:—

| | Sept. 1920 | Sept. 1919 | 2 mos. to Sept. 30, 1920 | 2 mos. to Sept. 30, 1919 |
|---|---|---|---|---|
| Gross | $756,950 | $684,946 | $2,253,993 | $1,994,206 |
| Expenses | 573,623 | 503,135 | 1,707,697 | 1,496,478 |
| Net | 173,327 | 181,811 | 545,996 | 497,728 |

**Cape Breton Electric Co:—**

| | Sept. 1920 | Sept. 1919 | 9 mos. to Sept. 30, 1920 | 9 mos. to Sept. 30, 1919 |
|---|---|---|---|---|
| Gross | $59,478 | $49,404 | $456,969 | $426,514 |
| Expenses | 49,691 | 39,809 | 402,846 | 330,152 |
| Net | 9,787 | 9,595 | 54,123 | 96,362 |

**Montreal & Southern Counties Ry.** — Following are the officers and directors as elected recently:—President, Howard G. Kelley; Vice President and Treasurer, F. Scott; Vice President in charge of Operation, W. D. Robb; Vice President in charge of Traffic, J. E. Dalrymple; General Counsel, W. H. Biggar; Secretary, J. A. Yates; General Auditor, J. M. Rosevear; General Manager, W. B. Powell.

**Toronto Railway.—**

| | 1920 Receipts | 1920 City percentage | 1919 Receipts | 1919 City percentage |
|---|---|---|---|---|
| Jan. | $ 652,350 | $110,950 | $ 588,923 | $ 88,339 |
| Feb. | 595,861 | 119,172 | 545,771 | 96,563 |
| Mar. | 745,706 | 149,141 | 615,526 | 123,105 |
| Apr. | 653,340 | 130,668 | 600,231 | 120,046 |
| May | 644,458 | 132,892 | 620,068 | 124,014 |
| June | 544,833 | 108,966 | 431,082, | 86,217 |
| July | 641,793 | 128,539 | 534,412 | 128,359 |
| Aug. | 631,521 | 126,304 | 629,540 | 125,908 |
| Sept. | 690,546 | 55,243 | 641,422 | 51,313 |
| Oct. | 671,294 | 60,940 | 650,913 | 57,919 |
| | $6,491,702 | $1,122,635 | $5,857,888 | $1,001,783 |

**Toronto Ry., Toronto & York Radial Ry.** and allied companies:—

| | Sept. 1920 | Sept. 1919 | 9 mos. to Sept. 30, 1920 | 9 mos. to Sept. 30, 1919 |
|---|---|---|---|---|
| Gross | $1,270,651 | $1,124,159 | $10,731,396 | $9,318,458 |
| Expenses | 904,652 | 726,221 | 7,409,410 | 5,786,231 |
| Net | 365,999 | 397,938 | 3,321,986 | 3,532,227 |

**Winnipeg Electric Ry. Co.**—A special meeting of shareholders has been called to be held in Winnipeg, Dec. 4, to ratify a bylaw passed by the directors amending a bylaw to issue $3,000,000 of 7% cumulative preference stock approved by the shareholders May 3, 1920, by making provision for giving voting powers to the holders of such preference stock, and by providing that no further issue of preference stock in excess of $3,000,000 shall be authorized unless the authority is obtained of the holders of two-thirds in amount of the preferred stock issued and outstanding, and to ratify a bylaw of the directors increasing the common capital stock to $11,000,000.

**Winnipeg Electric Ry.** and allied companies:—

| | Sept. 1920 | Sept. 1919 | 9 mos. to Sept. 30, 1920 | 9 mos. to Sept. 30, 1919 |
|---|---|---|---|---|
| Gross | $426,647 | $381,248 | $3,831,649 | $2,947,060 |
| Expenses | 325,183 | 316,037 | 2,863,054 | 2,346,188 |
| Net | 101,464 | 65,211 | 968,575 | 600,872 |

## Electric Railway Notes.

Winnipeg Electric Ry. is adding 20 cars to its equipment.

The Toronto Ry. is reported as now owing the city $480,000 for percentages.

The Sherbrooke Ry. & Power Co. has ordered two safety cars from J. G. Brill Co., and will probably order another two in the near future.

Winnipeg Electric Ry. has added 6 snow sweepers to its snow fighting equipment and put them in use during a storm on Nov. 8.

A. B. Lambe addressed members of Ottawa branch, Engineering Institute of Canada at the Hull Electric Co.'s Deschesnes car sheds, Nov. 6, on "The common street car."

Winnipeg Electric Ry. was given permission, Nov. 9, by the City Council to operate a limited motor bus service on Notre Dame Ave. West. The permission is said to be merely a temporary one.

Montreal Tramways Co.'s employes who are members of the Union of Tramways Employes are reported to have been discussing the pension system, and to have appointed a special committee to study it.

Winnipeg Electric Ry. winter schedules went into effect Nov. 16, providing for 33 additional runs a day, to take care of the increasing traffic during winter when many motorists and cyclists turn to the street cars.

The London, Ont., City Council has decided to submit to the ratepayers at the annual elections on Jan. 1, 1921, a bylaw to raise $100,000 to buy motor busses in order to assist in solving the transportation problems there.

T. J. Hannigan, Secretary, Ontario Hydro Electric Railway Association, is reported to have stated, at a meeting in Toronto recently, that the shortage of power in Guelph had been so acute that it had been necessary to cease operating the municipal railway in the mornings, and for two hours in the afternoons.

Calgary Municipal Ry., according to a local press report, is better off, as regards rolling stock, than it has been for a long time. During the past six months, 12 cars have been added to the equipmen, six having been bought from Saskatoon Municipal Ry., and six in the U.S. It is now operating 84 passenger motor cars and 6 trailers.

The Amalgamated Association of Electric Railway Employes of America is reported to have announced that a satisfactory re-establishment of the International Union has been effected in Winnipeg. The report adds that the Street Railway Employes Unit, One Big Union, claims to have more than 900 of the 1,000 Winnipeg street car men on its roll.

The Montreal Administrative Commission has declined to act on a suggestion that it arrange with the Montreal Tramways Co. that the hours during which school children's tickets are available should be extended so as to run from 7.30 a.m. to 6.30 p.m. The Commission took the ground that this would be a revision of the contract, which might lead to agitation for other changes in it.

The Port Arthur, Ont., Public Utilities Commission is reported to have decided to remove the telephone pole line from the right of way of the electric railway between Port Arthur and Fort William to another route to remedy "noisy lines," which are believed to be caused by induction. It is expected that the work will be done next spring.

The new agreement made between the British Columbia Electric Ry. Co. and the Victoria City Council is expected to come into operation Dec. 1. The terms of the agreement as to fares were given in Canadian Railway and Marine World for November, the other matters included, outside the terms for sale of electric light and power, have not been made public.

The assessment of the London & Port Stanley Ry.'s property at Port Stanley, Ont., came before the Ontario Railway and Municipal Board at St. Thomas, Nov. 3. The local assessor increased the assessment of the property in the village from $31,000 to $113,000. An appeal was taken to the county court judge, who reduced the assessment to $89,000, against which the London Railway Commission appealed to the Ontario Railway and Municipal Board, which now has the matter under consideration.

The St. Thomas, Ont., City Council has been considering a bylaw to permit the municipal railway to operate its cars within the city on Sundays, which will be submitted to the ratepayers at the municipal elections on Jan. 1, 1921. The Ontario Legislature passed an act at its last session amending sec. 235 of the Ontario Railway Act, by substituting "15,000" for "50,000," wherever necessary, so as to permit cities of under 50,000 to vote on bylaw to authorize the operation of street cars on Sundays.

Regina, Sask., City Council was asked recently to operate the municipal railway's Eastview extension, and to put on some other services on the lines. Commissioner Thornton is reported to have advised the council that no expenditures should be made, on extensions or additional services, until the lines have been brought to a paying basis. The city commissioners recommended that the additional service be not given, and this has been adopted by the aldermen in committee.

The Quebec Court of Appeal recently dismissed the Montreal & Southern Counties Ry.'s appeal against a judgment of the Supreme Court giving Mrs. J. Dulude $10,000 damages for the death of her husband, who was killed when knocked from the seat of the vehicle he was driving on Mill St., Montreal. The Superior Court held that under the terms of its contract the company was responsible for the keeping of the street in good order, and that at the time of the accident which resulted in Dulude's death, the road was in very bad order.

Montreal Tramways Co.'s employes have been raising some questions respecting the new form of transfer used, and it is reported that their representatives discussed the matter with some of the company's officials on Nov. 11. The employes state that the new system causes much loss of time and inconvenience to conductors. They say they cannot perform their work efficiently under the present system. The officials called their attention to an official publication issued on Aug. 25, stating that conductors must punch transfers only when they are able to do so without interfering with the collection of all fares.

## Toronto Transportation Matters.

The Toronto Transportation Commission is reported to be making extensive investigations into matters connected with electric railway and other methods of transportation, and P. W. Ellis, the Chairman, is said to have stated that in making plans the commission ought to have in view the needs of a city of 2,000,000.

The Transportation Commission, after giving some general consideration to matters submitted to it, applied to the City Council recently for the passing of a bylaw to provide funds for buying motor busses. It is reported that the commission has decided on spending $1,000,000 upon busses. Several types have been submitted to the commission, one of which, it is stated, would have a speed of 35 miles an hour, and a seating capacity of 82 persons.

## Increases in Electric Railway Freight and Passenger Rates

British Columbia Electric Ry. — The proposed fare increases on the Central Park line must await a decision of the Supreme Court of Canada upon the jurisdiction of the Board of Railway Commissioners over the company. An appeal for higher fares on this line between Vancouver and New Westminster was made recently to the Board, but objected to by Burnaby municipality on the ground that the Board had no jurisdiction. The Board has accordingly requested a stated case and the Supreme Court has set it down for February.

The Grand River Ry., and the Lake Erie & Northern Ry., are applying to the Board of Railway Commissioners for authority to increase freight rates 40%, and passenger rates 20%.

Guelph Radial Ry. — The City of Guelph, which owns and operates this line, has decided to apply to the Ontario Legislature, for authority to increase fares from 5c. to 7c. cash, and from 6 tickets for 25c. to 4 tickets for 25c., the present rates being fixed by statute.

Pictou County Electric Co.—Halifax press report:—Some time ago the Pictou County Electric Co., operating in New Glasgow, and with lines connecting the towns of Stellarton, Westville and Trenton, obtained permission from the Nova Scotia Public Utilities Board to raise the fare 5c. to 7c. Recently it applied for permission to charge 10c. Higher costs for equipment and heavy charges for labor are the reasons adduced. The Board reserved its decision.

Winnipeg Electric Ry.—In connection with the Manitoba Public Utilities Commissioners recent decision authorizing the company to increase passenger fares, a deputation from Winnipeg City Council and the councils of the adjacent municipalities in which the company operates, either on its own account or by its subsidiary companies, waited on the Manitoba Attorney General recently and requested that the Government submit a stated case on the constitutionality of the Public Utilities Act to the Manitoba Court of Appeal. A press report states that the Attorney General, in assenting to the request, said that he did not wish that the Government's action should have any effect on the present litigation between the Winnipeg City Council and the company. Another press report states

that the cases will probably be dealt with concurrently by the Court of Appeal, and that whatever decision may be given, it will be appealed to the Imperial Privy Council.

## Dominion Power & Transmission Co.'s Bond Issue.

Harris, Forbes & Co., New York and Toronto, are offering, at prices to yield from 8 to 8¼%, $600,000 Dominion Power & Transmission Co.'s 5% gold bonds, dated April 1, 1907, due serially from April 1, 1921, to April 1, 1932, interest payable half yearly in New York and Chicago. Following are extracts from the prospectus:—The Dominion Power & Transmission Co., through its subsidiary companies does an electric light and power business and controls the entire street and interurban railway business in Hamilton, Ont., and vicinity, serving a growing population of about 200,000. The 50,400 h.p. water power plant is one of the most economical and valuable hydraulic plants in America, having Lake Erie as a storage basin, and a large and constant flow of water under a static head of 256 ft. (or over 50 ft. greater than at Niagara Falls). A new steam station has been built recently near Hamilton, having an initial 26,600 h.p. and an ultimate 80,000 h.p. capacity. With the addition of this new station the company now has a total installed generating capacity of 77,000 h.p. The street and interurban railway system comprises over 119 miles (single track equivalent), and the right of way for nearly the entire interurban mileage is owned in fee. The franchises, where same are necessary, are satisfactory. There is a large equity in the property of the company over and above its bonded debt. The earnings of properties controlled by the company for the year ended Sept. 30, 1920, were as follows:—

| | |
|---|---|
| Gross earnings | $3,714,384 |
| Operating expenses, taxes, etc. | 2,665,066 |
| Net earnings | $1,049,318 |
| Annual interest on bonds outstanding with public | 436,700 |
| Balance | $612,618 |

Net earnings over 2.4 times above interest charges.

Change of Opinion Towards Public Utilities.—A. W. McLimont, Vice President, Winnipeg Electric Ry., on returning recently from the United States, is reported to have said:—"The public generally is beginning to appreciate the importance of the service which the public utility performs for them. The entire status of the public utility is undergoing a change for the better in the United States and the change in sentiment there is going to be followed by a change in sentiment in this country regarding the utilities."

Origin of Tramways.—In Aug., 1800, the Surrey Iron Ry. Co. was incorporated in England to build a line to carry mineral traffic on cars on iron rails laid on the highway between Wandsworth and Croydon, just south of London. In 1802 it was proposed to carry passengers in vehicles running on rails on highways, and the plans were perfected by Benjamin Outram, the first passenger lines of this kind being called Outramways. Sometime later they were called tramways, which word was always used to designate horse drawn street cars in England.

## Instructions to Winnipeg Conductors and Motormen.

W. F. Edwards, Traffic Superintendent, Winnipeg Electric Ry., has issued the following bulletin to conductors and motormen:—"Your attention is particularly called to the necessity of properly caring for our patrons, to see that none are passed up on the street, particularly at points where passengers are required to transfer from one line to another. Before proceeding, both conductor and motorman should observe whether or not there is a car approaching from the other line, or whether or not passengers are unloading from a car at the intersection, and all transferring passengers should be given sufficient time to board your car.

"At a point where lines diverge the conductor and the motorman on the loading car should be particular to see that all passengers on the car immediately following have an opportunity to board their car before proceeding.

"The climatic conditions of Winnipeg during the winter are extremely severe, and your first consideration should be the comfort of our patrons. If men, women and children are required to wait for a car at transfer points, or if intending passengers are passed up, they are exposed to an extreme hardship.

"We earnestly ask your co-operation and insist that you use your best judgment in this and all matters appertaining to the handling of patrons of this company."

## Poor Old Utility.

A lady observing a mule owned by a colored boy asked: "What do you call your mule?"

"I calls him 'Utility.'"

"How did you come to give him such a name?"

"I'se been studyin' de animal and readin' de papers. Dat mule gets mo' blame an' abuse dan anything else in de city, an' goes ahead doin' his level best just de same."—Wall Street Journal.

## Telegraph, Telephone and Cable Matters.

K. J. Dunstan, Manager, Western Division, Bell Telephone Co. of Canada, Toronto, has been appointed Vice President, and A. T. Smith, Division Superintendent, has succeeded him as Manager, Western Division.

G. D. Perry, General Manager, Great Northwestern Telegraph Co., Toronto, was one of the British delegates to the preliminary allied conference on electrical communications which met in Washington, D.C., recently, the countries represented being Great Britain, France, Italy, Japan and the United States.

Sir Charles Bright, the British cable pioneer, speaking in connection with the U.S. complaint of the virtual control of U.S. telegraphs by the British, is reported to have said that such complaints are strange, having regard to the fact that in 1912, all British trans-Atlantic cables of that time went under the control of the Western Union Telegraph Co., and have since remained under that control.

The Great North Western Telegraph Co. has opened offices at Casey, Fisher and Gouin station, Que., Elmira, Endat, Madoc, Mowat and Pass Lake, Ont., Deepdale, Libau and Notre Dame de Lourdes, Man., Ardill and Lucky Lake, Sask., and Port Kells, B.C., and has closed its offices at Inch Arran House, Dalhousie, N.B., Abenakis Springs and Grand Metis, Que., and Chaffeys Locks, Harriston, Missonga and Rosseau, Ont.

Under legislation passed at the Newfoundland Parliament's last session a Department of Posts and Telegraphs has been established, under the Minister of Posts and Telegraphs, with the supervision and control of all matters relating to Newfoundland's postal and telegraph services. The act abolishes the position of Postmaster General, and all the duties hitherto undertaken by him are transferred to the new department.

It is reported that the U.S. Navy is making use of radio telephone sets for seaplanes, with which a transmission radius of over 150 miles has been obtained. The transmitter radiates at two wave lengths, 1,600 and 600 meters. For the former wave length a trailing wire antenna of 0.0004 mfd. is employed, for the latter an emergency aerial of 0.00026 mfd. The transmitter is supplied with two 3-electrode tubes of the pliotron type. One tube is employed as an oscillator for the production of radio-frequency currents and the other tube is employed as a modulator and as an amplifier of the voice currents that are communicated to it by the microphone.

A report that the Western Union Telegraph Co. intended to land a submarine cable at Miami, Fla., connecting with the British cable to South America, without obtaining U.S. permission, was denied by G. W. E. Atkins, Vice President of the company, Nov. 12. The British cable ship engaged in the work intended landing the cable at Miami, in July, and the U.S. Government sent a destroyer to prevent the ship from entering the three mile limit, the British Ambassador at Washington sending a message to those in charge of the cable ship that the operation was not to be carried out without a legal permit. The company's intention is to connect with the British cable to Brazil, with which country the British have exclusive cable rights.

A review of telegraph line construction during 1920, by a Montreal press correspondent states that the C.P.R. has strung 1,659 miles of new wire and rebuilt 535 miles; and that the Great North Western Telegraph Co. has strung two wires between Quebec, Que., and Winnipeg, a wire between Edmonton and Vancouver, and another between Saskatoon and Calgary. In Manitoba District, the C.P.R. strung 846 miles of wire and rebuilt 91 miles. New wires were erected between Fort William, Ont., and Moose Jaw, Sask., and lines rebuilt between Macgregor and Varco, and Winnipeg and Portage la Prairie. In the Saskatchewan District 387 miles of new wires were erected and 97 miles rebuilt, two new wires were strung between Saskatoon and Lanigan, a single wire between Saskatoon and Colonsay, two between Moose Jaw and Regina, and one between Moose Jaw and Saskatoon. In the Alberta District 272 miles of new wire were erected and 167 miles rebuilt. A new wire was erected between Wetaskiwin and Lacombe and two wires between Calgary and Lake Louise, while portions of the Edmonton line were rebuilt. In the British Columbia District 154 miles of new wire were erected and 180 of pole line rebuilt, chiefly on the main line. New wires were erected between Nanaimo and Victoria, and between Hope and Lytton.

# Marine Department

## General Shipbuilding Matters Throughout Canada.

**T. K. Bentley**, West Advocate, N.S., launched the schooner T. K. Bentley, 472 tons net, Oct. 30. She is owned by Bentley & Pugsley, and immediately on completion loaded cargo for Cuba. This is the last ship to be built here for the present, and the yard has been closed.

**B.C. Marine Engineers & Shipbuilders Ltd.**, Vancouver, B.C., which was incorporated recently, as stated in Canadian Railway and Marine World for October, took over the business of B.C. Marine Ltd. on Nov. 1. The officers are Innes Hopkins, Chairman and Managing Director; J. K. McKenzie, General Superintendent; and C. J. Isted, Secretary-Treasurer.

**Canadian Allis-Chalmers Ltd.**, Bridgeburg, Ont.—The steel cargo steamship North American, built by this company, which is illustrated on page 678, is a sister ship of the s.s. South American. These ships were built respectively for the North American Steamship Co. and the South American Steamship Co., which are subsidiary companies of the American Metal Transport Co., New York. The ships are registered in Canada, and the office of the subsidiary companies is at Toronto, the officers being the same in each case, viz.:President, W. E. Brady; Vice President, F. W. Miller; Treasurer, J. Beatty. The ships are of the same type as those ordered by the Imperial Munitions Board for the British Government during the war, and have approximately 3,500 d.w. tons capacity. The s.s. South America, which was completed some little time ago and left the yards early in November for Dalhousie, N.B., was driven ashore during a heavy snow storm on the ledges at Little Cape, about 12 miles east of the Fame Point in the St. Lawrence River.

A Bridgeburg press report of Nov. 23 states that the yard has been closed, and that no intimation has been made as to what use may be made of the plant on the reopening of navigation. Since the reopening of the plant during the later stages of the war, four steel cargo steamships have been built, two for the British Government, under orders from the Imperial Munitions Board, and the two mentioned above, viz., North American and South American.

**Canadian Concrete Shipbuilding Co.**, North Sydney, N.S.—The concrete ship Permanencia, built for W. N. McDonald, Sydney, N.S., is reported to be completed and to have been taken to Sydney, N.S., preparatory to proceeding to Newfoundland on her maiden trip. She is to be operated from Sydney, N.S., to Newfoundland and Prince Edward Island ports. She was built under Lloyd's special survey for the highest rating, and has a deadweight capacity of from 450 to 500 tons, and there is sleeping accommodation for 10 passengers in addition to the crew. The propelling machinery consists of a Bolinder crude oil engine of 240 b.h.p., for a speed of from 9 to 10 knots an hour. Her dimensions are,—length 120 ft., breadth 27 ft., depth 12.7 ft., tonnage 338 gross, 292 net.

**Harbour Marine Co.**, Victoria, B.C., advised Canadian Railway and Marine World recently that the car ferry being built for the C.P.R. will probably be ready for launching during the first week in December.

**L. P. McLean**, St. John, N.B., on Nov. 10, launched the three masted schooner, Peter McIntyre, 500 tons net, for Capt. P. McIntyre, St. John.

**New Burrell Johnson Iron Co.**, Yarmouth, N.S.—The Dominion Government s.s. Laurentian, which has been undergoing repairs by this company for some time, has been completed and she has left the yard for St. John, N.B. The engine and boilers have been thoroughly overhauled, new deck winches of increased capacity, new windlass, steering gear and other deck machinery have been installed. There have also been supplied a new dynamo and lighting system and all sanitary and heating equipment has been remodelled and brought up to date. While she was on the marine slip a number of new plates and frames were placed in the hull.

**Dominion Marine Association.**

**President**, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

**First Vice President**, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

**Second Vice President**, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

**Executive Committee**, W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; Lt. Col. G. P. Murphy, C.M.G., President, Ottawa Transportation Co., Ottawa, Ont.; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario. Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

**General Counsel**, Francis King, M.A., Kingston, Ont.

**Official Organ**, Canadian Railway and Marine World, Toronto.

**Nixon Construction Co.**, Vancouver, B. C.—The steam tug, which the C.P.R. ordered, together with a tow barge, for service on Okanagan Lake, as mentioned in a previous issue, was launched at Okanagan Landing, Oct. 20. The hull is of coast fir throughout, except the heads, and it is sheathed with cedar, planked with 2½ in. and ceiled with 2 in. coast fir. The hull is salted, and protected with galvanized sheets, 16 gauge, to enable the tug to operate in 10 in. of ice, should it be necessary. The propelling machinery consists of a single set of compound vertical condensing type of engines of 27.3 n.h.p., with cylinders 12 x 3 x 6 in. driving a single screw about 80 in. diar. Steam is supplied by a marine cylindrical type boiler, with two furnaces, at a working pressure of 160 lbs. The condenser is of the jet type 10 x 18 x 12 ins., and there are two duplex pumps, one 6 x 3¾ x 7 in. and one 5¼ x 3 x 6 in. The lighting plant is a Sisson 4 k.w. 55 volt machine. The boat is electrically lighted throughout, and a searchlight is mounted on top of the pilot house.

**Prince Rupert Drydock & Engineering Co.**—See under "Prince Rupert Drydock & Engineering Co.," on another page of this issue.

**Reid Newfoundland Co.**, St. John's, Nfld.—The Hudson's Bay Co.'s s.s. Pelican is being docked here for the winter, and several repairs and a general overhauling will be undertaken. While the ship was in Hudson Strait recently, she encountered heavy ice, and had her bow stove in and her rudder badly damaged.

**Three Rivers Shipyards Ltd.**, Three Rivers, Que.—This company, which is now in liquidation, and which is a subsidiary of the National Shipbuilding Corporation, Wilmington, Del., and also said to be in liquidation, has several claims against it which are being dealt with by the Superior Court. One of the claims heard at the end of October was by La Societe Naphthes Transports, France, for the possession of a steel tank steamship of 6,000 tons. The company placed a contract for the building of this ship with the National Shipbuilding Corporation, and the contract was transferred to Three Rivers Shipyards, Ltd. It is claimed that the ship was to cost a little over $1,000,000, which was to be paid in four instalments and that $600,000 has already been paid. Considerable work has been done on the ship, and it is stated that a few weeks work will make her ready for launching. The application for possession of the ship was contested by Molson's Bank, and the liquidator, the former claiming to have a mortgage on all the assets of Three Rivers Shipyards Ltd. The judgment, rendered Nov. 6, is given in full on another page of this issue. Another claim which has yet to come before the court is in behalf of the French government, which seeks to obtain possession of five steam barges, reported to be near completion. The contracts for these are stated to have been given to National Shipbuilding Corporation and transferred to Three Rivers Shipyards Ltd. Other claims which will also be dealt with by the court are as follows:—Crown Trust Co., for possession of company's assets, under a deed of trust for the security of the bondholders; liquidators of National Shipbuilding Corporation, claiming all the company's assets, and General Supply Co. of Canada for possession of certain machinery.

The wooden steamships Bouxwiller, Bouzonville, Brumath, Cattenon and Cernay have been completed and placed on the Canadian register by the liquidator. These ships were ordered by the French Government, but are in litigation. They are each equipped with wireless, and are screw driven by engines of 48 h.p., and have the following dimensions,—Bouxwiller, length 195.3 ft., breadth 40.3 ft., depth 15.2 ft., tonnage 1,138 gross, 660 net; Bouzonville, — length 195.1 ft., breadth 40.4 ft., depth 15.4 ft., tonnage 1,135 gross, 658 net; Brumath,—length 195.5 ft., breadth 40.1 ft., depth 15.3 ft., tonnage 1,141 gross, 662 net; Cattenon,—

length 196 ft., breadth 40.3 ft., depth 15.4 ft., tonnage 1,131 gross, 659 net; Cernay,—length 196.1 ft., breadth 40.1 ft., depth 15.3 ft., tonnage 1,123 gross, 654 net.

See also "Owners' rights in partially built ships under builder's liquidation proceedings" on another page of this issue.

Victoria (B.C.) Shipowners Ltd., Victoria, B.C.—The first of the four wooden barquentines, which are being built at the Cholberg shipyard, under special aid from the Dominion Government, is expected to be ready for launching about the middle of December. It is said that she will be christened S. F. Tolmie. Her dimensions will be,—length over all 250 ft., breadth 45 ft. 8 in., depth moulded 27½ ft., with a loaded draft of 21 ft. 10 in. It is reported that the second ship, to be named Sir Henry Drayton, will be launched about the middle of Jan., 1921. Work on the third ship is proceeding, and the keel of the fourth will be laid immediately after the launching of the first. The ships will be rigged as barquentines, with a sail area of 33,000 sq. ft., which is considerably in excess of the sail area usually carried by ships of this class.

The .ss. North American, built by Canadian Allis- Chalmers Ltd., Bridgeburg, Ont.

Wallace Shipbuilding & Dry Dock Co., North Vancouver, B.C.—We are officially advised that the C.P.R. has definitely placed a contract for the building of a steel passenger ship for its British Columbia Coast Service, with thsi company. The general plans and specifications were prepared under the immediate direction of J. W. Troup, Manager, B.C. Coast Service, C.P.R., the working out of the structural design of the ship being left to the builders. The ship is to conform to the requirements of the British Corporation Registry, under special survey, to class B2X with freeboard. The machinery is to be built by the shipbuilding company, under the supervision of James McGown, Superintendent Engineer, Canadian Pacific Steamship Lines. Her dimensions will be,—length b.p. 317 ft., beam 48 ft., depth of hold 18½ ft. She will have cellular double bottom, and the hull wil be divided by 8 transverse bukheads. She will be single screw, driven by reciprocating engines, balanced on the Yarrow, Schlick and Tweedie system, for a speed of 16 knots an hour. She is designed for an all around service on the coast. The accommodation will be arranged for about 200 first class passengers, with carrying capacity for about 600 tons of cargo. She will be equipped to burn oil fuel, and will be easily convertible into a coal burning ship. She will be amply lighted, and provided with hot and cold running water in every stateroom, with every modern convenience. The cost of the ship completed and fully furnished will be about $1,500,000.

Yarrows Ltd., Victoria, B.C.—W. W. Marriner, Works Manager, Yarrow & Co. Ltd., Glasgow, Scotland, was in Victoria recently to look over the plant, and to formulate a plan of expansion. It is stated that the company intends some further development in connection with the building of shallow draft steamships, of which a number were built at Victoria during the war, for use in India and Mesopotamia.

## Steamship Inspection Fees Fixed by Order in Council.

The following Dominion Order in Council 2,711 was passed Nov. 6:—Whereas the Minister of Marine and Fisheries reports that he has had under consideration a report of the Chairman of the Board of Steamship Inspection, stating—

That under the provisions of secs. 643 and 644 of The Canada Shipping Act, as amended, a scale of fees was approved by order in council of May 31, 1920, P.C. 1236, for the inspection of steamships registered in Canada;

That under the provisions of an order in council of April 11, 1904, a fee of 8c. per ton, gross registered tonnage, is charged for the inspection of passenger steamships inspected in Canada, when such ships are not registered in Canada;

That under the provisions of sec. 569 of The Canada Shipping Act, the Governor in Council is authorized to direct that part 7 of the act or certain provisions thereof shall apply or shall not apply to steamboats registered elsewhere than in Canada and further authorizes the Governor in council to fix a rate or duty for the inspection of such steamboats;

That as the matter now stands Canadian registered steamships, passenger and non-passenger, are subject to a fee for annual inspection and passenger steamships registered elsewhere than in Canada but coming under Canadian inspection, owing to the fact that they are operated out of Canadian ports are subject to an inspection fee of 8c. per ton, but as regards non-passenger ships not registered in Canada there appears to be some doubt in the matter of inspection fees;

And whereas the Chairman of the Board of Steamship Inspection recommends that authority be obtained for the collection of fees for the inspection of steamships registered other than in Canada, at the same rate as is now required to be paid for the inspection of steamships registered in Canada, applicable to both passenger and non-passenger steamships, dating from June 1, 1920, in which the Deputy Minister of the Department of Marine and Fisheries concurs,—

Therefore, the Governor General in council, on the recommendation of the Minister of Marine and Fisheries and under the provisions of sec. 569 of The Canada Shipping Act, is pleased to order that the fees for the inspection of passenger and non-passenger steamships, registered in Canada, as approved by order in council 1236 of May 31, 1920, shall be and the same are hereby made applicable to similar steamships registered elsewhere than in Canada, dating from June 1, 1920.

## Canada Steamship Lines Operating Results.

With the season of navigation on the Great Lakes drawing to a close, a survey of operations of the Canada Steamship Lines, Ltd., for the period, it was stated officially Nov. 16, discloses earnings of a very satisfactory character and well up to the 1919 level, which constituted a record in the transportation consolidation's history. Net earnings in 1919 were $4,580,272, the company's fiscal year ending Dec. 31; those for 1920, basing the estimate for November and December on booked contracts and present prospects, will reach approximately $4,400,000, or well up to the level of a year ago.

The net profit for 1919 was $2,236,679, after all deductions for fixed charges, depreciation, taxes, etc.; that for this year, barring unforseen developments, will closely approximate the 1919 result, according to the statements of officials of the company. After allowing for dividends on the $12,500,000 preferred stock outstanding, necessitating the payment of $875,000 annually, the 1920 net profit, therefore, represents earnings of approximately 12.5% on the junior securities.

October, officials stated, produced the best results in the way of earnings for any corresponding period in the company's history; the weather conditions prevailing on the Great Lakes were such as to allow the steamships operated there to make quick returns for cargoes, thus greatly facilitating the handling of business offering. The volume of freight available at lake ports, it was stated, is the most substantial for several seasons past and earnings prospects between now and the close of navigation were stated to be of the most satisfactory nature.

Ocean business, on the other hand, showed a shrinkage from the level of last year, but inland traffic neutralized the decline in this respect, it was said. The tourist and other passenger receipts for the 1920 season, which is now practically closed, was the heaviest on record.—Montreal Gazette, Nov. 17.

# Canadian Government Merchant Marine Ltd., Shipbuilding, Operation, Etc.

**Contracts Signed.**—We are officially advised that contract 59, between the Marine Department and the Nova Scotia Steel & Coal Co., for the construction of the s.s. Canadian Sapper; builder's yard no. 8; approximately 2,800 d.w. tons, was signed Oct. 26. Although there was considerable delay in the signing of this contract, the keel was laid May 4, 1920, and the hull launched Nov. 9.

**Passenger Accomodation.**—The steel cargo steamships, Canadian Fisher and Canadian Forester; Marine Department contracts 15 and 16; builder's yard nos. 7 and 8; each approximately 5,100 d.w. tons; which are being built for Canadian Government Merchant Marine, by Tidewater Shipbuilders Ltd., are being fitted with accommodation for 28 passengers each, to supply the service between Canada, the Bahamas, Jamaica and British Honduras, provided for in the Canada-West Indies trade agreement, entered into at Ottawa in July between the Dominion Government and the colonies mentioned, which calls for a fortnightly service. The accommodation will consist on the upper deck of a dining room 44½ x 20 ft.; and on the bridge deck of a lounge 36½ x 14 ft.; smoking room, 17½ x 8½ ft.; two suite rooms, each 10 x 8 ft.; and 11 staterooms, each 6½ x 8 ft. The suite rooms will each accommodate two persons if necessary, being designed to be either intercommunicating or separate. When intercommunicating the bathroom will open directly to the suite room, or when the rooms are used separately the bath room will open to each suite room from the corridor, or the forward suite room could be used separately and the after suite room in conjunction with the bathroom. Each of the staterooms will accommodate two passengers.

**Refrigeration Accommodation.** — The no. 4 'tween decks in 13 of the steel cargo steamships to form part of the Canadian Government Merchant Marine fleet are being fitted up as cold chambers with refrigerating machinery of 20,000 cu. ft. capacity. The ships, some of which have been finished, the others being under construction and the names of the builders are as follows:—Canadian Exporter, Canadian Inventor, Canadian Prospecto, J. Coughlan & Sons; Canadian Victor, Canadian Conqueror, Canadian Commander, Canadian Leader, Canadian Vickers Ltd.; Canadian Highlander, Canadian Skirmisher, Wallace Shipyards Ltd.; Canadian Traveller, Canadian Winner, Harbour Marine Co.; Canadian Cruiser, Canadian Constructor, Halifax Shipyards Ltd.

**Steel Cargo Steamship, Canadian Carrier, approximately 4,350 d.w. tons, built for Canadian Government Merchant Marine Ltd., by Port Arthur Shipbuilding Co., Port Arthur, Ont.**

**Launchings of Steamships.**—Since Canadian Railway and Marine World for November was issued, we have been advised of the following launchings of steel cargo steamships for Canadian Government Merchant Marine:—

Nov. 9, s.s. Canadian Sapper; Marine Department contract 59; builder's yard no. 8; approximately 2,800 d.w. tons; Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Nov. 20, s.s. Canadian Harvester; Marine Department contract 61; builder's yard no. 45; approximately 3,890 d.w. tons; Port Arthur Shipbuilding Co., Port Arthur, Ont.

**Deliveries of Steamships.**—In addition to the steamships mentioned in Canadian Railway and Marine World previously, the following have been delivered to Canadian Government Merchant Marine for operation:—

Nov. 12, s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons. This ship was built by the British American Shipbuilding Co., Welland, Ont., and cut in two for taking through the canals to Montreal, where the sections were joined together at Canadian Vickers Ltd. plant. She sailed Nov. 13, for Chicoutimi, Que., to load a full cargo of pulp wood for Rouen, France.

Nov. 17, s.s. Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons; Collingwood Shipbuilding Co., Collingwood, Ont. She sailed from Collingwood Nov. 18, for Erie, Pa., to load coal for Montreal, and will sail from Montreal for Glasgow, Scotland.

**The s.s. Canadian Recruit**, which went ashore at Vache Point, in the St. Lawrence River, in Dec. 1919, and which was released in the spring of 1920, having suffered considerable damage, has been thoroughly overhauled and repaired by Fraser Brace Shipyards Ltd., Montreal, was handed over to Canadian Government Merchant Marine Ltd. Nov. 20, for operation, and will take a general cargo to St. John's, Nfld. The work done includes complete overhaul, and renewal where necessary. Practically the whole of the bottom plating, floors, etc., and a considerable portion of the side plating was replaced, and new deck winches, derricks and gear were supplied. The accommodation for passengers, officers and crew was all practically renewed. A complete new cast steel stern post and rudder were fitted, and the main engines, boilers, propellers, shafting and auxiliaries were thoroughly overhauled. The approximate cost of the repairs is $300,000.

**British American Shipbuilding Co.,**

Welland, Ont.—The s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons; which was built by this company, and which was cut in two to go through the canals to Montreal, was joined together at Canadian Vickers Ltd. plant, delivered to Canadian Government Merchant Marine, Nov. 12, and sailed Nov. 13 for Chicoutimi, Que., to load a full cargo of pulp wood for Rouen, France.

**Collingwood Shipbuilding Co.**, Collingwood, Ont.—The steel cargo steamship Canadian Rover; Marine Department contract 57; builder's yard no. 67; approximately 3,890 d.w. tons; for Canadian Government Merchant Marine, was delivered to Canadian Government Merchant Marine Ltd., Nov. 17, and sailed Nov. 18 for Erie, Pa., to load coal for Montreal. She will sail from Montreal for Glasgow, Scotland.

**Dominion Shipbuilding & Repair Co.**, Toronto, when it assigned on July 31, had under construction for Canadian Government Merchant Marine, two steel cargo steamships, Canadian Pathfinder and Canadian Engineer, each approximately 3,500 d.w. tons. They were both in frame awaiting shell plates before further erection of the hulls could be proceeded with. As stated in Canadian Railway and Marine World for October, the interim liquidator, Osler Wade, intimated to the Marine Department his willingness to cooperate, so that the loss sustained by the Government might be reduced to the minimum, either by the liquidator continuing the work on a cost plus basis, or by permitting the Government to proceed itself. The liquidator advised us Oct. 13 that the court had made an order directing him to deliver the hulls, engines, etc., to the Dominion Government, and that bills of sale had been executed, but that he had not had any advice as to when the Government proposed to commence operations for the completion of the ships, and at the time of writing there has been no change in the situation. On Nov. 10 a Toronto daily paper stated that the Marine Department had requested Henry Hope & Sons, Canada, Ltd., manufacturers of steel casements, etc., Peterborough, Ont., to complete them, but we were officially informed a few days later that this was incorrect. On Nov. 16, the Mayor of Toronto telegraphed the Minister of Marine, urging the completion of the ships, and the Minister replied that the matter was actively engaging his department's attention and that he expected to complete arrangements shortly to carry on the work.

The Toronto Board of Control received a deputation representing the discuss the probable completion of two steel cargo steamships, under construction for Canadian Government Merchant Marine Ltd., and which, it was claimed, were only about 35% completed. The deputation stated that during 1918 the company sold six ships at a profit of $2,289,000. It was also stated that during 1919 the Dominion Government paid $185 a ton to the company for a ship, the cost being $165 a ton, while shipbuilding costs in 1920 decreased to $156 a ton, the Dominion Government price remaining as in 1919. These statements drew the remark from a member of the Board of Control, that it "looks like profiteering even on ships."

As far as the profiteering charge is concerned, the statement issued by Osler Wade, F.C.A., interim liquidator of the company, as published in Canadian Railway and Marine World for October, shows that the net loss on the last hull laid down in the yard was $300, to which had to be added penalties of $72,000, making a total loss of $72,300. In 1918, labor cost $49 and materials $76 a ton; in 1919, labor cost $49 and materials $116 a ton; and in 1920, labor cost $61 and materials $95 a ton. Although the company may have sold six steamships in 1918, these ships were not all built in that year, and it is understood that they were built on shop account, with the prospect of selling them on completion. The statement that there was a profit of $2,289,000 on the six ships, must be taken with reserve. The deputation is also reported to have stated that the Dominion Government in 1919 paid $185 a ton for a ship, the cost being $165 a ton. The only ships which the Dominion Government ordered from the company are the two at present there, uncompleted, and for which the contract price is $180 a d.w. ton, and on these, the interim liquidator estimated that if they were completed, there would be a profit for the company of $182,000, representing the difference between the amounts received for work done, and the charges for work done to July 31.

**Halifax Shipyards Ltd.**, Halifax, N.S., expects to launch the steel cargo steamship Canadian Explorer; Marine Department contract 22; builder's yard no. 2; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine, between Dec. 15 and 18.

The steel cargo steamship Canadian Marine; Marine Department contract 21; builder's yard no. 1; approximately 8,390 d.w. tons; built for Canadian Government Merchant Marine by Halifax Shipyards Ltd., underwent her trial trips Nov. 22.

**Midland Shipbuilding Co.**, Midland, Ont., which laid the keel of the steel cargo steamship Canadian Logger; Marine Department contract 54; builder's yard no. 10; approximately 3,890 d.w. tons, for Canadian Government Merchant Marine on June 9, advises us that she will not be launched until next spring.

**Nova Scotia Steel & Coal Co.**, New Glasgow, N.S., launched the steel cargo steamship Canadian Sapper; Marine Department contract 59; builder's yard no. 8; approximately 2,800 d.w. tons; for Canadian Government Merchant Marine, Nov. 9, the christening being performed by Mrs. G. D. MacDougall, wife of the company's General Superintendent. The ship is expected to be completed about Dec. 12. She is the same in every particular as the Canadian Miner and Canadian Sealer, built previously by the company for Canadian Government Merchant chant Marine, except that she has twin decks on forward hold.

**Port Arthur Shipbuilding Co.**, Port Arthur, Ont., launched the steel cargo steamship Canadian Harvester; Marine Department contract 61; builder's yard no. 45; approximately 3,890 d.w. tons; for Canadian Government Merchant Marine, Nov. 20, the christening being performed by Mrs. Keefer, wife of F. H. Keefer, M.P. for Port Arthur and Kenora.

**Prince Rupert Drydock & Engineering Co.**—See under "Prince Rupert Drydock & Engineering Co. Suspends Operations," on another page of this issue.

**Tidewater Shipbuilders Ltd.**, Three Rivers, Que.—The steel cargo steamships Canadian Fisher and Canadian Forester; Marine Department contracts 15 and 16; builder's yard nos. 7 and 8; approximately 5,100 d.w. tons each, which were launched Aug. 14 and Sept. 20, respectively, have been completed, with the exception of the interior fittings for the passenger accommodation, and the furnishings, which, we are advised, are to be put in at Halifax, N.S. The Canadian Fisher left Three Rivers Nov. 13 under her own steam, for Halifax, and we were advised on that date that it was expected to similarly dispatch the Canadian Forester about a fortnight later. It was considered advisable to have the interior fittings of the passenger accommodation installed at Halifax, rather than take chances of the ships freezing in, as there are so many delays in getting the necessary materials, both as regards the various manufacturers and transportation in general. The plans of both these ships were changed while they were being built, so as to provide accommodation for 28 passengers. On completion, they will be placed on the West Indian route.

**Wallace Shipbuilding & Drydock Co.**, North Vancouver, B.C., which launched the steel cargo steamship Canadian Highlander; Marine Department contract 55; builder's yard no. 103; approximately 8,390 d.w. tons; for Canadian Government Merchant Marine, on Oct. 14, expects to deliver her early in December.

## Vancouver Drydock Contract Let.

A contract was signed Oct. 27, between the Dominion Government and J. Coughlan & Sons Ltd., for the construction of a second class drydock at Vancouver, B. C., under the terms of the Dry Docks Subsidies Act, by which the Government will pay a subsidy of 4½% for 35 years on the cost of the drydock, which, for the purpose of subsidy calculation, has been placed at $2,500,000.

The plans and specifications, as originally drawn up, showed a clear width of the dock entrance of 100 ft., and have been amended to provide for a clear width of dock entrance of 110 ft., and all the figures in the original plans and specifications affected by this change have been increased by 10 ft. The caisson gate is to be redesigned to agree with the amended entrance width. Order in council 413, of Feb. 21, dealing with the matter was given in full in Canadian Railway and Marine World for March, page 156, the increased dimensions being provided for therein, the amended figures concerning only the original plans and specifications, which are annexed to the contract.

The dimensions of the drydock are to be as follows:—

| | |
|---|---|
| Length from caisson stop to head wall | 725 ft. |
| Length from back of sill to head wall | 700 ft. |
| Clear width of entrance at bottom | 110 ft. |
| Width of entrance at top | 116 ft. 2½ in. |
| Depth over sill at extreme high water | 32.23 ft. |
| Depth over sill at higher water (equivalent to high water ordinary spring tide) | 30 ft. |

**Assistant Pilots for Winter Navigation.**—The Montreal United Pilots Association has requested the Marine Department to order that from Nov. 20 to the close of St. Lawrence navigation, all ships navigating between Quebec and Montreal, shall carry an assistant pilot. The request states that at that time the weather is such as to bear very hardly on a pilot who is on duty for the whole distance between the ports named. It also states that, in former years, the season closed somewhat earlier, but it has been lengthened by the use of additional aids to navigation. It was announced Nov. 24 that the Marine Department had refused the request.

# Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w" and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

Where the total price does not agree with the finally ascertained deadweight tons multiplied by the price per ton, the extra amount is for changes from specifications, additional equipment, accommodation, etc.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

| Contract | Contract date | Name | Builder | Yard no. | Long tons d.w. | Price per ton d.w. | Total price | Type | Classification | Speed knots | Keel laid | Launched | Delivered. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Mar. 4, 1918 | Canadian Voyageur | Canadian Vickers Ltd. | 66 | *4,575 | $207. | $ 947,025 | S.d., p., b. and f'c's'le | Lloyd's | 11 | June 11, 1918 | Nov. 23, 1918 | Feb. 22, 1919 |
| 2 | May 22, 1918 | Canadian Pioneer | " " " | 67 | *8,408 | 180. | 1,513,440 | 2.d., p., b and f'c's'le | " | 11 | July 17, 1918 | Dec. 3, 1918 | May 9, 1919 |
| 3 | May 18, 1918 | Canadian Warrior | Collingwood Shipbldg. Co., C'wood. | 61 | *3,995 | 205. | 818,975 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Not stated | Dec. 21, 1918 | Apr. 26, 1919 |
| 4 | Mar. 15, 1918 | Canadian Volunteer | Wallace Shipbldg. & Dry Dock Co. | 100 | *4,495.75 | 207. | 930,620.25 | 2.d., p., b. and f'c's'le | Lloyd's | 11 | Oct. 1, 1918 | Apr. 5, 1919 | June 19, 1919 |
| 5 | Nov. 25, 1918 | Canadian Trooper | " " " | 106 | *4,540 | 217. | 985,180 | S.d., p., b. and f'c's'le | " | 11 | Nov. 15, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 6 | Nov. 25, 1918 | Canadian Aviator | " " " | 101 | 5,100 | 210. | 1,071,000 | 2.d., p., b. and f'c's'le | " | 11 | Apr. 5, 1919 | Oct. 9, 1919 | Nov. 15, 1919 |
| 7 | Nov. 25, 1918 | Canadian Raider | " " " | 102 | 5,100 | 210. | 1,071,000 | 2.d., p., b. and f'c's'le | " | 11 | May 31, 1919 | Dec. 11, 1919 | Jan. 17, 1920 |
| 10 | July 5, 1918 | Canadian Recruit | Collingwood Shipbldg. Co., C'wood. | 62. | *3,964 | 205. | 812,620 | Lake, s.d., p., b. and f'c's'le | Bri. Corp. | 9 | Jan. 3, 1919 | May 3, 1919 | June 7, 1919 |
| 11 | Oct. 17, 1918 | Canadian Signaller | " " | 63 | *3,975 | 205. | 814,926.25 | 2.d., p., b. and f'c's'le | " | 9 | Jan. 16, 1919 | June 28, 1919 | Aug. 30, 1919 |
| 12 | Oct. 17, 1918 | Canadian Gunner | " " | 64 | *3,978 | 205. | 815,541.25 | 2.d., p., b. and f'c's'le | " | 9 | Feb. 10, 1919 | Oct. 4, 1919 | Nov. 6, 1919 |
| 13 | Aug. 9, 1918 | Canadian Settler | Tidewater Shipbuilders Ltd. | 5 | 5,100 | 200. | 1,020,000 | S.d., p., b. and f'c's'le | Lloyd's | 11 | Jan. 8, 1919 | Sept. 20, 1919 | Dec. 2, 1919 |
| 14 | Aug. 9, 1918 | Canadian Rancher | " " " | 6 | *4,850 | 200. | 967,000 | 2.d., p., b. and f'c's'le | " | 11 | Jan. 10, 1919 | Nov. 1, 1919 | July 11, 1920 |
| 15 | Jan. 24, 1919 | Canadian Fisher | " " " | 7 | 5,100 | 200. | 1,020,000 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 20, 1919 | Aug. 14, 1920 | ..... |
| 16 | Jan. 24, 1919 | Canadian Forester | " " " | 8 | 5,100 | 200. | 1,020,000 | 2.d., p., b. and f'c's'le | " | 11 | Nov. 1, 1919 | Sept. 20, 1920 | ..... |
| 17 | Sept. 4, 1918 | Canadian Trapper | Davie Shipbuilding & Repairing Co. | 459 | *4,992 | 200. | 998,400 | 2.d., p., b. and f'c's'le | " | 12 | Mar. 11, 1919 | Oct. 9, 1919 | June 24, 1920 |
| 18 | Sept. 4, 1918 | Canadian Hunter | " " " | 460 | *4,992 | 200. | 998,400 | 2.d., p., b. and f'c's'le | " | 12 | Mar. 28, 1919 | May 7, 1920 | Aug. 10, 1920 |
| 19 | Sept. 4, 1918 | Canadian Trader | Port Arthur Shipbuilding Co. | 39 | *3,341 | 205. | 684,905 | Lake, s.d., p., b. and f'c's'le | " | 10½ | Dec. 9, 1918 | May 5, 1919 | July 18, 1919 |
| 19a | Mar. 1, 1919 | Canadian Adventurer | " " | 41 | *3,408 | 210. | 715,680 | Lake, s.d., p., b. and f'c's'le | " | 10 | Mar. 31, 1919 | Sept. 8, 1919 | Oct. 29, 1919 |
| 20 | Sept. 4, 1918 | Canadian Sailor | " " | 40 | *3,357 | 205. | 688,185 | Lake, s.d., p., b. and f'c's'le | " | 10½ | Dec. 10, 1918 | May 31, 1919 | Aug. 7, 1919 |
| 20a | Mar. 1, 1919 | Canadian Sower | " " | 42 | *3,406 | 210. | 715,207.50 | Lake, s.d., p., b. and f'c's'le | " | 10 | Mar. 31, 1919 | Oct. 9, 1919 | Nov. 18, 1919 |
| 21 | Sept. 13, 1918 | Canadian Mariner | Halifax Shipyards Ltd. | 1 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Feb. 24, 1919 | Sept. 4, 1920 | ..... |
| 22 | Sept. 13, 1918 | Canadian Explorer | " " " | 2 | 8,390 | 195. | 1,636,050 | 2.d., p., b and f'c's'le | " | 10 | Mar. 15, 1919 | ..... | ..... |
| 23 | Oct. 11, 1918 | Canadian Navigator | Canadian Vickers Ltd. | 73 | *4,581 | 215. | 984,915 | 2.d., p., b. and f'c's'le | " | 11 | Jan. 22 1919 | Oct. 18, 1919 | Nov. 22, 1919 |
| 24 | Oct. 11, 1918 | Canadian Ranger | " " " | 68 | *8,382 | 188. | 1,575,816 | 2.d., p., b and f'c's'le | " | 11 | Aug. 26, 1918 | Apr. 19, 1919 | May 23, 1919 |
| 25 | Oct. 11, 1918 | Canadian Seigneur | " " " | 69 | *8,391 | 188. | 1,577,508 | 2.d., p., b and f'c's'le | " | 11 | Nov. 30, 1918 | May 7, 1919 | Aug. 14, 1919 |
| 26 | Oct. 11, 1918 | Canadian Miller | " " " | 70 | *8,390 | 188. | 1,577,320 | 2.d., p., b and f'c's'le | " | 11 | Dec. 2, 1918 | Aug. 16, 1919 | Sept. 24, 1919 |
| 27 | Oct. 11, 1918 | Canadian Spinner | " " " | 71 | *8,393 | 188. | 1,577,884 | 2.d., p., b and f'c's'le | " | 11 | Apr. 23, 1919 | Nov. 8, 1919 | Dec. 6, 1919 |
| 28 | Oct. 11, 1918 | Canadian Planter | " " " | 72 | *8,399.30 | 188. | 1,579,068.40 | 2.d., p., b and f'c's'le | " | 11 | May 10, 1919 | Nov. 22, 1919 | Dec. 27, 1919 |
| 29 | Jan. 24, 1919 | Canadian Winner | Harbour Marine Co. Ltd. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | July 14, 1919 | June 29, 1920 | ..... |
| 30 | Jan. 24, 1919 | Canadian Traveller | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Aug. 9, 1919 | Sept. 29, 1920 | ..... |
| 31 | Dec. 11, 1918 | Canadian Beaver | Collingwood Shipbldg. Co., Kingston | 15 | *3,972.50 | 205. | 855,348.54 | 2.d., p., b. and f'c's'le | Bri. Corp. | 9 | Apr. 7, 1919 | Dec. 10, 1919 | May 11, 1920 |
| 32 | Mar. 1, 1919 | Canadian Runner | Port Arthur Shipbuilding Co. | 43 | 4,350 | 215. | 935,250 | 2.d., p., b. and f'c's'le | " | 11 | Aug. 29, 1919 | May 8, 1920 | Oct. 4, 1920 |
| 33 | Mar. 1, 1919 | Canadian Carrier | " " | 44 | 4,350 | 215. | 935,250 | 2.d., p., b. and f'c's'le | " | 11 | Aug. 29, 1919 | June 26, 1920 | Oct. 15, 1920 |
| 34 | Nov. 22, 1918 | Canadian Importer | J. Coughlan & Sons | 11 | *8,381 | 198. | 1,659,438 | 2.d., p., b and f'c's'le | Lloyd's | 11 | Apr. 26, 1919 | Dec. 6, 1919 | Feb. 5, 1920 |
| 35 | Nov. 22, 1918 | Canadian Exporter | " | 12 | *8,380 | 198. | 1,659,240 | 2.d., p., b and f'c's'le | " | 11 | May 3, 1919 | Dec. 27, 1919 | Mar. 6, 1920 |
| 36 | Nov. 22, 1918 | Canadian Inventor | " | 13 | *8,350 | 198. | 1,653,300 | 2.d., p., b and f'c's'le | " | 11 | July 24, 1919 | Jan. 24, 1920 | July 17, 1920 |
| 37 | Nov. 22, 1918 | Canadian Prospector | " | 14 | *8,350 | 198. | 1,653,300 | 2.d., p., b and f'c's'le | " | 11 | Sept. 26, 1919 | Feb. 24, 1920 | June 15, 1920 |
| 38 | Dec. 10, 1918 | Canadian Cruiser | Halifax Shipyards Ltd. | 3 | 10,500 | 197.50 | 2,073,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 2, 1919 | ..... | ..... |
| 39 | Dec. 10, 1918 | Canadian Constructor | " " " | 4 | 10,500 | 197.50 | 2,078,750 | 3.d, p., and f'c's'le | " | 12 | Oct. 6, 1919 | ..... | ..... |
| 40 | Mar. 81, 1919 | Canadian Sealer | Nova Scotia Steel & Coal Co. | 5 | *2,776.50 | 210. | 583,065 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 27, 1919 | Oct. 8, 1919 | Dec. 20, 1919 |
| 41 | Mar. 81, 1919 | Canadian Miner | " " | 6 | *2,778 | 210. | 583,380 | S.d., p., b. and f'c's'le | " | 8½ | Mar. 31, 1919 | Apr. 3, 1920 | May 7, 1920 |
| 42 | Feb. 21, 1919 | Canadian Reaper | Prince Rupert Dry Dock & Eng. Co. | 1 | 8,390 | 198. | 1,661,220 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | Sept. 27, 1919 | ..... | ..... |
| 43 | Feb. 21, 1919 | Canadian Thrasher | " " " | 2 | 8,390 | 198. | 1,661,220 | 2.d., p., b and f'c's'le | " | 11 | Oct. 20, 1919 | ..... | ..... |
| 44 | Jan. 23, 1919 | Canadian Otter | British American Shipbuilding Co. | 4 | 4,575 | 215. | 983,625 | 2.d., p., b. and f'c's'le | " | 11 | Mar. 29, 1919 | Apr. 13, 1920 | Aug. 18, 1920 |
| 45 | Jan. 23, 1919 | Canadian Squatter | " " " | 5 | 4,575 | 215. | 983,625 | 2.d., p., b. and f'c's'le | " | 11 | July 14, 1919 | July 26, 1920 | Nov. 12, 1920 |
| 46 | Sept. 11, 1919 | Canadian Farmer | Collingwood Shipbldg. Co., C'wood. | 65 | *3,954 | 180. | 711,720 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 3, 1919 | Dec. 27, 1919 | Apr. 28, 1920 |
| 47 | Sept. 11, 1919 | Canadian Observer | " " | 66 | *3,981.75 | 180. | 712,910 | 2.d., p., b. and f'c's'le | " | 11 | Sept. 12, 1919 | May 8, 1920 | June 15, 1920 |
| 48 | Sept. 2, 1919 | Canadian Pathfinder | Dominion Shipbuilding & Repair Co | 10 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | Lloyd's | 11 | Nov. 8, 1919 | ..... | ..... |
| 49 | Sept. 2, 1919 | Canadian Engineer | " " " | 11 | 3,500 | 180. | 630,000 | Lake, s.d., p., b. and f'c's'le | " | 11 | Nov. 8, 1919 | ..... | ..... |
| 50 | Sept. 18, 1919 | Canadian Victor | Canadian Vickers Ltd. | 77 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Dec. 10, 1919 | June 22, 1920 | Aug. 25, 1920 |
| 51 | Sept. 18, 1919 | Canadian Conqueror | " " " | 78 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | Jan. 17, 1920 | July 27, 1920 | Sept. 30, 1920 |
| 52 | Sept. 18, 1919 | Canadian Commander | " " " | 79 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | June 2, 1920 | Oct. 30, 1920 | ..... |
| 53 | Sept. 18, 1919 | Canadian Leader | " " " | 80 | 8,390 | 170. | 1,426,300 | 2.d. p., b. and f'c's'le | " | 11 | June 29, 1920 | Nov. 27, 1920 | ..... |
| 54 | Feb. 26, 1920 | Canadian Logger | Midland Shipbuilding Co. | 10 | 3,890 | 182.50 | 709,925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | June 9, 1920 | ..... | ..... |
| 55 | Mar. 18, 1920 | Canadian Highlander | Wallace Shipbldg. & Dry Dock Co. | 103 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | Lloyd's | 11 | Mar. 30, 1920 | Oct. 14, 1920 | ..... |
| 56 | Mar. 18, 1920 | Canadian Skirmisher | " " " | 104 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | Oct. 14, 1920 | ..... | ..... |
| 57 | Mar. 18, 1920 | Canadian Rover | Collingwood Shipbldg. Co., C'wood. | 67 | 3,890 | 182.50 | 709,925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | June 5, 1920 | Oct. 19, 1920 | Nov. 17, 1920 |
| 58 | Mar. 13, 1920 | Canadian Coaster | Collingwood Shipbldg Co., Kingston | 16 | 3,890 | 185.50 | 709,925 | 2.d., p., b. and f'c's'le | " | 11 | May 6, 1920 | ..... | ..... |
| 59 | Oct. 26, 1920 | Canadian Sapper | Nova Scotia Steel & Coal Co. | 8 | 2,800 | 190. | 532,000 | 2.d., p., b. and f'c's'le | Lloyd's | 8½ | May 4, 1920 | Nov. 9, 1920 | ..... |
| 60 | Feb. 2, 1920 | Canadian Challenger | Davie Shipbuilding & Repairing Co. | 476 | 8,390 | 167.50 | 1,405,325 | 2.d. p., b. and f'c's'le | " | 11 | May 14, 1920 | ..... | ..... |
| 61 | Feb. 26, 1920 | Canadian Harvester | Port Arthur Shipbuilding Co. | 45 | 3,890 | 182.50 | 709,925 | 2.d., p., b. and f'c's'le | Bri. Corp. | 11 | Mar. 30, 1920 | Nov. 20, 1920 | ..... |
| 62 | April 7, 1920 | Canadian Transporter | J. Coughlan & Sons | 20 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| 63 | April 7, 1920 | Canadian Freighter | " | 21 | 8,390 | 167.50 | 1,405,325 | 2.d p., b. and f'c's'le | " | 11 | ..... | ..... | ..... |
| | | | | | 379,296.80 | | $72,818,073.19 | | | | | | |

## Wreck of Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert.

The illustrations on this page show the wreck of the s.s. Prince Rupert from various points of view. She left Swanson Bay, B.C., which is about 426 miles north of Vancouver, early in the morning of Sept. 29, and struck on the east side of the ship channel, about 4 miles north of Swanson Bay, sustaining such damage that holds 1 and 2 were both flooded. On account of not being able to find a suitable place for beaching the ship, the captain decided to return to Swanson Bay, and was able to beach the ship at the mouth of a creek at the entrance to the bay. As the tide continued to rise, after portions of the ship, including the boiler and engine spaces, became flooded, and she sank rapidly, with a list of about 60 deg. to starboard, her stern being in about 70 ft. of water.

Salvage operations were undertaken immediately by the Pacific Salvage Co., under the direction of Capt. W. H. Logan of the London Salvage Association. To aid in the work, a cofferdam has been built round the ship. During the earlier part of November, the ship was reported to be in an upright position, and six divers were drilling roles in the hull preparatory to fixing bolts to be utilized in the lifting operations.

The enquiry into the casualty opened at Vancouver, Nov. 15, before Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capts. G. Bridge, Esquimalt, and Capt. John Park, master of the s.s. City of Victoria. At the time of writing (Nov. 23) the judgment had not been received, but a Vancouver press dispatch states that the enquiry was concluded Nov. 18, it being held that the primary cause of the casualty was that the helm was put to port instead of to starboard, and that the ship was considerably out of her course at the time. It is also stated that the certificate of the master, Capt. Duncan Mackenzie, was suspended for four months, and that of the first officer, Capt. R. Mackenzie, for three months.

Wreck of Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert, at Swanson Bay, B.C.
From photographs loaned by C. J. Hastings, M.D., Medical Officer of Health, Toronto, who was one of the passengers.

## Great Lakes Levels.

The U.S. Lake Survey reports the monthly mean stages of the Great Lakes, for October, in feet above mean sea level, as follows:—Superior, 602.68; Michigan and Huron, 580.55; St. Clair, 575.14; Erie, 572.05; Ontario, 245.29.

Lake Superior was 0.13 ft. lower than September, 0.27 ft. higher than a year ago, 0.05 ft. above average stage of October of the last 10 years, 0.88 ft. below the high stage of Oct. 1869, and 1.10 ft. above the low stage of Oct. 1879.

Lakes Michigan and Huron are 0.32 ft. lower than September, 0.10 ft. lower than a year ago, 0.08 ft. above average stage of October of the last 10 years, 2.39 ft. below the high stage of Oct. 1876, and 0.95 ft. above the low stage of Oct. 1911. During the last 10 years the October level has averaged 0.2 ft. lower than the September level, and 0.02 ft. higher than the November level.

Lake Erie is 0.34 ft. lower than September, 0.42 ft. lower than a year ago, 0.10 ft. below average stage of October of the last 10 years, 1.65 ft. below the high stage of Oct. 1885, and 1.25 ft.

above the low stage of Oct. 1895. During the last 10 years the October level has averaged 0.3 ft. lower than the September level, and 0.3 ft. higher than the November level.

Lake Ontario is 0.18 ft. lower than September, 1.06 ft. lower than a year ago, 0.52 ft. below average stage of October of the last 10 years, 2.52 ft. below the high stage of Oct. 1861, and 1.62 ft. above the low stage of Oct. 1895. During the last 10 years the October level have averaged 0.4 ft. lower than the September level, and 0.2 ft. higher than the November level.

## Canal Traffic Statistics.

Following is a summary of the canal statistics for September, compiled by the Dominion Bureau of Statistics' Transportation Division:—

Sault Ste. Marie Canal.—There was considerable increase in the traffic through the Canadian and U.S. locks, despite the strike of the seamen on the Canadian lines on Sept. 16. There was an increase over Sept. 1919 of 1,545,674 tons, but a decrease from Aug. 1920 of 677,031 tons, the big increases being in wheat, iron ore, and soft coal. Soft coal fell behind August by 492,840 tons, and this season is behind 1919 by 889,072 tons. Hard coal is also behind by 77,223 tons, and wheat by 15,563,017 bushels, while the iron ore is ahead of last year by 4,909,504 tons. The total traffic for the season is 55,194,179 tons, against 52,887,710 in 1919.

Welland Canal.—There was an increase in traffic over Sept. 1919 of 53,849 tons, but a decrease from Aug. 1920 of 34,396 tons, and the total for the season is 42,077 tons behind 1919, being 1,693,717 tons, against 1,735,794 last year. The big increases for the season are barley 88,442 tons, wheat 83,066 tons, oils 53,331 tons, while soft coal is 208,088 tons over last season.

St. Lawrence Canal.—Traffic for September was 10,936 tons over Sept. 1919, but 108,977 tons under Aug. 1920, and for the season 42,113 tons under 1919. There was a decrease of 1,273,630 bush. of wheat from Sept. 1919, and an increase of 86,178 tons of soft coal. The total cargoes were 422,486, against 411,550 for Sept. 1919. The totals for the season are 2,237,426, against 2,279,539 for 1919. The soft coal shipments are 199,203, against 237,956 in 1919.

The Trent, Rideau and St. Peters Canals show decreases, while the Ottawa, Chambly, Murray and St. Andrews Canals show increases. All these canals show increase for the season, with the exception of St. Peters.

**The North American Steamship Co. Ltd.**, which was incorporated under the Dominion Companies Act, with $750,000 authorized capital, and office at Toronto, was formed to acquire and operate the s.s. North American out of New York. This ship was built by Canadian Allis-Chalmers, Bridgeburg, Ont., and is screw driven by engine of 146½ h.p. Her dimensions are,—length 251 ft., breadth 43.6 ft., depth 20.5 ft., tonnage 2,280 gross, 1,315 net. She is of the same type of steel steamship as was adopted by the Imperial Munitions Board for 3,500 d.w. tons, and of which Canadian Allis-Chalmers built two for the British Government. The s.s. South American was built by the same builders for the South American Steamship Co., controlled by the American Metal Transport Co.

## Royal Mail Steam Packet Co.'s Canada-West Indies Service.

As stated in Canadian Railway and Marine World for November, the Royal Mail Steam Packet Co. applied to the Trade and Commerce Department for authority to increase its rates between Canadian and West Indian ports by 25%, on account of the high prices of coal, wages, etc., and the Minister of Trade and Commerce has advised us that, after consulting the Halifax, N.S., and St. John, N.B., boards of trade, he has authorized the increase. The clause in the company's contract with the Dominion Government, under which the rates are controlled, is as follows:—

"The contractors shall, at least three weeks prior to the first sailing under this contract, furnish the Minister with a schedule of the freight rates proposed to be charged between the different ports on both north and south bound trips, which schedule shall at all times be subject to the approval of the Minister, and after being approved by him shall not be changed except with his consent; and the Minister may at any time, if he deem it advisable, fix the maximum rates to be charged on any article or class of goods; and the contractors shall carry between the ports hereinbefore named on all voyages of the said steamships employed under the terms of the contract, all passengers or freight that may be offered, or that can reasonably be procured, at rates which shall not be in excess of such maximum rates as fixed by the Minister, should he deem it advisable to so fix such maximum rates, and in no case shall any discrimination be made as regards rates, or otherwise, directly or indirectly against Canadian merchants or shippers, who shall always have precedence for their freight and goods over all other merchants and shippers; and it is agreed and understood that the freight rates on south bound trips, sailing from Halifax or St. John, as hereinbefore provided, on through bills of lading from any places in Ontario and Quebec, or from any Canadian points farther west, shall in no case be greater than from the same place via any United States routes or ports; and on north bound trips the rates from any port in the British West Indies to any place in Ontario or Quebec or other Canadian points farther west, shall be as favorable as via any United States route or port, to the same place; and it is further understood and agreed that the said steamers shall not carry between the ports hereinbefore stipulated, on any voyage run under the terms of this contract, either deals or lumber or timber to a greater extent than 50% of the total quantity of the cargo carried on such voyage, and such quantity only in case other Canadian products are not offering or cannot be obtained. Provided, however, that in the event of other cargo not being obtainable, satisfactory evidence of that fact being furnished to the Minister, then the contractors shall be allowed to make up the balance of the cargo with deals, boards or timber."

The four steamships which the R.M.S.P. Co. has in the Canada-West Indies service are as follows, the figures showing gross tonnage:—Caraquet, 4,889; Chaleur, 4,746; Chignecto, 4,744; Chaudiere, 4,019. They sail fortnightly from St. John and Halifax to Bermuda, St. Kitts, Antigua, Montserrat, Dominca, St. Lucia, Barbados, St. Vincent, Grenada, Trinidad and Demerara.

**Magdalen Islands Shipping.** — The Magdalen Islands are situated in the center of the Gulf of St. Lawrence, about 50 miles from East Point, Prince Edward Island, and the same distance from Cape Breton. The Trade and Commerce Department's Weekly Bulletin states that the small fleet of 10 schooners, with an average tonnage of about 65 tons each, which belong to the islands, have all they can do to carry from the islands the bulk herring and cod fish, and bring back the fuel and building materials needed; in fact, during the last few years, owing to irregular service by the mail steamship, these schooners have been obliged to carry a part of the goods which the steamship might have brought, and in consequence there has been a scarcity of fuel during the winter, especially in 1919-20, as, although the people of the islands chartered what outside schooners they could get, very few are willing to make trips to the island owing to the shoal water and the absence of harbors around the islands.

**Ormes Steamship Co. Ltd.** has been incorporated under the Dominion Companies Act, with $1,000,000 authorized capital, and office at Montreal, to carry on business as ship owners, shippers, steamship agents, etc., and to own and operate ships of every description for passenger and freight service, salvage and towing, etc., and to undertake the laying of submarine telegraphs in any part of the world.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during October, 1920:

| Articles | | Canadian Canal | U.S. Canal | Total |
|---|---|---|---|---|
| Lumber | Eastbound | M. ft. M. B. 1,114 | 24,060 | 25,174 |
| Flour | " | Barrels 447,940 | 695,051 | 1,142,991 |
| Wheat | " | Bushels 3,269,479 | 25,201,217 | 28,470,696 |
| Grain, other than wheat | " | Bushels 2,033,481 | 5,164,830 | 7,198,311 |
| Copper | " | Short tons 66 | 6,633 | 6,699 |
| Iron Ore | " | Short tons 40,768 | 8,616,055 | 8,656,823 |
| Pig Iron | " | Short tons 250 | ..... | 250 |
| Stone | " | Short tons 5,250 | 14,932 | 20,182 |
| General Merchandise | " | Short tons 352 | 3,256 | 3,608 |
| Passengers | " | Number 431 | 18 | 449 |
| Coal, soft | Westbound | Short tons 27,969 | 2,465,938 | 2,493,907 |
| Coal, hard | " | Short tons ..... | 376,388 | 376,388 |
| Iron Ore | " | Short tons ..... | 27,664 | 27,664 |
| Manufactured Iron and Steel | " | Short tons 1,447 | 5,658 | 7,105 |
| Salt | " | Short tons 1,812 | 16,243 | 18,055 |
| Oil | " | Short tons ..... | 45,849 | 45,849 |
| Stone | " | Short tons ..... | 95,876 | 95,876 |
| General Merchandise | " | Short tons 30,630 | 28,184 | 58,814 |
| Passengers | " | Number 373 | 2 | 375 |
| **Summary** | | | | |
| Vessel Passages | | Number 452 | 2,293 | 2,745 |
| Registered Tonnage | | Net 658,407 | 8,372,397 | 9,030,804 |
| Freight—Eastbound | | Short tons 237,702 | 9,638,939 | 9,876,641 |
| Westbound | | Short tons 61,858 | 3,061,800 | 3,123,658 |
| Total Freight | | Short tons 299,560 | 12,700,739 | 13,000,299 |

## Owners' Rights in Partially Built Ships, Under Builders' Liquidation Proceedings.

In connection with the liquidation of the Three Rivers Shipyards, Ltd., Three Rivers, Que., mentioned elsewhere in this issue, Mr. Justice Maclennan gave judgment in the Superior Court at Montreal, Nov. 6, in favor of La Societe Naphthes Transports, Marseilles, France, on a claim for possession of a partially built oil tank steamship of 6,500 gross tons, in possession of the liquidator of the building company, and ordered that the liquidator hand over to the owning company the ship as it stands, together with all material on hand and intended for the ship, and the ship's machinery under construction, but this latter material is only to be handed over on payment of any amount due thereon, and reserved the liquidator's rights with regard to any additional amounts that may become due under the contract, less such amounts as the owners have to expend for completing the ship.

The contract for the construction of this ship was entered into Mar. 12, 1919, with National Shipbuilding Corporation, Wilmington, Del., and the carrying out of the contract was entrusted to Three Rivers Shipyards, Ltd., which the judgment described as being "treated, regarded, known and publicly designated as an operating division, or branch of National Shipbuilding Corporation." After the payment of two installments of the contract price to the builders, a mortgage was executed by the builders, Oct. 30, 1919, under the provision of the Canada Shipping Act, in favor of the owners, as security for the ship's completion. Building operations proceeded until the winding up order was made July 23, 1920, when four installments of the contract price had been paid, and nothing further was due until the ship had been launched, and as the liquidator declined to complete and deliver the ship, these proceedings was commenced.

The liquidator contested the claim on the ground that Three Rivers Shipyards, Ltd. was not a party to the contract, that it never received any installments of the contract price, the four installments paid going to National Shipbuilding Corporation, that it did a large amount of work for which it had not been paid, that the mortgage mentioned was invalid for want of necessary formalities, in not having been approved or authorized by the Minister of Marine, and was of no effect as far as it purported to mortgage any materials intended for the ship, and he claimed that to hand the ship over to the owners would prejudice creditors' claims in liquidation. Molson's Bank also opposed the claim, on the ground that the materials intended for the ship, and not already incorporated in the hull, had been assigned to the bank as security for advances.

The judgment declared that there were two main questions to be determined, (1) did the mortgage executed by Three Rivers Shipyards, Ltd., in favor of the owners, entitle the latter to the possession of the ship as it stood, or to the ship and all materials intended therefor, and which had been ordered or were on hand in the shipyard; and (2) had Molson's Bank a valid secured claim on the materials on hand in the shipyards which had been ordered for, or were suitable for, the completion of the ship.

The owners based their claim on the mortgage and not on the contract. The contract contained no provision for the passing of the property until final delivery and acceptance of the ship, and the mortgage was executed, not by National Shipbuilding Corporation, but by Three Rivers Shipyards, Ltd. It was abundantly clear that, for all practical purposes, the company at Three Rivers was an operating division or branch of the National Shipbuilding Corporation, which was apparently the mainspring of the industry carried on at Three Rivers, and it existed and was operated on the credit borrowings and contracts obtained by National Shipbuilding Corporation. The Three Rivers Shipyards, Ltd., however, had a separate corporate existence, and as a subsidiary company assumed the contract in question. The mortgage was in terms an assumption for a consideration of National Shipbuilding Corporation's obligations under the contract, and the execution of the mortgage was itself a fulfilment and one of the obligations entered into by the corporation in this contract. The mortgage, being on a ship in process of construction, was authorized under the Canada Shipping Act. The ship had not been registered in Canada as a British ship, in fact it was not a British ship, but was being built for foreign owners, and in the court's opinion the mortgage did not require the Minister of Marine's approval under George V, secs. 9 and 10, chap. 42. The court was also of opinion that the mortgage, being mainly to secure the completion of the ship, was not executed in violation of the Dominion Companies Act, and it therefore ruled that Three Rivers Shipyards, Ltd., had power and authority to execute it. While the Canada Shipping Act authorizes a mortgage on a ship about to be built, it does not authorize a mortgage on materials provided and intended for a ship. This contract was for a complete ship, not for a ship, and the materials intended for it, and the court's opinion was that the principles laid down by the House of Lords in Seath vs. Moore (11 Appeal Cases 350) and Reid vs. MacBeth (1904) A. C. 223, 73 L.J.P.C. 57, were applicable to the present case, hence its conclusion was that the mortgage was effective, only in so far as the ship had been actually built, and did not cover any of the materials or machinery intended for the ship, but not yet incorporated into it.

The Canada Shipping Act provides in sec. 45 that the mortgagee shall be deemed owner, for all purposes necessary for making the ship available as security for the mortgage, which in this case was not only the four installments paid, but also the completion and delivery of the ship. Unless put into possession, the owner would be unable to exercise the rights given to it by the mortgage, to have the ship completed and delivered in accordance with the contract. The corporation, by its contract, undertook to give such a mortgage on both the ship and the materials intended for it, but, for the reasons stated, the mortgage could not be held to apply to the materials. The owners having paid all installments due to date, the court ruled that the mortgage entitled them to take possession of the ship as it stands. However, they could not proceed to complete the ship without the materials, and as these were already assembled, it was ordered that the liquidator should transfer them as required, on payments that would be adjusted afterwards, the shipyard plant at the same time to be leased on a rental of $250 a week. In regard to the claim of Molson's Bank regarding steel plates, angles, and other materials at the yard, under five assignments by National Shipbuilding Corporation and Three Rivers Shipyards, Ltd. to the bank, under the Bank Act, sec. 88, the court held that when these assignments were taken by the bank, both National Shipbuilding Corporation and Three Rivers Shipyards, Ltd. were insolvent, and to the bank's knowledge. Its claim was therefor dismissed with costs.

Molson's Bank has entered an appeal against the judgment dismissing its claim.

An application by La Societe Naphthes Transports, to be allowed to proceed with the completion of the ship, was granted by the Court of Appeals, Nov. 16, on the company furnishing a bond to guarantee Molson's Bank payment for a quantity of steel plates, bars, etc., required for the ship, and on which the bank claims to have a privilege, which is the subject of appeal.

## Furness, Withy & Co.'s Annual Report.

Following are extracts from Furness, Withy & Co., Ltd., report for the year ended April 30, 1920:—

The profits, including the balance brought forward, and after providing for taxation, were £1,125,404 1s. 8d. The usual half yearly dividend on preference shares and an interim dividend on ordinary shares, at the rate of 5% per annum, free of income tax, for the six months to October 31, 1919, were paid Nov. 1, 1919, leaving an available balance of £999,154 1s. 8d. Out of this balance the directors transferred £500,000 to depreciation account, and they recommend the payment of a bonus of 5% free of income tax, on ordinary shares for the past twelve months, representing a total distribution for the year of 10%, free of income tax. The appropriation of the available balance of £999,154 1s. 8d. will therefore be:—

| | |
|---|---|
| Transferred to depreciation account | £500,000 0 0 |
| 6 months' dividend on preference shares at 5% per annum, less income tax, May 1, 1920 | 26,250 0 0 |
| 6 months' dividend on ordinary shares, at 5% per annum, free of income tax, paid May 1, 1920 | 100,000 0 0 |
| Bonus of 5% free of income tax, on ordinary shares, payable Sept. 15, 1920 | 200,000 0 0 |
| Balance carried forward to next year's account | 172,904 1 8 |
| | £999,154 1 8 |

Since the previous annual meeting, J. E. Furness, of Halifax, N.S., retired from the board to the regret of his colleagues, and the vacancy was filled by the appointment of Sir Osborn G. Holmden.

**Canadian Lake Protective Association** has discontinued the issue of bulletins reporting action taken upon each casualty report filed by masters of ships. Masters are now notified individually with respect to their particular cases, and it is believed that the change will lead to a more complete disclosure of the circumstances connected with each casualty, and each master will have confidence of careful consideration, and, if necessary, re-consideration of his case, before final action is taken.

# Prince Rupert Drydock & Engineering Co. Suspends Operations.

Prince Rupert and Ottawa press dispatches stated early in November that the Prince Rupert Drydock & Engineering Co. had suspended operations, being in arrears for wages, and that some 800 men had been thrown out of employment. Writs were issued against the company, among others by Canada Metal Co. for $2,714.15, and by Prince Rupert Coal Co. for $5,250, and it was reported that the company owed a considerable amount to the Grand Trunk Pacific Ry. for freight, etc. It was also stated that the Marine Department had telegraphed that efforts were being made to secure the guarantee company's permission to settle the wages due and that the shipbuilding company had been asked to state their amount. It is said that the total liabilities will be between $350,000 and $400,000.

The shipbuilding plant and floating drydock operated by the company, which were fully described and illustrated in Canadian Railway and Marine World for Feb., 1912, were built by the Grand Trunk Pacific Development Co., a subsidiary of the Grand Trunk Pacific Ry. Co., of which the Minister of Railways is now Receiver, on behalf of the Dominion Government, and which is now under Canadian National Rys. management. They were leased to the John L. Mullen Construction Co., Pittsburg, Pa., in Aug., 1918, and the Prince Rupert Dry Dock & Engineering Co. was incorporated Dec. 23, 1918, with authorized capital of $500,000, and office at Prince Rupert, to take over the lease and operate the property, by building steel and wooden ships. The provisional directors were: Newman Erb, W. M. Wadden and H. Blanchard, New York; John L. Mullen, Pittsburg, Pa., and A. M. Manson, Prince Rupert. In Jan., 1919, an order in council was passed authorizing the placing of contracts with the company for the building of two steel cargo steamships of approximately 8,100 d.w. tons each, for Canadian Government Merchant Marine Ltd., and Marine Department contracts 42 and 43 were signed Feb. 21, 1919, for building the ships, which were stated later to be approximately 8,390 d.w. tons each, at $198 a d.w. ton. These were given builder's yard nos. 1 and 2, were designated Canadian Reaper and Canadian Thrasher respectively, and the keels were laid Sept. 27 and Oct. 20, 1919. In September 1920, the company's acting General Manager advised Canadian Railway and Marine World that the s.s. Canadian Reaper would probably be launched early in November and s.s. Canadian Thrasher about a month later, but they had not yet been launched.

On the organization of the company, the following officers were elected:—Chairman of the Board, Newman Erb, New York; President, John L. Mullen, Pittsburg, Pa.; Vice President, F. F. Schellenberg, Prince Rupert, B.C.; Treasurer, W. M. Wadden, New York; Secretary, H. Blanchard, New York; Superintendent of Plant, J. H. Pillsbury, Prince Rupert, B.C.; and the Vice President and the Superintendent of Plant were placed in active charge of shipbuilding. Towards the end of 1919 there were differences among the directors, and litigation followed to determine their rights, the Erb interests claiming damages from the Mullen interests, alleging fraudulent conspiracy to obtain control of the company. The result was that the Mullen interests were acquired by Newman Erb for $75,000. In the early part of this year, Newman Erb was reported to have stated that he and his associates had control of the company's stock, through the Empire Ship & Dry Dock Corporation, having bought the Mullen interests. He claimed that the company had spent $550,000 in fixed assets, that it had no floating debt, but had on deposit in banks $180,000, of which $160,000 was a trust fund for emergency use to ensure the completion of work in hand. At that time he reported the steamships Canadian Reaper and Canadian Thrasher to be about 60% completed, and about 45% paid for. A balance sheet, dated Mar. 31, 1920, showed assets of $2,835,596.77 and liabilities of $2,092,957.38, and a balance at credit of profit and loss of $742,639.39. The officers of the company are: Chairman and Managing Director, Newman Erb; Treasurer, W. M. Wadden; Secretary, H. Blanchard; acting General Manager, J. H. Pillsbury. At a meeting of local creditors early in November, it was stated that Mr. Erb was in New York with the intention of raising further capital, or obtaining some assistance from the Dominion Government, in both of which he was unsuccessful. It is estimated that the liabilities are between $350,000 and $400,000. Arrangements are reported to be in progress for the completion of the two ships now on the ways, it being estimated that it will require about $1,200,000 to finish both, and that the amount due from the Government for the completed contracts will be about $1,000,000. In the early part of this year, negotiations were reported to have been undertaken with several oil companies in New York and Holland for the building of about 20 oil tank steamships for approximately $36,000,000, and we were advised that the settlement of the order was merely a question of adjustment as far as rate of exchange, etc., was concerned, between Canada and the U.S. The lack of construction facilities at Prince Rupert also tended to hold back the order, but the company announced that in the event of securing it, it would immediately commence building two additional ways on about 75 ft. centers, and also build at least 200 houses, with accommodation each, for a man, wife and two children, so that it might employ approximately 500 men in carrying out the shipbuilding programme. The orders for the oil tank steamships did not materialize at the time anticipated, and we were advised later that the placing of them depended on legislation being enacted, authorizing the Dominion Government to assist in shipbuilding by extending credit to buyers. The act which the Dominion Parliament passed authorizing a certain credit, details of which have already been given in Canadian Railway and Marine World, was not considered to be sufficiently attractive to the parties concerned, in view, it was stated, of the U.S. Shipping Board's policy of extending a ten year credit and otherwise more favorable terms to purchasers of cargo ships built by the Board. A suggestion was made that a 66 2/3% credit by the Dominion Government would be sufficiently attractive to give Canadian shipyards sufficient orders to keep them occupied for 18 months at least.

Newman Erb, who has been associated with the company from its inception, was born in Germany, and educated at St. Louis, Mo., where he was engaged in law practice from 1872 to 1892. In 1885 and 1886, he was General Attorney for Arkansas, Tennessee & Missouri, of the Fort Scott & Memphis Rd., and from 1886 to 1898, President, Western Telegraph Co., now owned by Western Union Telegraph Co. He is President, Ann Arbor Rd., and is also said to be President, British Columbia Copper Co., Vice President, New Dominion Copper Co., and an officer of Canadian Copper Co., and has an office at 42 Broadway, New York, N.Y. W. M. Wadden, Treasurer and a director, is Erb's Secretary, and I. M. Dittenhoefer, another director, is a New York attorney.

An Ottawa press dispatch of Nov. 19, stated that the London Guarantee & Accident Co., which gave a bond for 10% of the contract price, which is $1,661,220, for each ship, had failed to reply to telegrams and letters from the Marine Department asking it to agree to the Department advancing sufficient funds to pay wages, and that without this consent no advance could be made. The dispatch also stated that the guarantee bond provided that in the event of failure by the contractors to complete the work the guarantee company had the option of doing so.

A Vancouver press dispatch of Nov. 15 states that Newman Erb has made an offer to creditors to pay all claims of $100 and under, and one third of all remaining claims, at once, another third on receipt of the ninth instalment to be paid by the Government on account of the construction of the two ships for Canadian Government Merchant Marine Ltd., and the remaining one third on receipt of the tenth instalment.

## Disposal of Steel Plates by Marine Department.

Ottawa press dispatch, Nov. 19.—Cable advices from G. H. Flood, Purchasing and Contract Agent, Marine Department, who is in England looking into the market for Canadian steel plates, indicated that Canada will be able to dispose of but few of the plates in Great Britain. The Dominion Government entered into a contract with the Dominion Iron & Steel Co. to take a portion of the product of the Sydney plant and dispose of it. Consequently, the Government is now trying to dispose of a portion of the 1921 output of the plant, but Mr. Flood states that German and Belgian competition in Great Britain is now an appreciable factor, and that Canada will meet with strong competition.

While the Dominion Government is trying to dispose of steel plates, it is stated at the Marine Department that a contract for 2,500 tons of plates for use on Hydro electric power construction at Niagara Falls will be filled in the United States. The situation, therefore, appears to be that, while the Dominion Government is seeking a market, plates for provincial work are being purchased in the U.S.

Sale of Canadian Naval Service Ships. We are officially advised that the two submarines which were purchased by the Government in the early stages of the war for service on the Pacific coast, and H.M.C.S. Niobe have been sold to the New Brunswick Rolling Mills, St. John, N.B. The understanding is that the Niobe is to be dismantled for scrap purposes. The ships Canada and Grilse have not yet been disposed of.

# Mainly About Marine People.

Sir Montagu Allan, formerly of the Allan Line Steamship Co., has been elected a director of the Guarantee Co. of North America.

G. M. Bosworth, Chairman, Canadian Pacific Ocean Services Ltd., and Mrs. Bosworth, have returned to Montreal, after a visit to Virginia Hot Springs.

Major P. J. A. Duff, son of Thomas A. Duff, General Counsel and Assistant to General Manager, Great Lakes Transportation Co., etc., was married at Toronto, Nov. 3, to Miss L. E. Emmett.

G. H. Flood, Purchasing and Contract Agent, Marine and Fisheries Department, left Ottawa, early in November, for England, on official business, accompanied by Mrs. Flood. During his absence his duties are being attended to by J. J. Skelly, Assistant to Purchasing and Contract Agent.

R. S. Gourlay has been reappointed one of the Toronto Harbor Commissioners, by the Dominion Government, for three years from Oct. 22.

James H. Hall, formerly President, Westerian Transportation Co., Ottawa, who died at L'Orignal, Ont., Sept. 23, left an estate valued at $73,271, his wife being appointed sole executor. The estate included 78 shares in Ottawa Transportation Co., valued at $3,900, 109 shares in Forwarders Ltd., Kingston, Ont., mentioned as of no value, and shares in the Montreal Transportation Co., valued at $7,933, due on agreement with Canada Steamship Lines Ltd.

H. E. A. Hawken, who has been appointed acting Deputy Minister of Marine and Fisheries, as stated in Canadian Railway and Marine World for November, was born at Ottawa, Sept. 28, 1879, was educated in public and high schools in Ottawa, and was for some time employed in the lumber business there by the W. C. Edwards Co. He entered the Dominion Government's service, as a junior clerk, Jan. 7, 1902, receiving his first permanent appointment Feb. 3, 1905, and working up through the different grades of the service until he was appointed Chief Registrar of Shipping, April 1, 1917. On April 1, 1920, he was appointed Assistant Deputy Minister of Marine, and on Nov. 1, 1920, acting Deputy Minister.

C. Gardner Johnson, of C. Gardner Johnson & Co., ship brokers and general agents, also Lloyd's agent for British Columbia, and C.P.R. Co.'s Marine Notary, Vancouver, has left, accompanied by Mrs. Johnson, for an extended trip. They will sail from New York for Tangier, and expect to visit Italy and France en route to England, where Mr. Johnson will visit Lloyd's and attend to other business. From London he will probably go to Stockholm, and sail back, via San Francisco, by one of the Johnson Line of Stockholm steamships, for which he is agent.

Alex. Johnston, who resigned his position of Deputy Minister of Marine and Fisheries recently, to enter the British Empire Steel Corporation's service, appeared before the Dominion Government's Tariff Commission at Halifax, Nov. 8, and asked that the Corporation's President, R. M. Wolvin, be allowed to submit the corporation's case to the Commission at Montreal.

Walter Lambert, M.I.N.A., naval architect, and marine surveyor, Montreal, has been commissioned by pulp and paper interests on the Gulf of St. Lawrence, to make an investigation of their facilities, to determine the best means of transportation for moving pulpwood from their lands to their mills.

Major A. C. Lewis, formerly Secretary, Toronto Harbor Commission, and now Secretary, Canadian Deep Waterways and Power Association, who was the Conservative candidate at the by-election for the representation of Northeast Toronto in the Ontario Legislature, on Nov. 8, was elected, polling 8,035 votes, against 4,351 for Major W. H. Kippen, Liberal, and 1,882 for Jas. Higgins, soldier-labor.

Thos. Long, President, Thos. Long & Co., general merchants, Collingwood, at one time a director of the Northern Navigation Co. of Ontario, and a former President of Collingwood Shipbuilding Co., who died at his house in Toronto, Nov. 7, left an estate valued at $1,321,900.43, apart from insurance and personal trusts made by him in his lifetime, and which do not form part of the estate.

Capt. C. Lorway, who died at Sydney, N.S., Oct. 31, aged 56, was at different times in command of several ships sailing out of that port, but retired from seafaring life about 20 years ago, and had since held a position in the Supreme Court of Nova Scotia. John Lorway, in Canadian National Rys. service in British Columbia, is a brother.

Capt. E. P. McGannon, mate of the Prescott and Ogdensburg Ferry Co.'s s.s. Miss Vandenberg, died at Prescott, Ont., Oct. 28.

Lieut.-Col. Geo. P. Murphy, C.M.G., President, Ottawa Transportation Co., Ottawa, has been elected a member of the Dominion Marine Association's executive committee, in place of E. H. Beazley, General Manager, Union Steamship Co. of British Columbia, Ltd., Vancouver, who was killed in a aeroplane accident at Lulu Island, B.C., May 24.

James J. Nelligan, who was appointed Managing Director, Walford Shipping Co., Montreal, recently, was born at Hamilton, Ont., Jan. 20, 1876, and entered transportation service in 1892, since when he has been, to 1904, in various positions, G.T.R., at Hamilton, St. Catharines, Ingersoll, Ont., and Montreal; 1904 to 1907, Travelling Freight Agent, Northern Navigation Co. of Ontario, Montreal; 1907 to Mar. 1904, General Agent, Canadian Lake Line, Montreal; Mar. 1914 to the date of his present appointments, Division Freight Agent, Canada Steamship Lines, Montreal.

J. W. Norcross, President and Managing Director, Canada Steamship Lines, returned to Canada at the end of November, after a business trip to Great Britain. He is reported to have stated that he has obtained numerous contracts, which will have a far reaching effect, not only for his company, but for Canada.

Sir Frederick Orr-Lewis, President, Canadian Vickers Ltd., and Lady Orr-Lewis and family, left Montreal, Nov. 4, after spending some months in Canada, to sail from New York, for England.

Sir Ernest Manifold Raeburn, K.B.E., who retired recently from the position of representative of the British Ministry of Shipping in New York, has been appointed General Manager for Scotland for Canadian Pacific Ocean Services, Ltd., with office in Glasgow. He is a son of Sir William H. Raeburn, M.P., and is at present a member of the firm of Raeburn & Verel, shipowners, Glasgow. He served the Government in various capacities during the war, and was created a K.B.E. for his services in America. He will assume his new duties Jan. 1.

Thomas Robb, Manager, Shipping Federation of Canada, sailed from New York on the s.s. Mauretania, for Great Britain, Oct. 28, on his way to Geneva, Switzerland, to represent Canadian shipping interests in connection with the League of Nations.

Henry B. Smith, President, Collingwood Shipbuilding Co., Davie Shipbuilding & Repairing Co., and Halifax Shipyards Ltd., who removed from Owen Sound to Toronto, a few months ago, was entertained at dinner by the Owen Sound Board of Trade and City Council, Nov. 7, and presented with an illuminated address.

A. R. Tibbits, Inspector of Harbor Commissions, is acting as Assistant Deputy Minister of Marine and Fisheries, at Ottawa, consequent on the appointment of H. E. A. Hawken, Assistant Deputy Minister, as acting Deputy Minister.

J. A. Warner, General Manager, Mersey Dock & Harbor Board, Liverpool, Eng., who is making a tour of Atlantic ports in Canada and the U.S., inspected the Quebec harbor and the Davie Shipbuilding & Repair Co.'s plant at Lauzon, Que., Nov. 10. He visited Montreal Nov. 11 and subsequently left for New York, whence he sailed for Liverpool.

Senator Lorne C. Webster, President, Webster Steamship Co., etc., and Mrs. Webster, have returned to Montreal, after a visit to Japan.

R. M. Wolvin, President, Dominion Steel Corporation, etc., and Mrs. Wolvin, will leave Montreal, in December, for Europe.

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Navigation on Welland Canal. — The Superintending Engineer of the Welland canal, L. D. Hara, has issued the following notices to mariners:—Attention is drawn to the fact that Joseph Battle, in connection with his contract for riprapping the banks of the Lake Erie level, is loading scows with stone, on the westerly side of the canal, in the rock cut between Ramey's Bend and Humberstone, and unloading them chiefly between Welland and Port Robinson. All vessels passing this plant must do so at low speed, and with great caution, otherwise the penalty provided in par. 19 of the Canal Rules and Regulations will be imposed. Ships should not attempt to pass each othed adjacent to the plant in the rock cut. Considerable damage and inconvenience has already occurred to the plant on account of the excessive speed at which ships pass.

Shoaling in Lake St. Clair.—The U.S. Engineer Office has issued a notice to ship masters advising that recent survey developes shoaling in Lake St. Clair, in prolongation of the center dike, St. Clair Flats Canal. A gas buoy has been placed to mark the outer end of this shoal about 1,800 ft. from the lower end of the canals. Ships leaving or entering said canals will find greatest depth by proceeding on courses along the center lines of upbound and downbound channels, departing from or entering, the main lake channel, below said gas buoy.

## Atlantic and Pacific Ocean.

The Canadian-Australian Royal Mail Line's s.s. Makura, which is under overhaul at San Francisco, Cal., is also being converted into an oil burner. It is expected that she will return to service between Victoria, B.C., and Sydney, N.S.W., about Dec. 15.

An agreement is reported to have been concluded by the Dominion Government with Canadian Pacific Ocean Services Ltd. for the carriage of all Canadian mail to the Orient, from Vancouver and Victoria, at a fixed price per pound. It is stated that the terms are similar to those in force for the carriage of United States mails to the Orient.

In one week recently the Canadian Pacific Ocean Services made a record for the St. Lawrence with six big ocean liners, with approximately 5,000 passengers, en route to Canada simultaneously. It is stated that no other company has ever had this number of liners making the westbound trip to Canada at the one time.

The White Star Line's s.s. Olympic, which was reconditioned recently, after her war service, and equipped with oil burning apparatus, has made a record trip between New York and Cherbourg, France. She sailed from New York, Nov. 6, and arrived at Cherbourg, Nov. 12, completing the voyage in 5 days 13 hr. and 12 min. at an average speed of 22.53 knots an hour.

Elder Dempster & Co.'s s.s. Chama, which grounded on Bellechasse Island, during October, while outbound for West and South African ports, was released at the end of the month and taken to Quebec, where she discharged cargo, and subsequently was taken to Montreal, where she was drydocked for repairs by Canadian Vickers Ltd. The repairs were expected to be completed by the end of November.

The s.s. Koenig Friedrich August, which Canadian Pacific Ocean Services Ltd. has purchased from the British Government, is one of the German steamships which came into the hands of the allies on the conclusion of the war. She was operated formerly by the Hamburg-American Line, to New York. She was built by Blohm & Voss, Hamburg, Germany, in 1906, and is of 9,462 tons net. Her dimensions are,—length 475.7 ft., breadth 55.3 ft., depth 30.9 ft. We are officially advised that she will probably be renamed Montreal, but that it had not then been decided on what route she was to be run.

## Maritime Provinces and Newfoundland.

The French s.s. Poinsot, bound from Florida to France, put in at Halifax, N.S., Nov. 15, for minor repairs to machinery.

Eastern Steamship Lines withdrew its s.s. Governor Dingley from the St. John, N.B.-Boston service, Oct. 29, for the winter, and stated that it expected to resume service about April, 1921.

The British s.s. Anglesea, which had been in the Reid Newfoundland Co.'s dock undergoing repairs to her bilge pumps, etc., left St. John's, Nfld., Nov. 1, on her return voyage to Rotterdam.

The French s.s. Pro Patria, which ran aground at the entrance to False Bay, Sydney, N.S., Nov. 16, was released on the following day by the tug Roebling. She sustained no damage and proceeded on her voyage to St. Pierre, Miquelon.

The s.s. Lady Evelyn, owned by the Gulf of St. Lawrence Shipping & Trading Co., Quebec, and operating between Nova Scotia and Magdalen Island ports, was attached at Pictou, N.S., Nov. 5, on a claim for $12,000, for repairs made to the ship last winter, by Pictou Foundry Co.

Samuel Harris Ltd. and others, owners of the s.s. General Currie, her cargo and freight, have entered action in the Newfoundland Admiralty Court at St. John's, Nfld., against the s.s. Portia, for $15,000 damage sustained in a collision in Mortier Bay, Nfld., June 29. The s.s. General Currie was built during this year by the Dominion Shipbuilding Co., Toronto.

The St. John Dry Dock & Shipbuilding Co., which has the contract for the Courtenay Bay improvement works and a dry dock at St. John N.B., has bought the tug Katherine K. from the Dominion Public Works Department. She was built at Montreal in 1915, and is screw driven, by engine of 6 h.p. Her dimensions are, length 58.4 ft., breadth 18.4 ft., depth 5.9 ft.; tonnage, 58 gross, 23 registered.

The Hudson's Bay Co.'s s.s. Nascopie arrived at St. John's, Nfld., towards the end of October, about a month overdue, after her usual trip to Fort Churchill, and various trading stations in Hudson Bay and Labrador. After taking on supplies at St. John's she proceeded to London, Eng., with a large cargo of furs. It is stated that she was delayed on her voyage, through making calls at certain ports which should have been made by the company's s.s. Pelican, but which she was prevented from making owing to being damaged by ice in Hudson Strait.

A. R. Dufresne, Manager and Chief Engineer, St. John Drydock & Shipbuilding Co., is reported to have stated at St. John, N.B., Nov. 1, that the excavation in connection with the drydock will be completed during January and it is anticipated to have the drydock ready within the contract time, also that he anticipated that the breakwater in Courtenay Bay would be completed during January and that good progress was being made with the dredging. The soil taken out by dredging is being used to reclaim about 25 acres of land on which will be built shops for the drydock.

## Province of Quebec Marine.

The Keystone Transportation Co.'s s.s. Keywest grounded on the Chateauguay shoals in Lachine Lake, Oct. 31.

The Sincennes-McNaughton Line's barge Augustus, which sank in the Soulanges canal, Nov. 11, was raised Nov. 13. There was little delay to navigation, only the larger ships being affected, as the channel was not completely blocked.

The Imperial Oil Co.'s s.s. Chinampa, which ran aground, about 300 ft. from the company's wharf at Montreal, towards the end of October, was released by six of the Sincennes-McNaughton Line's tugs, Oct. 28, without apparent damage, owing to having stuck in the soft bottom.

R. A. Wiallard, agent, Marine Department, Montreal, announced Nov. 11, that the removal of gas buoys from the St. Lawrence River would be commenced between Nov. 20 and 25, as weather permitted, and the gas buoys removed would be replaced by steel buoys until the actual close of navigation.

A report concerning shipping at the port of Montreal, to the end of October, shows 582 ship arrivals this year, having a tonnage of 1,767,879, against 641 arrivals with a tonnage of 1,825,128, for the same period of 1919. The decrease is said to be chiefly in the export of grain, the passenger trade having been heavier than in 1919.

The Kirkwood Steamship Co., Montreal, which, through T. M. Kirkwood, Montreal, bought the yacht Speedy II. from the Government, and which has also bought a number of steam trawlers built in Canada during the war for the British Government, is reported as likely to inaugurate a river steamboat service on the reopening of navigation in the spring.

The schooner Mina Nadeau, which was launched at Port Daniel, Que., Oct. 1, and which, owing to the failure of the tide to rise to the anticipated height, stuck in the sand, has been floated successfully, and towed to the breakwater. She has been chartered to load at Port Daniel for Cuba. She is of 327 tons, and is owned by Nadeau & Tyer, of Port Daniel and Halifax.

The s.s. Zephyr P., owned by Caughnawaga Transport Co., Lachine, Que., has been re-registered as Sault St. Louis, owing to material alterations, having been lengthened 5 ft. She was built at Sorel, Que., in 1910, and rebuilt there in 1920, and is screw driven by engine of 16½ h.p. Her dimensions are,—length 98.3 ft., breadth 22.3 ft., depth 7 ft., tonnage 202 gross, 124 net.

## Ontario and the Great Lakes.

The Montreal Transportation Co.'s s.s. Atikokan, engaged in the coal trade, arrived at Halifax, N.S., from St. John, N.B., Nov. 14, for repairs to one of her boilers.

The s.s. Samuel Marshall, owned in Montreal, was tied up at lock 2 on the Welland Canal, Nov. 8, on a writ of the Admiralty Court's Ontario Division on a claim against the owners.

Low water in the Detroit River in the early part of November contributed considerably to delays in navigation. The chief sufferers were ore carriers taking ore to U.S. ports.

Canadian Steamship Line's s.s. Stormount, while en route from Port Arthur to Montreal, with a cargo of wheat, ran aground in the Rapide du Plat, near the upper entrance of Morrisburg Canal, Nov. 4.

The s.s. John B. Ketchum 2nd, owned by the George Hall Coal Co. of Canada, Montreal, which grounded on a shoal near Morrisburg, Ont., during a heavy fog, towards the end of October, was released after a few days.

Two steamships, Juvigny and Chippewa, each 2,305 gross tons, built by the Detroit Shipbuilding Co. at Wyandotte, Mich., left the yards for the coast, via the Welland Canal and the St. Lawrence River, during November. They are owned by Independent Steamship Co., Wyandotte, Mich.

It is announced that the assets of the Rideau Steamboat Co. Ltd., Ottawa, are to be sold. The company owns the s.s. Wanakewan, which was built at Kingston in 1910. She is screw driven by engine of 8 h.p., and her dimensions are, length 70.2 ft., breadth 15.4 ft., depth 5.2 ft.; tonnage, 68 gross, 44 net.

The s.s. Maplegrove, formerly Chero-

kee, and owned by Canada Steamship Lines, Ltd., which rammed the lower gates of lock 2 in the Welland Canal, July 11, and was otherwise abandoned as a total loss, has been removed from the Canadian register. The wreck is reported to have been sold at J. F. Sowards, Kingston, Ont.

The s.s. Landbo, owned by Landbo Transportation Co., Sarnia, Ont., and which foundered in Lake Huron, Aug. 1, 1919, has been removed from the Canadian register. She was built at West Bay City, Mich., in 1890, rebuilt in 1904, and underwent large repairs in 1914, and was formerly named Nyanza and owned by Bolan and Cornelius, Erie, Pa.

The Dominion Public Works Department received tenders to Nov. 23 for the purchase of the steam tug, Sir John and dredge 120 (Sir Robert), as they are no longer required by the department. The tug Sir John was built at Sorel, Que., in 1902, and is screw driven by engine of 8 h.p. Her dimensions are,—length 81.2 ft., breadth 17.3 ft., depth 8 ft., tonnage 94 gross, 41 net.

The s.s. Compton, owned by the George Hall Coal Co. of Canada Ltd., Montreal, was libelled at Ogdensburg, N.Y., for $25,000, at the instance of the U.S. owners of the s.s. Lakewood, for damages sustained when the s.s. Compton carried away the gates when emerging from the Cornwall canal recently. It is claimed that the s.s. Lakewood was struck by one of the gates, causing her to sink.

The steam tug Eleanor, owned in Port Dalhousie, was considerably damaged by fire at St. Catharines, Nov. 7. She was engaged on the repair of the pier there, and it was said that fires were left burning on board when she was tied up at night. The upper works were completely destroyed. She was built at Port Maitland, Ont., in 1895, and was screw driven by engine of 12 h.p. Her dimensions are,—length 56 ft., breadth 12 ft., depth 5.8 ft., tonnage 26 gross, 18 net.

J. E. Russel, harbor contractor, Toronto, has bought the wreck of the s.s. T. P. Phelan from the underwriters, and has commenced salving the ship. The s.s. T. P. Phelan was owned formerly by Canada Steamship Lines, was wrecked on the Iroquois shoal, in the River St. Lawrence, near Brockville, Aug. 19, and was later abandoned to the underwriters. She was built at Three Rivers, Que., in 1918, and was screw driven by engine of 65 h.p. Her dimensions are,—length 241 ft., breadth 41 ft., depth 14.4 ft., tonnage 1,320 gross, 769 net.

The Circuit Court, at Port Huron, Mich., has decided that the Reid Wrecking Co., Sarnia, Ont., is entitled to retain $5,000 paid to it by C. Kurz, Philadelphia, Pa., for a 90 day option on the s.s. John Sharples. The prospective purchaser claimed that the requirements of an ocean going steamship were not fulfilled in the John Sharples, and he did not become aware of this until after the payment had been made. The contract price was $90,000, and the judge held that the financial loss sustained by the owners in not having the sale go through, warranted them in retaining the amount paid.

The s.s. Keystorm, owned formerly by Keystone Transportation Co., Montreal, and which was wrecked in Chippewa Bay, St. Lawrence River, in 1912, will, it is reported, be raised shortly. The ship was abandoned to the underwriters, and the wreck is reported to have passed to the Great Lakes Transportation Co., Midland. It is stated that a contract is being arranged with J. E. Russell, harbor contractor, Toronto, for salving the ship, which will be undertaken chiefly by the use of steel pontoons. For several years, continuous attempts have been made to raise this ship, which is lying on her side in 130 ft. of water, and it is said to be the deepest salvage job ever attempted in Canada.

The s.s. Huron, which was bought recently by A. E. Mathews, Toronto, from Mutual Transit Co., Buffalo, N.Y., has been transferred to the Canadian register and renamed Huronton. She was built at Lorain, Ohio, in 1898, and is of the awning deck type, with steel hull built on the channel system, with double bottom for water tight ballast, 3 watertight and 2 non watertight bulkheads, steel boiler house, electric lighting, hatches spaced 24 ft. centers. Her dimensions are,—length b.p. 238 ft., breadth moulded 42 ft., depth moulded 26½ ft., tonnage 1,945 gross, 1,309 net. She is equipped with triple expansion engines, with cylinders 18½, 31 and 51 in. diar., by 36 in. stroke, 900 i.h.p., at 90 r.p.m., supplied with steam under forced draft by a Scotch boiler 14½ ft. diar. by 11½ ft. long at 170 lbs.

The Columbia Steamship Co.'s s.s. Francis Widlar ran aground on Pancake shoals, near Whitefish Bay, Lake Superior, Nov. 13, during a heavy storm, and is believed to be a total loss, the crew being rescued with considerable difficulty. The ship was built at Cleveland, Ohio, in 1904, and has a steel hull on the channel system, with steel tank top where no wood ceilings are fitted, 3 watertight and 2 non watertight compartments, steam pump wells, etc. Her dimensions are,—length b.p. 416 ft., breadth moulded 50 ft., depth moulded 28 ft., tonnage 4,682 gross, 3,368 net. She is equipped with triple expansion engines, having cylinders 22, 35 and 58 in. diar. by 40 in. stroke, 1,460 i.h.p., at 85 r.p.m., supplied with steam under induced draft by two Scotch boilers, each 13 ft. 2 in. diar. by 11½ ft. long at 170 lb.

Quebec Admiralty Court, on Nov. 11, dismissed the claim of C. A. Finnegan, Buffalo, N.Y., for $76,997.62, as balance due on a mortgage executed in Buffalo, Nov. 19, 1918, and payable in U.S. funds at Buffalo, July 1, 1919, with interest at 6%, on the s.s. North West (now Maplecourt, registered in Canada under the name of the Davie Shipbuilding & Repair Co., Lauzon, Que.). In dismissing the claim, it was pointed out that the mortgage was registered according to New York State law and regulations, and at the time of instituting the proceedings, the ship was not under arrest or seizure, and the Canadian court had no jurisdiction. Leave was given to amend the claim, and it was then alleged that C. A. Barnard, K.C., Montreal, had agreed to place the ship on the Canadian regis-

## Ships Registered in Canada During August, 1920.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing ships of less than 100 tons register.

### STEAM.

| No. | Name | Port of Registry | Where and when built | Length | Breadth | Depth | Gross Tons | Reg. Tons | Engines, Etc. N.h.p. | Owners or managing owners |
|---|---|---|---|---|---|---|---|---|---|---|
| 150241 | Alice L. Smith | Halifax, N.S. | Montreal, Que. . . 1917 | 84.0 | 19.2 | 10.0 | 98 | 50 | 24 Sc. | A. Smith, Dartmouth, N.S. |
| 141760 | Canadian Otter* | Montreal . | Welland, Ont. . . 1920 | 319.9 | 43.9 | 22.7 | 3097 | 1887 | 188 Sc. | Minister of Marine, Ottawa. |
| 141834 | Canadian Runner* | " . | Port Arthur, Ont. 1920 | 320.0 | 43.8 | 22.5 | 3091 | 1812 | 198 Sc. | Minister of Marine, Ottawa. |
| 141765 | Canadian Victor* | " . | Montreal . . 1920 | 400.0 | 52.4 | 28.5 | 5454 | 3340 | 266 Sc. | Minister of Marine, Ottawa. |
| 98982 | Guide | " . | Dumbarton, Scotland . 1891 | 114.3 | 21.0 | 11.4 | 156 | 82 | 24 Sc. | J. E. Bernier, Lauzon, Que. |
| 141743 | Labrador | Quebec, Que. | Lauzon, Que. . . 1918 | 125.0 | 23.4 | 13.6 | 317 | 174 | 61 Sc. | Gulf of St. Lawrence Shipping & Trading Co., Montreal. |
| 141839 | Lehigh | Montreal . . | Wyandotte, Mich. . 1880<br>Levis, Que. . . 1920 | 247.9 | 35.6 | 15.3 | 1506 | 888 | 183 Sc. | George Hall Coal Co. of Canada, Ltd., Montreal. |
| 141460 | Mary Smith | Halifax, N.S. | Sorel, Que. . . 1917 | 84.0 | 19.2 | 10.0 | 98 | 50 | 24 Sc. | A. Smith, Dartmouth, N.S. |
| 141841 | North American | Montreal . | Bridgeburg, Ont. . . 1920 | 251.0 | 43.6 | 20.5 | 2280 | 1315 | 146½ Sc. | North American Steamship Co., Toronto. |

*Equipped with wireless.

### SAILING.

| No. | Name | Port of Registry | Rig | Where and when built | Length | Breadth | Depth | Gross Tons | Tons Reg. | Owner or Managing Owner. |
|---|---|---|---|---|---|---|---|---|---|---|
| 141828 | G. and M. No. 1 | Vancouver, B.C. | Scow | New Westminster, B.C. . . 1917 | 80.0 | 30.0 | 7.2 | 164 | 164 | Grant & MacDonald, Ltd., Vancouver, B.C. |
| 141464 | Roy Bruce | Shelburne, N.S. | Schr. | Shelburne, N.S. . . 1920 | 108.9 | 27.3 | 10.8 | 196 | 150 | R. F. Hollett, et al, Burin, Nfld. |
| 141627 | Rupert K | Parrsboro, N.S. | " | Spencers Island, N.S. . . 1920 | 147.6 | 33.9 | 12.1 | 414 | 378 | A. O. Seaman, et al, Parrsboro, N.S. |
| 135289 | Sir J. J. Ld. No. 7 | New Westminster | Barge | Vancouver, B.C. . . 1913 | 90.0 | 32.7 | 9.9 | 245 | 245 | Grant & MacDonald, Ltd., Vancouver, B.C. |
| 135290 | Sir J. J. Ld. No. 8 | " | " | " . . 1913 | 90.0 | 32.7 | 9.9 | 245 | 245 | " " " " |
| 135291 | Sir J. J. Ld. No. 9 | " | " | " . . 1913 | 90.0 | 32.7 | 9.9 | 245 | 245 | " " " " |
| 136650 | Sir J. J. Ld. No. 28 | " | " | " . . 1913 | 90.0 | 31.5 | 9.6 | 231 | 231 | " " " " |

ter, and to mortgage it in plaintiff's favor, but had failed to do so. This claim was also dismissed, as the judgment declared that neither the Admiralty Court Act of 1840, nor that of 1861, gave it the right to adjudicate on a claim arising out of a breach of contract. The court pointed out that the motion to dismiss could have been made at an earlier stage, and would thus have saved useless proceedings and expense to the parties concerned.

## Manitoba, Saskatchewan and Alberta.

The freight carried on the Red River during this year was considerably in excess of that carried in any year since the outbreak of war, and included wood and slabs, 1,000 cords; lumber 2,000,000 ft. b.m., and ice, 45,000 tons. A large quantity of cordwood is reported to have been held up on Lake Winnipeg owing to lack of central storage facilities in Winnipeg and St. Boniface. It is anticipated that facilities at the Winnipeg end will be greatly increased in the near future and that large quantities of lumber and building material will be taken in by the river route next year.

## British Columbia and Pacific Coast.

The Canadian Fish & Cold Storage Co.'s s.s. James Carruthers, which was expected to be a total loss, after her collision with the s.s. Surveyor, as mentioned in our last issue, is to be salved.

The Coast Steamship Co.'s s.s. Clansman, sank at her dock at Vancouver, Nov. 8. She was raised by the Vancouver Dredging & Salvage Co., the chief damage sustained being to her cargo of salt.

The C.P.R. British Columbia Coast Service s.s. Princess Royal had her starboard rail damaged, in a collision with the barge Louisiana, in tow of the s.s. Marmion, in the Granville channel, Nov. 10, during a dense fog.

The C.P.R. s.s. Princess Beatrice was hauled out at Yarrows Ltd. yards, Victoria, Nov. 10, for general cleaning and painting, and afterwards replaced the s. s. Princess Royal on the Prince Rupert run, the latter returning to Victoria for cleaning and painting.

The British Columbia Express Co.'s s.s. B.X., which was wrecked near Fort George Canyon, on the Upper Fraser River, Aug. 34, 1919, has been salved and taken to South Fort George by the same company's s.s. B.C. Express. On account of her condition, the salvaged ship was lashed to the other's side.

The wooden steamships which were built at Victoria, by the Foundation Co., during the war, for the French Government, are, according to reports, being dismantled in France, and converted into motor ships. It is stated that the boilers and engines have been removed, also the masts, and that they are being equipped with twin Diesel engines and two baldheaded masts.

The Vancouver Island Whaling Co., which has been organized at Victoria, recently, is reported to have acquired four steamships in Great Britain from the Admiralty for whaling purposes. S. C. Ruck, General Manager, and W. M. Kelly, engineer, with Capt. B. Johnson, have been in Great Britain for some time in connection with the acquiring and preparing of the ships.

The Vancouver Harbor Commissioners have prepared a statement of the shipping handled in the harbor for the year ended Aug. 31, 1920, showing a total of 430 deep sea ships, with a tonnage of 2,545,000, dealing with cargo, 725,000 cubic tons inward, and 425,000 cubic tons outward; 8,220 coastwise ships with tonnage of 7,810,000, and cargo 735,000 cubic tons inward, and 298,000 cubic tons outward.

The Terminal Steam Navigation Co.'s s.s. Ballena was badly damaged by fire at Union Steamship Co.'s wharf, Vancouver, Nov. 13, one of the fireman losing his life, being cut off from escape by the flames. The fire is believed to have been caused by the ignition of oil fuel. The s.s. Ballena was formerly named Joan, and was owned by the C.P. R. and operated in its B.C. Coast Service. She was built at Victoria, B.C., in 1892, and is screw driven by engine of 85 h.p. Her dimensions are,—length 176.8 ft., breadth 30 ft., depth 11 ft.; tonnage, 869 gross, 577 register.

A Vancouver press report states that the wreck of the freight steamship San Pedro, which went ashore on Brotchie Ledge, off the entrance to Victoria harbor, about 30 years ago, has been sold to Capt. Gardner of Victoria, B.C. The San Pedro sailed from Comox, B.C., for San Francisco, Cal., with a cargo of 4,500 tons of coal and struck on Brotchie Ledge, Nov. 22, 1891. At that time the cargo was valued at $2.50 a ton, but is now stated, if it still exists, to be worth $11 a ton landed on the wharf and it is stated that the purchaser hopes to salve it. The ship is lying in 8½ fathoms of water, and it is not believed possible that the hull can be raised.

## Ships Added to and Deducted From the Canadian Register During August, 1920

| | Steam. | | | Sailing. | | |
|---|---|---|---|---|---|---|
| | | —Tonnage— | | | —Tonnage— | |
| Added. | No. | Gross. | Registered. | No. | Gross. | Reg'red |
| Built in Canada | 23 | 14,743 | 8,833 | 6 | 843 | 761 |
| Purchased from foreigners | 1 | 1,506 | 888 | .... | ..... | ..... |
| Transferred from United Kingdom | 1 | 156 | 82 | 4 | 966 | 966 |
| Registered anew | 4 | 222 | 165 | .... | ..... | ..... |
| Added on remeasurements | .... | 1 | ..... | .... | ..... | ..... |
| Totals | 29 | 16,628 | 9,968 | 10 | 1,809 | 1,727 |
| Deducted. | | | | | | |
| Wrecked or otherwise lost | 11 | 1,470 | 825 | 9 | 1,049 | 1,001 |
| Broken up or unfit for use | 36 | 848 | 565 | 20 | 1,255 | 1,233 |
| Sold to foreigners | 5 | 3,510 | 1,926 | .... | ..... | ..... |
| Transferred to British Possessions | .... | ..... | ..... | 2 | 246 | 176 |
| Registered anew | 3 | 77 | 49 | 3 | 494 | 494 |
| Other vessels | 1 | 52 | 23 | .... | ..... | ..... |
| Deducted on remeasurements | .... | 353 | 242 | .... | ..... | ..... |
| Totals | 56 | 6,310 | 3,630 | 34 | 3,044 | 2,904 |

## Advice to Lake Sailors.

The U.S. Lake Carriers Association has issued a statement reviewing the past season's work by the Great Lakes fleets which says in part:—"In so far as the near future is concerned signs do not indicate any material falling off in the movement of commerce on the Great Lakes. Therefore, it looks as if all of those men now aboard the bulk freighters will have jobs at the beginning of 1921, and by sticking to the boats will have employment during the entire season. Bu there are conditions already well developed against which the lake sailor cannot afford to close his eyes or refuse to accept when making plans for the future.

"Along many lines the state of after war readjustment is completed, and with the general tightening up which is prevalent during winters in normal periods the extent will be more widespread. A general reduction of prices has occurred, and this means increased efficiency of production. History has ever shown that rate of production is low when there is one man for two jobs, and that it is high when there are two men for one job. When sailors leave their boats for the winter they will not find, as a whole, the shore jobs with the consummate ease that prevailed for three or four winters back. In all parts of the country there is an abundance of shop help looking for work. With the readjustment, the purchasing power of the dollar will increase, but money should at the same time become scarcer, so be thrifty and save your dollars now.

"While next year's prospects are good, the indications are, there will be many more men available, so that men with a job will have something worth while. This condition is being brought about by the situation on the sea. The shipping trade in British, French, Scandinavia, Japanese and American waters all has slumped, with no immediate sign of recuperation. While coastwise shipping on seaboard was in bloom many lake sailors went down, for the novelty as well as experience. The U.S. Shipping Board is laying up boats, so they will have to come back."

The lake sailors have exhibited thrift in banking their earnings, it is observed in reports of leading banks in Great Lakes ports. The deposits with the U.S. Postal Savings Banks, maintained on the mail boat C. F. Bielman, Jun., operating on the Detroit River, were higher than in previous seasons.

**Grain Handling Charges Against Ships.** The Dominion Marine Association has recommended that it is desirable that ships carrying grain should discontinue payment of any charges for shovelling, elevating, trimming or handling grain in any way, in fact that it should be loaded and unloaded free. The U.S. Lake Carriers Association has informed the grain trade that its member companies' ships will not pay shovelling charges after the reopening of navigation in 1921, and a special committee has been appointed to work in conjunction with the Dominion Marine Association with regard to the larger proposal.

**John Allsop,** General Agent for Canada Royal Mail Steam Packet Company, Halifax, N.S., writes: "As a regular subscriber to Canadian Railway and Marine World, I always peruse its contents with much interest."

# Wreck Commissioners' Enquiries and Judgments.

Enquiries have been hold and judgments delivered in connection with marine casualties, as follows:—

Stranding of s.s. Clare-Hugo Stinnes I.

Held at Pictou, N.S., Oct. 14, before Commander H. St. G. Lindsay, Commissioner, assisted by Capts. W. A. Beattie and D. C. Fraser, as nautical assessors, into the stranding of the British s.s. Clare-Hugo Stinnes I on Azet shoal, Pictou County, N.S., Sept. 30. The court, after hearing the evidence, which it stated was given in a perfectly straightforward manner, found that the stranding was caused by the ship having been set to the southward of her course, by the flood tide, which is very strong in the vicinity of Cape Tormentine, and was not taken into consideration when shaping the course after passing Cape Jourissin, and also, probably, by the difference in the deviation allowed on that course, and that which was found ultimately by observations taken later. The master, Capt. R. H. Nesbitt, showed a lack of judgment in not stopping his ship and making certain of his position, either by soundings or bearings, after sighting land, and for this he was severely censured. The court suggested that when masters of ships choose to navigate the Northumberland Strait in preference to taking the outside route, they should avail themselves of the latest official publications regarding tides, etc.

Stranding of s.s. Georgie.

Held at Montreal, Oct. 28, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. J. B. Henry and C. A. Lapierre, as nautical assessors, into the stranding of the Fracanda Line's s.s. Georgie, near Sillery, Que., in the River St. Lawrence, Oct. 21. In summarizing the evidence, the court stated that the master and his officers were all strangers to these waters. The master saw plainly that his ship was nearing piles, remnants of old wharves, but did not think it necessary to interfere, being under the impression that it was usual to pass close, as is done in many localities. The weather conditions were not such as to prevent a course being followed, or seeing objects. The evidence from all witnesses, including the pilot, was straightforward and intelligent, without attempts at subterfuge or excuse; the master and his officers were at their posts, and the wheelsman performed his task without reproach. The pilot's only excuse was that he thought himself farther away. The court declared itself nonplussed in establishing a reason for altering a course 11 deg. from the first course, which would have led the ship clear of all danger. The only conclusion it could draw was that, after passing the buoy at La Mouche, the pilot's mental powers and judgment became temporarily defective, for some reason which scientists, who have established the existence of such temporary conditions, have failed to find a cause. Whatever may be the reason, or his condition, the court exonerated the master and officers of the ship, and found that the pilot, J. B. Angers, who has had several accidents, was solely to blame, in that he erred in altering his course as much as 11 deg., and that he was in default for hazardous navigation. His certificate was therefore suspended for the remainder of 1920, and he was ordered to pay the costs of the investigation.

Montreal-Henry B. Hall Collision.

Held at Montreal, Oct. 15, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and J. B. Henry, as nautical assessors, into the collision between Canada Steamship Lines' s.s. Montreal and the Wilson Patterson Clifford Co.'s s.s. Henry B. Hall, near Sorel in the St. Lawrence River, Sept. 20. The evidence showed that the Montreal left her wharf at Sorel downbound, and when leaving she backed as far as the long wharf, and then began to turn to head down the river. In doing so she showed the Henry B. Hall, a down coming vessel, first her green light and then her red light. The Henry B. Hall's green light was also seen. When the Montreal had partly turned, a one blast signal was given which was unanswered by the Henry B. Hall. The Montreal heard the Henry B. Hall's signal of three blasts, but that signal was intended for the Henry B. Hall's engine room and not for the Montreal. While turning, the after port part of the Montreal came in contact with the Henry B. Hall, with slight damage to both ships. The weather was clear, and the wind was not strong enough to influence either ship. The pilot on the Henry B. Hall stated that he did not know where the Montreal was going, and that the one blast signal given by the Montreal may have been for the information of another ship also going down astern and to the south of the Henry B. Hall. The court expressed the opinion that under the circumstances existing, the Henry B. Hall was justified in not maintaining her course, and the fact that the Montreal could not be turned quickly did not afford any excuse for the collision. The crossing rule does not apply in this instance, as the one blast signal had been given some time before the collision, when the Montreal was south of the Henry B. Hall. The Henry B. Hall's procedure when the collision was imminent, to check and starboard, was proper. Had she gone astern, she would have neutralized the effect of her helm, as the speed at which she was going would not have been given in time, and the result of a full speed astern, or a port helm, would have been disastrous to both ships. Therefore the court found that Capt. F. X. Lafrance, master of the s.s. Montreal, was in default for contravention of article 32, and he was severely reprimanded. The pilot, O. Perron, of the s.s. Henry B. Hall, was exonerated from blame.

Stranding of s.s. Chama.

Held at Montreal, Nov. 3, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. J. B. Henry and C. J. Stuart, as nautical assessors, into the stranding of Elder Dempster & Co.'s s.s. Chama, near Bellechasse Reefs, in the St. Lawrence River, Oct. 21, while outward bound from Montreal to African ports. The court exonerated the master, Capt. A. D. Burroughs, from all blame, and although he was absent from the deck at the time, such absence was excusable and permissable. The second officer, W. T. Lane, failed to realize the importance of his duties, in not assuring himself of the lights that were passed, and were in sight, and when he called the pilot's attention to the fact that the ship was dangerously near the Bellechasse light, he should have called the master immediately. Had he followed the progress of the ship, the error of porting could have been remedied. He was therefore severely reprimanded for not realizing his responsibilities. The pilot, A. Baquet, if his own admission be accepted that he did not mistake the Crane Island light for the Bellechasse light, and that his order was a mistaken one, ought to have discovered the error sooner than he did, as the ship described the angle between her and the light to the extent of four points or 45°, and a complete minute elapsed. It was only after the lookout man had called a warning that a rectification was attempted. For this unaccountable mistake the pilot's license was suspended for 6 months to May 3, 1921, and he was, in addition, ordered to pay the costs of the enquiry.

## United States Shipping and Shipbuilding Notes.

The U.S. Shipping Board's new personnel is as follows:—Admiral W. S. Benson, reappointed as Chairman for six years; F. I. Thompson, of Alabama; J. N. Teal, of Oregon; J. A. Donald, of New York; C. H. Rowell, of California; G. D. Goff, of Wisconsin; and Charles Sutter, of Missouri.

The U.S. Bureau of Navigation has issued a summary of reports from shipyards showing number and gross tonnage of steel ships under construction or contract for private owners Oct. 1. On that date private U.S. shipyards were building, or under contract to build for private shipowners, 331 steel ships of 1,236,227 gross tons, compared with 345 ships of 1,236,547 gross tons on Sept. 1. These figures do not include government shipbuilding, or ships contracted for by U.S. Shipping Board.

Admiral Benson, Chairman, U.S. Shipping Board, has made a statement regarding the new agency agreement which has been adopted by the Board for management of its ships. The agreement for operation of the Board's fleet is the result of seven months study by its standing committee on agent's agreement, composed of representatives of the Board and of all steamship associations of the country. Under this agreement the agent will get nothing at all if he lets a ship lie idle. His commissions are based on freight collected; he must, in order to make anything, not only secure cargo for the ship, but secure it at best possible freight rates, and dispatch his ship quickly.

Admiral Benson, Chairman, U.S. Shipping Board, is reported to have said in addressing the American Petroleum Institute at Washington recently:—"Comparatively little is known of our enormous requirements of fuel oil and I believe that a brief resume of the efforts of the Shipping Board to purchase its fuel oil requirements and of problems which have confronted us in this respect during recent years, is essential to full appreciation of the extent to which the interests of the Shipping Board and of the American petroleum industry are interwoven. For 1919 our requirements of fuel oil were approximately 18,000,000 barrels; for 1920, 30,000,000 barrels; and for 1921, we estimate our requirements will amount to approximately 40,000,000 barrels."

## Canadian Notices to Mariners.

The Marine Department has issued the following:—

**British Columbia**, Vancouver Island.—The channel south of Limestone Island, Quatsino Sound, has been examined by a Hydrographic Survey officer, and it appears to be clear of danger for a ship passing north of the Foul Islets and Single Island. The track recommended is from one cable north of the large western island of the Foul Islets to two cables north of Single Island, and thence in midchannel, passing two cables north of Pender Point and 900 ft. off shore. The set of the current across the western end of the channel is to the southward toward Foul Islets, and in the vicinity of the latter the depths are very irregular and some caution should be exercised. A rock lying 950 ft. from the south point of the largest western Foul Islet has been found, with 11 ft. of water on it at low water. The drying bank off the south shore extends to within 900 ft. of this rock and the channel is therefore practically useless for navigation.

The Public Works Department has completed the dredging of a basin 465 ft. long and 200 ft. wide with a least depth of 35 ft. alongside the main wharf at the William Head quarantine station.

Strait of Georgia.—The Government wharf at Powell River has been completed. It adjoins the north side of the breakwater at its outer end, and is 340 ft. long by 60 ft. wide. On the north face of the wharf the Public Works Department has dredged a basin 70 ft. wide, the full length of the wharf, with a least depth of 19 ft. alongside the wharf.

Cousins Inlet.—The depth of water over the uncharted rock, situated 4.6 cables 128 deg. from the light at Wearing Point, Wallace Bay, is 3 ft.

The Public Works Department has removed the rocky patch 150 ft. from the middle of the Western Fuel Co.'s loading wharf, Nanaimo harbor, to a least depth of 29 ft.

Malaspina Strait, Texada Island.—An occulting white acetylene gas light, shown from a lens lantern on a concrete base, surmounted by a staff carrying a wooden slatwork drum, has been established on the top of the existing day beacon on Cyril rock, off Grilse Point. The light is unwatched.

Broughton Strait.—An occulting white acetylene gas light, shown from a lens lantern, has been established on Lewis Point, on the west side of the entrance to Beaver Cove. The light is unwatched.

**New Brunswick**, Northumberland Strait.—The back range light on the Kouchibouguac Bar has been discontinued temporarily, owing to the shifting of the channel. The front range light is on the east side of the south beach, in Kouchibouguac Bay.

**Nova Scotia**, North Coast. — Range lights have been established on the Pictou River as follows:—Albion Range, front light, on west shore of East River, near abandoned coal loading piers, occulting white acetylene gas, shown from a lens lantern, at an elevation of 13 ft.; back light, on shore of bay, 1,550 ft. from front light, similar light at an elevation of 23 ft. Trenton Range, front light near outer end of east pier at entrance to Stonehouse Point, occulting white acetylene light, shown from a lens lantern at an elevation of 14 ft.; back light on point 1,300 ft. from front light, similar light at an elevation of 30 ft. The lights are unwatched. Ships going up the river will keep the Albion range lights in one, 144 deg. 30 min., until the Trenton range lights come in one, 119 deg. 30 min. This alignment leads to the piers at the entrance to Stonehouse Point lock.

**Ontario**, Lake Ontario.—The governing depths in the entrances to Toronto harbor are,—western entrance channel 14 ft. and eastern entrance channel 16 ft. below zero of the harbor master's gauge, which is 245 ft. above mean sea level at New York. While improvements are in progress in the harbor, mariners can secure additional information regarding depths in the different parts of the harbor, from the harbor master.

St. Clair River.—Two lights have been established on Walpole Island, lower St. Clair River. Both lights are occulting red acetylene gas, and are shown from a lens lantern at an elevation of 18 ft., from a pole, with a shed at base, on platform supported on piles. The lower light is in 5 ft. of water on east side of channel, midway between Russell Island light 12, and Russell Island shoal gas buoy, and the upper light is on east side of channel nearly opposite Russell Island shoal gas buoy, and about 1,800 ft. north of the lower light.

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**Of the world's shipping**, 16.3% are reported to be oil burners, 76% coal burners, 1.7% internal combustion engines, and 6% sailing.

**Hard times** are predicted in shipbuilding yards in the north of England, according to a London press dispatch, which says that shipowners are refusing orders to build owing to fluctuating prices and conditions due to high wages.

**Toronto Harbor Bridge.**—The Dominion Marine Association has recommended that the opening in the bridge proposed to be built over the western gap, at Toronto Harbor, should be 250 ft. clear space.

**Overhead Wires Across Welland Canal.** The Dominion Marine Association has recommended to the Dominion Government that wires across the Welland Canal should not be placed at a less height than that adopted as a minimum in the construction of the Quebec bridge, and in the erection of overhead wires at Three Rivers, Que.

**Ships on Canadian Register.**—An Ottawa dispatch states that the number of steamships on the Canadian register has decreased from 4,457 last year, to 4,435, but that the gross tonnage has increased from 930,367 last year to 1,060,477; also that sailing ships decreased from 4,220 to 3,887, the tonnage increasing from 512,992 to 513,492.

**Dues on Quebec Ships at U.S. Ports.**—Negotiations are proceeding with the U. S. Government to relieve ships from Quebec Province from payment of tonnage dues now imposed on them in U.S. ports, and to offset this, the Dominion Marine Association has taken action to secure an amendment to the Dominion law next session, recommending an amendment to the Canada Shipping Act to relieve U.S. ships entering Quebec ports from payment of hospital dues. Ships from Ontario ports do not pay tonnage dues on entering the U.S. ports, as no tax is imposed on U.S. ships in Ontario ports.

**Hudson Straits Customs Station.**—An Ottawa press dispatch says that a Canadian customs station is to be established at Port Burwell, in Hudson Straits. Heretofore there has been practically no check on ships going into Hudson Bay and northern coast territories to trade, but now all ships will be required to pass customs at Port Burwell. The customs officials will be materially assisted by the Royal Canadian Mounted Police patrol.

**Oil Burning Ships to be Reconverted to Coal Burners.**—We are advised that owing to the seriousness of the fuel oil situation on the Pacific Coast, the C.P.R. has decided to reconvert its coast steamships, so that coal may be used as fuel, and that this work will be undertaken early next year. At present, the company has three of its coast steamships using coal as fuel, viz., Princess Beatrice, Princess Royal and Otter, together with three tug boats.

**Overloading Ships for Lachine Canal Transport.**—The Superintendent of the Lachine Canal is reported to have announced that, owing to the phenomenally low river levels, particularly in Lake St. Louis, it is dangerous for ships to be loaded beyond a depth of 13 ft. 10 in. It is difficult to maintain the canal lock levels, and ships are running into danger through loading beyond that depth, apart from the damage being done to the lock sills. At normal times, the canal depth is 14 ft. 4 in.

**The Canadian Robert Dollar Steamship Co.'s** annual meeting was held at Vancouver, B.C., Nov. 11. It was stated that the facilities at Vancouver are good, and that the company has decided to maintain its headquarters there. During the year, the company established a service between New York and Vancouver, with calls at Cuban ports, and refrigerating systems were installed on the ships running to Oriental ports. The officers for this year are:—Melville Dollar, President; J. Harold Dollar, Vice President; K. J. Burns, Secretary; other directors, Robert Dollar and Stanley Dollar.

**Walford Shipping Co. Ltd.**, the incorporation of which, with office at Montreal, was announced recently, is acting as general shipping agents, and local agents for Walford Shipping Co., New York, and Walford Ltd., shipping agents and ship owners, London, Eng. The officers are:—President, Jas. Donald, New York; Vice President, A. S. Roberts, New York; Managing Director, J. J. Nelligan, formerly Division Freight Agent, Canada Steamship Lines Ltd., Montreal. C. A. Barnard, K.C., Montreal, is a director.

**Freeboard Regulations on Great Lakes.** The U.S. Government is considering the question of the establishment of loadline or freeboard regulations for ships on the Great Lakes, and the Dominion Marine Association has been active in making enquiries as to progress. The U.S. Department of Commerce appointed a committee to study the subject, and this was subdivided. A special committee known as the Lake Committee, consisting of Prof. H. C. Sadler, of Michigan University, and H. N. Harriman, of the Great Lakes Register, Cleveland, Ohio, is investigating conditions on the lakes. The U.S. Lake Carriers Association is in close touch with this committee, and the Dominion Marine Association is in correspondence with the lake carriers. An Atlantic Coast committee made its report, omitting the coasting ships from the recommendations. The recommendation for load line regulations for deep sea ships will probably go through at the coming session of the U.S. Congress.

## Naval Service Department's Hydrographic Surveys During 1920.

Canadian Railway and Marine World has been favored with the following official information as to work done by the Naval Service Department's Hydrographic Survey:—

During the past navigation season, R. J. Fraser and his assistants were engaged on board the s.s. Bayfield in surveying the north shore of Lake Superior between Cape Gargantua and Otter Head, including some sounding around Michipicoten and Caribou Islands. This district was carefully gone over but no new shoals or dangers were picked up. With the completion of this season's work the Canadian Hydrographic Survey of the Great Lakes may be said to be completed, but there will always be necessary re-surveys of new districts, and a few bays, that have been unfrequented, have been left unsurveyed. It has not yet been determined where Mr. Fraser and his party will be stationed next year.

The party under Chas. Savary, using the s.s. Cartier, have returned to headquarters after a successful season surveying off the north shore of Gaspe peninsula. Quite a considerable work has been done in the neighborhood of Martin River light to Cape Madeleine lighthouse, including the entrances to St. Anne River, Marsonis harbor and Mont Louis Bay and River. In addition to the work carried out from the ship a party under Edouard Ghysens was detached to make a survey of the harbor of Seven Islands and Clarke City. This has been completed and a new plan of this important port will be issued shortly after the opening of navigation.

On the British Columbia coast the survey parties have returned to headquarters at Victoria. The first party, under command of H. D. Parizeau, who used the s.s. Lillooet, was engaged in the early part of the season in making a re-survey of First Narrows, Vancouver harbor, not only sounding it, but giving it a thorough sweeping to pick up any lumps that might have been left by dredging. The new survey did not develop any spots with less than 26 ft. on them, and it showed that nearly all of the old Parthia shoal had been removed to a depth of 30 ft., with the exception of one spot with only 27 ft. over it, and that none of the dredging has filled in with debris from Capilano Creek.

The second party under Commander J. H. Knight, R.N., had the tug Restless, and was engaged in a re-survey of Quatsino Sound, where the Whalen Pulp & Paper Co. has established a large industry at Port Alice. This work will enable the Naval Service Department to issue a new and accurate chart of that sound.

## The Australian Government's Merchant Marine.

D. H. Ross, Canadian Trade Commissioner, writes from Melbourne as follows:—In a statement tabled in the Australian Parliament recently by the Commonwealth Government, it was explained that the object in establishing the Commonwealth line of steamships was to provide for the transportation of Australian produce to the world's markets. The primary object was not profits, but rather to prevent Australia being isolated through the world's shipping dis-

The Commonwealth Shipping Line now operates 18 ships (aggregate tonnage 65,951 tons), 16 requisitioned ex-German steamships (aggregate tonnage 77,746 tons), and five wooden steamships (aggregate tonnage 14,901 tons). The fleet comprises 39 steamships, aggregating 158,498 tons.

In all six steamships of about 5,000 d. w. tons capacity have been built in Australia and are being operated as part of the Government Merchant Marine. An extensive shipbuilding scheme is also being carried out, which will result in considerable additions to the fleet. Five large steel ships, each of 12,800 tons, are on order in England, and six similar ships will be built in Australia, provided a satisfactory agreement is completed with the unions connected with shipbuilding. There are now some 10 steamships of the shelter deck type under construction in various parts of the Commonwealth, as well as six steamships of another type.

The gross earnings of the line during the financial year ended June 30, 1919, were £2,487,627, and the gross expenditure was £1,327,592, the net profit being £1,160,035. The profit earned from the inception of the line up to June 30, 1919, was £2,063,534. Allowing for depreciation, the capital value of the fleet at the close of the financial year, 1918-19, was £1,338,759.

The net profits for the year 1919-20 are estimated at £220,000, the marked decrease being due to the extended maritime strike on the Australian coast in that period, which practically rendered the whole fleet idle from two to four months.

It is claimed by the Commonwealth Government that the line has had to face the strongest competition of the British shipping combine, but has, notwithstanding, received a fair share of support. It is not the Commonwealth Government's intention at present to undertake the carriage of mails between Australia and Great Britain, for the reason, it is officially stated, that the steamships which are at present owned and being built by the Commonwealth Government are essentially cargo ships, and are unsuitable, both as regards speed and accommodation, for mail ships.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Davis-Bournonville Co.**, Jersey City, N.J., has issued Bulletin 1A and 2, describing and illustrating the oxygraph, for cutting steel up to 20 in. thick with oxy-acetylene or oxy-hydrogen, the illustrations showing a variety of shapes cut in shipyards, tool shops, electric works and manufacturing plants.

**Galena-Signal Oil Co. of Canada Ltd.** has been granted supplementary letters patent authorizing the increase of its capital stock from $500,000 to $1,000,000, the increase to consist of 5,000 shares of $100 each.

**Independent Pneumatic Tool Co.**, Chicago, Montreal and Toronto, has issued circular 34 "Thor Pneumatic Tools—Aids to Industry."

**Whiting Foundry Equipment Co.**, Harvey, Ill., has issued a booklet of 50 pages, 11 x 8½ in., "Foundries, their complete equipment. Correct layout and equipment, for complete grey iron, steel, brass, car wheel and malleable iron foundries."

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

American Association of Port Authorities. M. P. Fennell, Jr., 57 Common St., Montreal.

Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.

Canadian Car Demurrage Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association — A. Eastman, 70 Bond Street, Toronto.

Canada Freight Association (Eastern lines)—G. C. Ransom, 909 Shaughnessy Bldg., Montreal.

Canadian Freight Association (Western Lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Board of Adjustment No. 1—R. Chapple, 263 St. James Street, Montreal.

Canadian Railway Club — W. A. Booth, 131 Charron St., Montreal. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Traffic League, A. H. Thorpe, 25 Balsam Ave., Toronto.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—A. E. Storey, 310 G.T.R. General Offices, Montreal.

Hydro-Electric Railway Association of Ontario —T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, 89 Chatham Ave., Buffalo, N.Y.

Niagara Frontier Summer Rate Committtee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Harbor Commissioner's Office, Quebec, Que.

Railway Association of Canada—C. P. Riddell, Montreal.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Transportation Club of Toronto—W. A. Gray, 257 Roxton Road, Toronto.

Transportation Club of Vancouver.—C. E. Blaney, Travelling Passenger Agent, Canadian Pacific Ocean Services Ltd., Vancouver, B.C.

## Transportation Conventions in 1921.

The names of persons given below are those of the secretaries, unless otherwise mentionel:—

Jan. 25 to 27.—American Wood Preservers' Association, San Francisco, Cal.; F. J. Angier, Baltimore & Ohio Rd., Baltimore, Md.

Jan. 27, 28.—National Association of Railroad Tie Producers, San Francisco, Cal.; E. E. Pershall, 720 Security Bldg., St. Louis, Mo.

Mar. 15 to 17.—American Railway Association, Division 4, Engineering, Chicago, Ill.; E. H. Fritch, 431 South Dearborn St., Chicago, Ill.

May 11.—Railway Accounting Officers' Association, Atlantic City, N.J.; E. R. Woodson, 1,116 Woodward Bldg., Washington, D.C.

May.—International Railway Fuel Association, Chicago, Ill.; J. G. Crawford, 702 East 51st St., Chicago, Ill.

June 15 to 22.—American Railway Association, Division 5, Mechanical, Atlantic City, N.J.: V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.

June 20.—American Association of Freight Agents; R. O. Wells, Illinois Central Rd., Chicago, Ill.

June 20.—American Train Dispatchers' Association, Kansas City, Mo.; C. L. Darling, Northern Pacific Ry., Spokane, Wash.

Aug. 24 to 26.—American Association of Railroad Superintendents, Kansas City, Mo.; J. Rothschild, Union Station, Kansas City, Mo.

Sept. 20 to 22.—Roadmasters' and Maintenance of Way Association, Chicago, Ill; P. J. McAndrews, Chicago & North Western Ry., Sterling, Ill.

Oct. 4 to 6.—Maintenance of Way Master Painters' Association, Buffalo, N.Y.; E. E. Martin, Union Pacific Rd., Kansas City, Mo.

## Gasoline Hoists

**LIGHT**, easily moved about on the job.

**COMPACT**, take up much less room than a steam hoist of the same capacity.

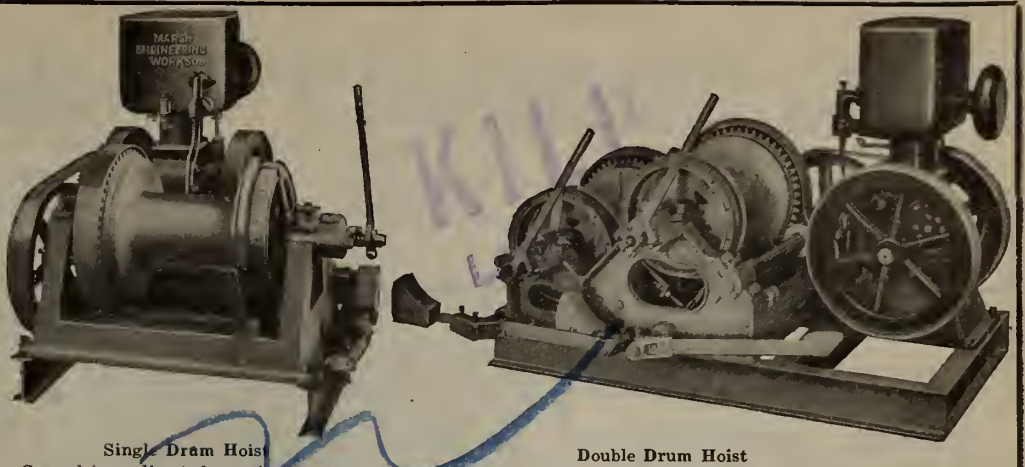
**FROST PROOF**—Have been tested in the coldest weather, and run on intermittent hoisting every day all winter, even at 20° below zero.

**POWERFUL**—These Hoists are very strongly constructed, and can be safely used for a considerable overload beyond their rated capacity.

**SPEEDY**—No lost time waiting for steam to make, or waiting on a tardy fire.

**ALWAYS ON THE JOB**—At any hour, day or night, they will start off at full capacity.

**SIMPLE**—Can be operated by any fairly intelligent workman.




Single Drum Hoist — Double Drum Hoist

Gear driven direct from the gasoline engine, and with motor rigidly mounted on same bed as Hoist. We are now making these Hoists in two sizes—Six Horse Power and Ten Horse Power—but expect to gradually add to these sizes as the demand increases.

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It is often difficult for an advertiser to realize what he is actually paying for, because he cannot project his imagination into the thousands of homes and offices and see his advertisement doing its work. The advertiser does not pay for ink and paper. These are merely mechanical essentials. He pays for the effect upon people's minds, and that is as intangible as air, but as permanent as a towering structure of steel and concrete.

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Under this heading Canadian Railway and Marine World will place advertisements for Positions Wanted, Positions Vacant, Equipment for Sale, Tenders Wanted, Dividend, Annual Meetings, Legal Notices, etc.

**ADVERTISING RATES.**

Rates for advertisements set in uniform style in six point under

Positions Wanted and Positions Vacant, 3c. per word.
Equipment for Sale advertisements, 4c. per word.
Allow five words where replies are to be sent to a box number. Minimum order—$1.

Rates under other headings and for display advertisements on application.

## FOR SALE

Locomotive, Standard type, 4 wheeler, considered in first class condition, weight 50 tons, tender 15 tons. Price, $3,500.00, Limoilou Shops, Quebec. Reply V. T. Bartram, Railway Contractor, Bank of Toronto Bldg., Toronto.

**NOTICE.**

"Please take notice that the undersigned attorneys for the patentee are prepared to supply at a reasonable price any demand for anti-creeping devices for railway tracks as described in Canadian Patent 186389, granted Sept. 3rd, 1918, to D. M. Patrick. They are also prepared to receive offers for the purchase of the patent or for licenses to operate under the same. Ridout & Maybee, Kent Bldg., Toronto, Canada."

THE CURTISS-WILLIS CO., Inc.
No. 30 Church St., New York
*Largest Dealers in*
USED AND NEW TANKS
*Send for our new tank list. MOST COMPLETE EVER ISSUED.*

**THE VICTORIA ROLLING STOCK & REALTY CO., OF ONTARIO, LIMITED**

Notice is hereby given that a dividend of four per cent. on the paid-up capital stock of the Company for the half-year ended Nov. 30, 1920, has been declared payable Dec. 1st, 1920, to the shareholders on record as of 30th of Nov., 1920.

G. T. CHISHOLM, Secretary.

Toronto, Nov. 22nd, 1920.

**NOTICE.**

The General Railway Signal Company of the United States of America, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signalling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents to the fact that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to The General Railway Signal Company of Canada, Limited, Lachine, Province of Quebec, Canada.

**CANADIAN PACIFIC RAILWAY CO.**

**DIVIDEND NOTICE.**

At a meeting of the Board of Directors held today a dividend of two and one-half per cent. on the Common Stock for the quarter ended 30th September last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, was declared payable on 31st December next, to Shareholders of record at 3 p.m. on 1st December next.

By order of the Board,
ERNEST ALEXANDER,
Secretary.

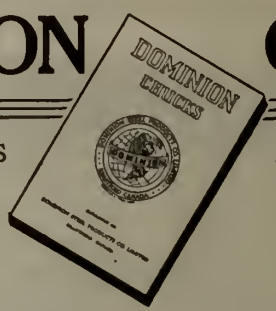
Montreal, 8th November, 1920.

## Positions Wanted

**Railway Accountant.**—Age 35. Twenty years experience. Past five years, General Auditor, 600 mile road. Railway work not essential. Box 4866 Railway and Marine World.

*Send for this Book*

DOMINION CHUCKS




DOMINION CHUCKS ARE GUARANTEED

*Steel or Cast Iron Body* — *Built for Heavy Duty*

You Want Dependable Chucks

INCREASED cost of production demands that every tool give satisfactory and continuous service and be free from the annoyance of frequent breakage. **Dominion Chucks** were perfected by us for our own use and to fill a specific need for a chuck that would stand up and give a satisfactory service under the strain of heavy and continuous work.

Chuck troubles in our own plant compelled us to design and manufacture for our own use the **Dominion Chuck.** It has proved satisfactory under the test of heavy duty service and the most exacting work. We are manufacturing this chuck either in all-steel or iron bodies—sizes 10 to 24 inches. *Write for our Chuck Book.*

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*Engineers • Manufacturers*
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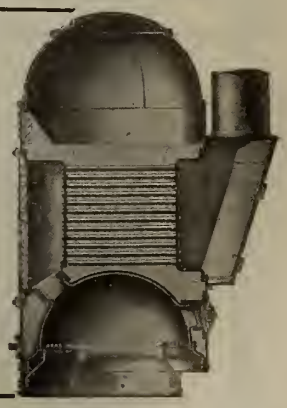
November list of Old Country Marine Engines, Boilers and Tugs for sale. Particulars on application.



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Washout Water at 120°. Refill Water at 200°.

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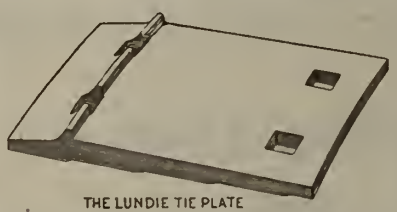
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"It is by far the most scientifically designed and practically efficient tie plate ever evolved."

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Live them again in The Canadian Wilds
The glories of the chase, the tang of the clear pure atmosphere: the thrill of the "Out of Door" is calling you!
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It is imperative that every freight car be kept in service today.

The most economical method of keeping wooden underframe cars in service is to apply Economy Cast Steel Draft Arms.

They will keep your old cars in revenue producing service at a minimum cost.

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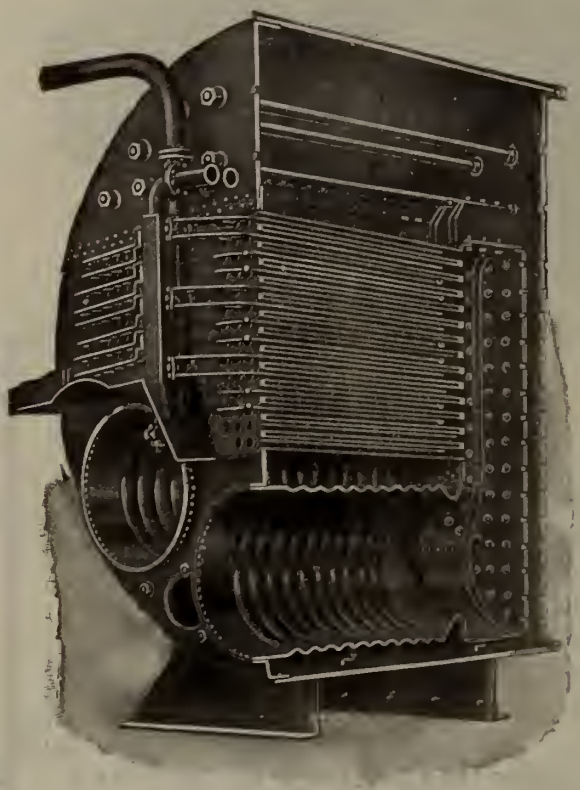
# WASTING COAL COSTING $22.00 A TON



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## Saving $3.30 a Ton

A whole ship load of coal sold in Boston recently for $22.00 a ton.

You may not be paying as much for your coal or as proportionately high for fuel oil—perhaps you pay more.

Whatever you pay, you waste fuel when your ships operate on saturated steam and waste is inexcusable when a practical means to save it is available.

When ships operating on saturated steam are converted into the economical class by the application of Elesco Fire Tube Superheaters, a saving of upwards of 15% in fuel is realized. With coal at $22.00 a ton, this represents a saving of $3.30 a ton, or $3,300 on a 1,000 ton bunker capacity.

Fire Tube Superheaters may be installed while the ship is in port taking cargo.

More cargo space is available on ships equipped with Fire Tube Superheaters, because less **bunker space is required.** Less fuel in bunkers cause less weight of fuel to be carried.

Our Bulletins explain the advantages of high degree superheat — advantages which have been considered worth while in over 2,000 ships.

**THE SUPERHEATER COMPANY, Limited**

**Transportation Building, Montreal**

**WORKS AT SHERBROOKE, QUEBEC**

*Designing Engineers and Manufacturers of Elesco Steam Superheaters and Pipe Coils for all purposes.*

# ELESCO FIRE TUBE SUPERHEATERS

MADE IN CANADA

Whiting Turntable Tractor in service at Pere Marquette R.R. Shops, Saginaw, Mich.

# A Tractor of Superior Design

The Whiting Turntable Tractor is designed and built for heavy duty.

Motor is mounted on top of the frame, which keeps it dry even in a poorly drained pit.

A band brake, of the same type as used on our electric travelling cranes, is placed directly on the armature shaft of the motor, enabling operator to control travel of the table positively when "spotting" the rails.

All machinery is located under the cab and inclosed on all sides by a sheet steel housing equipped with sliding doors. A trap door in the cab floor gives ready access for inspection and repair. Sandbox may be cleaned and filled from the inside, and sand agitator is also operated from inside of the cab.

Made for turntables of any capacity and pit rail radius, A.C. or D.C.

*Specifications on request*

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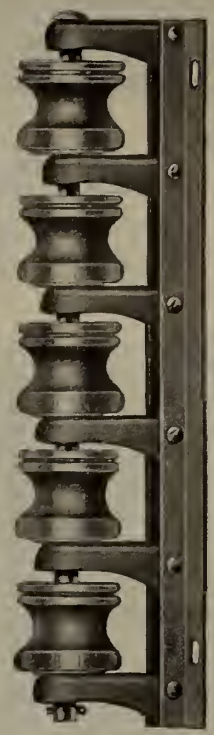

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Don't wait for the switching locomotive or a gang of men.

This CAR PULLER requires only ONE MAN.

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**5000 lbs. at 20 feet a minute**

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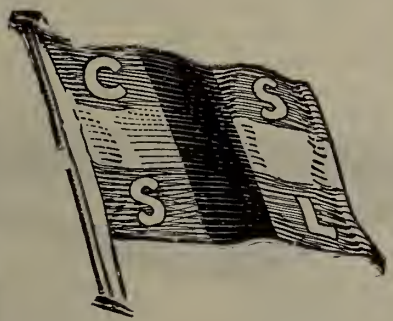


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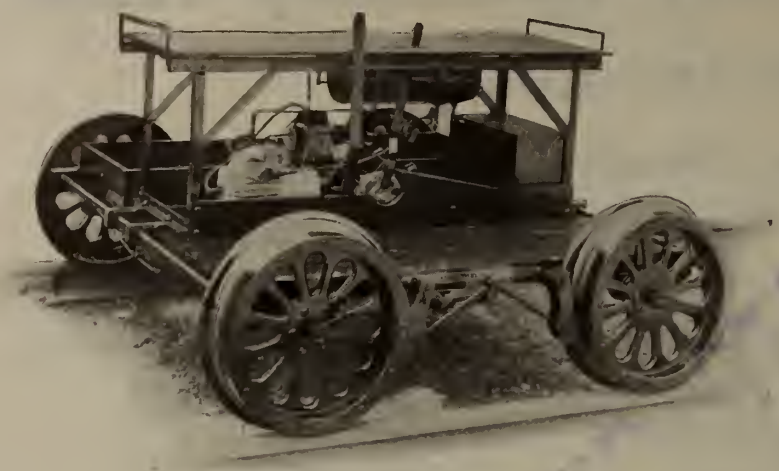
# Kalamazoo Motor Cars



Kalamazoo No. 16 Motor Car

A light sturdy car, particularly adapted for use of Roadmasters, Signalmen and Inspectors. Has through running axles, with four wheels of equal diameter and motor and seat in center of track. Equipped with magneto ignition and free engine clutch with step starting device, features which are very desirable for easy starting of motor.

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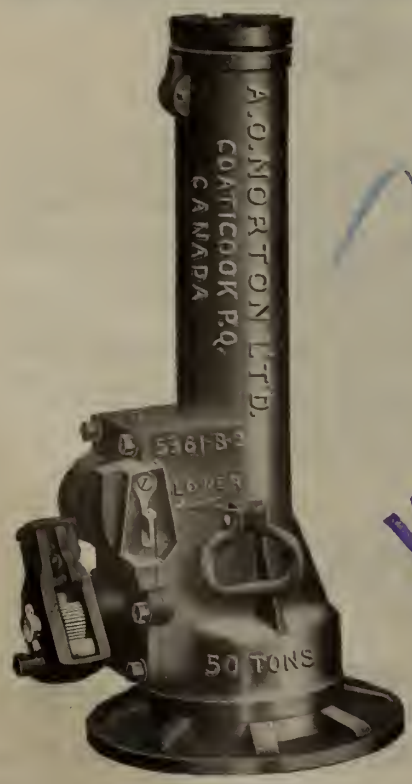


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Send for latest Catalogue.

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NEW BRASS FOUNDRY

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Canadian Adventurer, launched at Port Arthur, by H.R.H. Prince of Wales, Sept. 8, 1919.

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EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

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Complete Equipment for Electric or Gas Lighting of Railway Passenger Cars

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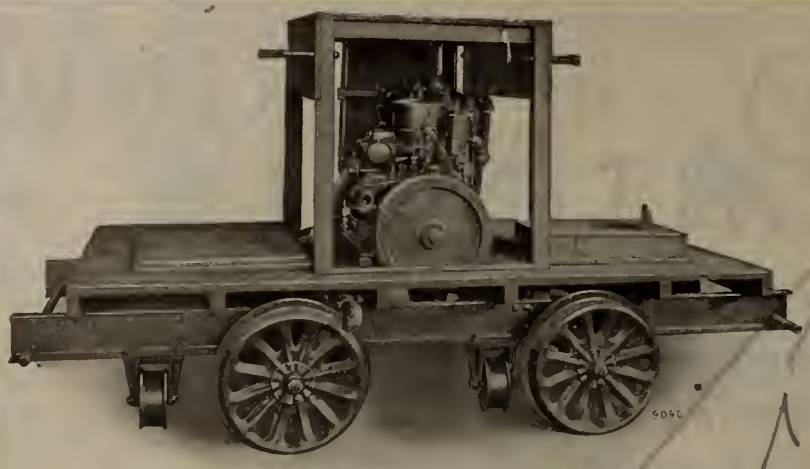

View of an "IMPERIAL" Gasoline Engine Driven Compressor Car for operating two "IMPERIAL" Tampers. View shows Housing Doors dropped.

These cars are made in two sizes, 12 and 20 horse power, for operating two or four tie tampers. Each car is self propelled and fitted with cross trucks for quickly moving the car on to or off the track.

# An Imperial Compressor Car

—will carry your section gang to and from their work and give you air to tamp ties, break out frozen coal or frozen dirt in cattle cars, run air hoists, pumps, rock drills, pneumatic riveters, chippers, drills, woodborers, grinders, sand blasts, paint sprays, etc.

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Why? First—Durability. Second—Fast color. Third—Rich appearance. Fourth—Sanitary.

How long does it last? According to quality, eight to twenty-five years.

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Recently there was exhibited a seat covering in excellent condition after a constant service of twenty-four years. It was upholstered with CHASE Goat Brand Plush.

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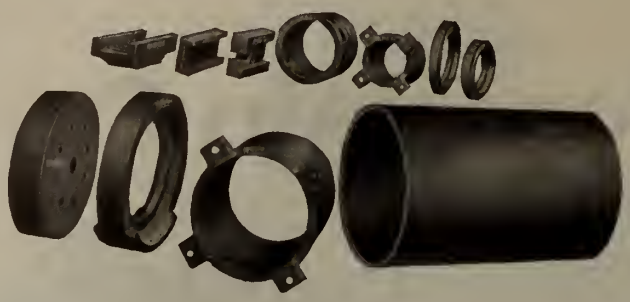

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*Effects Big Savings*

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"We figured that after the installation had been in three or four months it had more than saved its entire cost."

So writes a prominent user of Bowser Oil Storage. Their equipment has been in use thirteen years with no operating troubles or upkeep cost.

If you are not using Bowser Storage Systems for your oils you are losing money every day.

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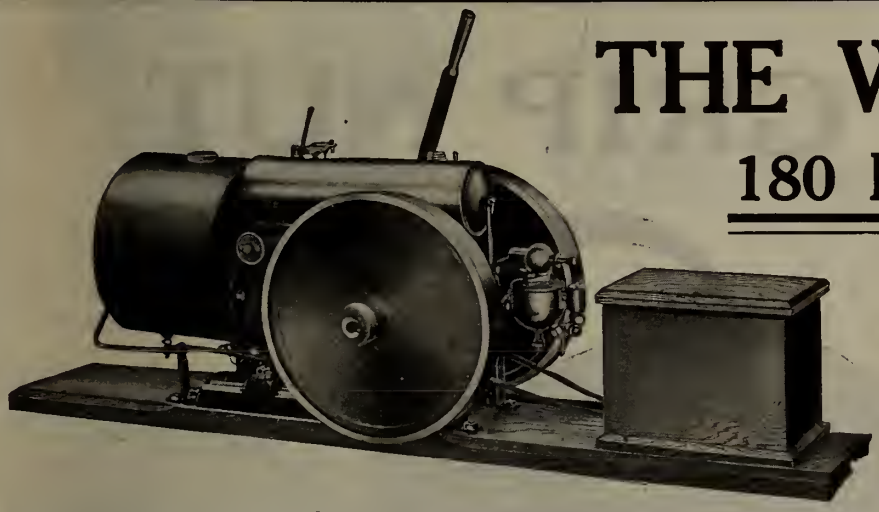

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## 180 Lbs. 5 H.P.

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**SIX EXCLUSIVE POINTS OF SUPERIORITY**

No one feature ever made a successful engine regardless of the excellence of that one. Scientific design in combination with our various patented features places the Woolery in the lead as a mechanically superior engine. New enough to be highly improved—old enough to be thoroughly tested.

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- WELDED STEEL WATER JACKET—FROST PROOF
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YOU WANT light weight, high power, low gas consumption, durability, easy operation, dependability, A-1 service 365 days in the year and you get them all when you get a Woolery. Write for details.

*5 and 10 H. P. Reversible Railway Engines.* *Guaranteed Four Years.*

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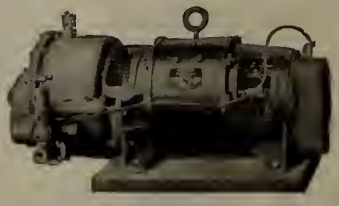
## 7½ Kilowatt Turbine-Generator For Light and Power

Westinghouse Turbine-Generator Units in sizes of 5, 7½, 10 and 15 kw. have met with great success in many services.

They have been successfully used for a long time for illuminating purposes in marine work, for small industrial plants, in mines, etc. Steam shovels can give 24-hour operation with their field of work lighted by Westinghouse Generator Unit, and a current of 250 volts is also obtainable for electro-magnet operation in and about mills and railroad yards.

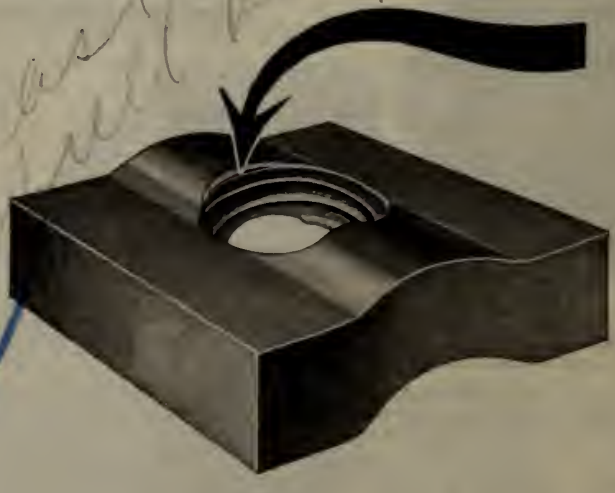


The 7½ kw. unit particularly, is adaptable for all-around service, because it is light, compact and self-contained. It uses no internal lubrication and the simplicity of its construction is an effective safeguard against any unusual need for attention.

# Westinghouse



# THE GRIP NUT



The deflected thread

## Canada Grip Nut Company, Limited

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Plant: St. Johns, Que. Winnipeg

The Luxeberry Painter Says:

"The 'SAFETY FIRST' slogan should not only teach us to watch and guard against physical danger, but against the smaller foes that threaten our social life. I always think of this when buying varnish, because an inferior or misfit varnish might cause as much loss as a misplaced switch. Berry Brothers' brands are my 'SAFETY FIRST' refuge, their use is riskless."

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Worlds Largest Makers
Varnishes and Paint Specialties
Walkerville, Ont.

# Butterfield Superiority

in Quality Finish and Service is built into each and every tool

Angular, Concave, Convex, Form CUTTERS, End Mills, Worm Hobs, Generating Hobs, Hollow Mills.

Gear, Plain Milling, Side Milling, Step Stocking CUTTERS, Metal, Slitting and Screw Slotting Saws, Slitting Discs.

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STEEL HIGHWAY BRIDGES
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STEEL STRUCTURES OF
EVERY DESCRIPTION

YOUR INQUIRIES WILL RECEIVE PROMPT ATTENTION

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Chilled Tread Cast Iron Car Wheels for All Services
Cast Iron Water, Gas and Culvert Pipe,
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These Reinforced Brake Shoes weighed approximately twenty pounds each when put in service. When ready for the scrap heap, after long and satisfactory use, they weighed about six pounds each.

Just compare this record with that of ordinary unreinforced brake shoes. Almost invariably they go to pieces before being half worn out, and their average scrap weight is about fifteen pounds.

No argument for ordinary shoes can meet the demonstrated facts that stand behind Reinforced Brake Shoes.

**Dominion Brake Shoe Company, Limited**

The HOLDEN CO., Limited, Agents,
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## With the use of carbon accessories a great saving of time and money can be effected

—by holding the molten metal to the welding area with carbon plates, a cracked locomotive cylinder was welded without the usual costly removal of the cylinder from the frame.

There are many places where the use of carbon plates, rods, or paste may be extended with profit.

The services of our Engineering Department are always available in the solution of your welding problem.

*We invite correspondence.*

Highly refractory
Low co-efficient of expansion due to heat
Mechanically strong
In many shapes and sizes

CANADIAN NATIONAL CARBON COMPANY, LIMITED
Hillcrest Park, Toronto

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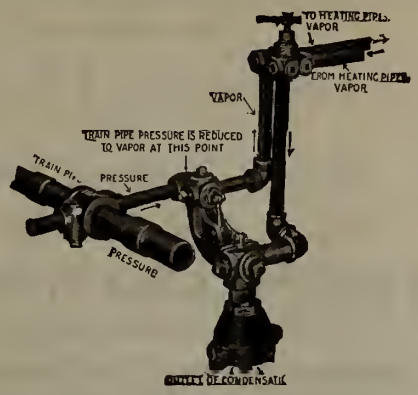


THE VAPOR SYSTEM OF CAR HEATING

61 DALHOUSIE STREET - MONTREAL, QUEBEC

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# Thomas Rail Anchor Tie Plate

Chicago Malleable Castings Co., West Pullman, Chicago, Ill.

THE TWO WAY—
THE TIGHT WAY
THE RIGHT WAY—

Rail Seat inclined and pedestaled
Hook on inside flange of Rail

MADE IN CANADA

*Canadian Representative*

The General Supply Co. of Canada, Limited

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AUTOMATIC SAFETY SWITCH STANDS

*Guard Rail Clamps*
*Double Shoulder Solid Bottom*
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SWITCHES
FROGS AND CROSSINGS
MANGANESE TRACK WORK A SPECIALTY

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Type "K-2" 500 watt 32 volt Turbo-Generator

*Manufacturers of*

Locomotive Headlights

and

Steam Turbo-Generators

of all descriptions

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Micrometers B. & S.

"Vulcan" Pipe Vises and Pipe Wrenches

In addition to the tools shown, our line includes Set Screws, Cap Screws, Machine Screws, High Speed and Carbon Drills, Files (extra large stock) and a complete line of machinists' tools (Starrett, Brown & Sharpe, etc.)

We also carry a heavy stock of Bar Iron, Sheet Iron, (black and galvanized), Machine Steel, Cast Steel, High Speed Steel, Cold Rolled Steel, etc.

Pleased to quote prices and time of delivery.

"Red Hot" Torches.

**RICE LEWIS & SON, Limited**
Established 1847. 19 Victoria Street.
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**Money Saving and Efficient**
**The HOLD TITE NUT LOCK**
**STATEMENT**

Showing comparative cost using a Standard Nutlock now on the market and the HOLD TITE NUT LOCK as applied to the car body of a standard 40 top box car.

STATEMENT was prepared from the specifications of the body of a standard box car which include the truck.

**Summary**

| | |
|---|---|
| Total Cost using a Standard Nutlock on one Box Car Body | $3.36 |
| Total Cost using the HOLD TITE NUT LOCK on one Box Car Body | 1.51 |
| Difference in Cost (per car) in favor using the HOLD TITE NUT LOCK | $1.85 |

**WHAT MORE? NOTE THE SIMPLICITY**—No double nuts or Cotter are necessary. This expense can be saved. Put on the Lock Washer and forget it. The nut will remain in place. No thought need be given to the shape of the Nut or to the thread of the bolt. Fit the right sized washer over the same size bolt,—that's all.

If the bolt stretches take up the nut and tap the washer against it,—it is as secure as ever.

Why not save this Cost by always using the HOLD TITE NUT LOCK?

The cheapest device used; absolutely effective. Write for samples of the different sizes. They will be cheerfully furnished free. It will not obligate you in any way.

**Edward A. Robinson Co., Ltd.** 228 Craig St. West Montreal

**THE HOLD TITE NUT LOCK makes a bolt as secure as a rivet.—TEST THEM OUT FOR PROOF**

**PAXTON-MITCHELL LTD.**
Piston Rod and Valve Stem Packing for Super Heat and Saturated Steam.
"Packing that Packs." Manufactured in Canada.

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Pneumatic Tools. Tools that are guaranteed.
Ask for trials or tests and satisfy yourself.

**THE "IMP" DROP-FORGED RIVET SET**
Made in Canada from steel made in Canada.
Conduct Break-down test; satisfy yourself.

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Once tried always used. Convince yourself—ask for trial. Apply and operate wherever Jacks can be used. Note results.

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All that its name implies. Good materials are only determined by results obtained in service. Ask about it. This is a Packing that overcomes the necessity for carrying many styles and sizes. "INTERNATIONAL" PLASTIC METALLIC conforms to all sizes and shapes of stuffing boxes.

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**POWER PLANT SPECIALTIES**
Pipe Coverings for all classes of service.
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**FOR AIR BRAKES ON LOCOMOTIVES AND CARS**
Automatic Slack Take-up.
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**NEW YORK CITY**
**10 Factories—Branches in 64 Large Cities.**
For Canada, Canadian Johns-Manville Co., Ltd., Toronto.

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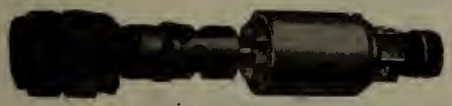

Lagonda Arch Tube Cleaner

Lagonda Cleaner Removing Scale from Arch Tubes.

# Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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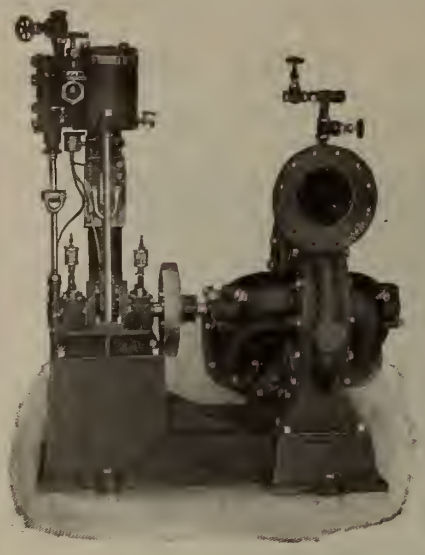
Traders Bank Building



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**Vertical and Horizontal Steam and Power**

Our lines are the result of years of careful perfecting of design, and we are using only the best labor and material available.

**Every Pump Carefully Tested Before Being Shipped.**

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Makers of Base-Supported and 100% Rail Joints for Standard, Girder and Special Rail Sections. Also Joints for Frogs and Switches, Insulated Rail Joints and Step or Compromise Joints.

*PROTECTED BY PATENTS* *Grand Prize, San Francisco, 1915*

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The engineering skill and practical experience from which Orton & Steinbrenner Buckets are built, covers a range of conditions second to none.

The material you wish to handle is best moved with Orange Peel or Clam Shell Buckets.

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and open the door for greater efficiency, more profits for your road, and greater advancement for yourself.

You cannot hope to keep an efficient and contented crew if you are using the old time "Armstrong" Pump Car. Nor can you hope to keep a crew of good men and expect them to push a motor car seven to fourteen miles per day. That is past forever. The sooner you equip your car with a dependable motor—a four cycle, free running, water cooled, reversible engine—the sooner your labor troubles will be at an end.

The Road Boss fills every need—moves your men quickly from place to place—conserves their strength and energy—enables them to carry bigger loads of supplies—makes fewer trips back—saves their time and makes them like the job.

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Not merely a piece of machined iron, or steel. When you buy "VAN DORN" gearing you get MAXIMUM GEAR SERVICE

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LATERAL MOTION TRUCK DEVICE
ROLLER SIDE BEARINGS—PASSENGER, FREIGHT, LOCOMOTIVES
70-TON DOUBLE ACTION TRUCK, LATERAL AND RADIAL MOTION
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*Quality* *Service*

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Eighty-five railroads and car builders use nearly 200 Nichols' Electric Transfer Tables.

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"Dominion"

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All insulations. All kinds of service.

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Flush or Dry

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That's the real test of the PRODUCTION capacity of your equipment and your men.

Two men per car throughout the day means that your output per operative is going to be too costly for these days.

One man per car for all the base schedules and three men for two-car trains means that your output per man can be raised at least 50%.

PROVIDED that the cars are PNEUMATIZED to permit greater production with no manual effort and to INCREASE the schedule speed.

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What is the effect on the morale of track labor in working to get to their work, or relaxing in pleasurable enjoyment while getting there?

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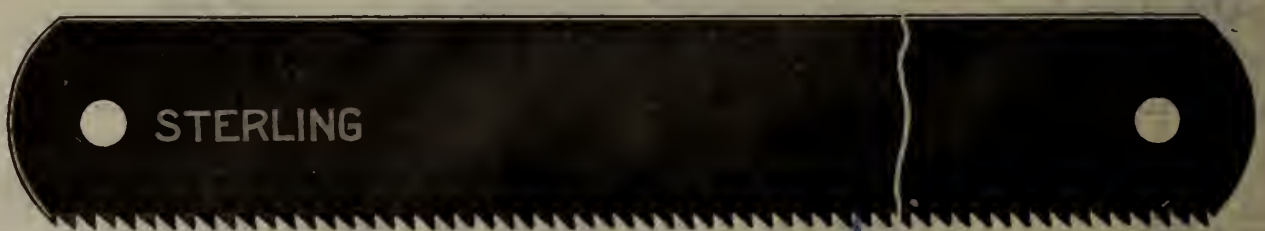


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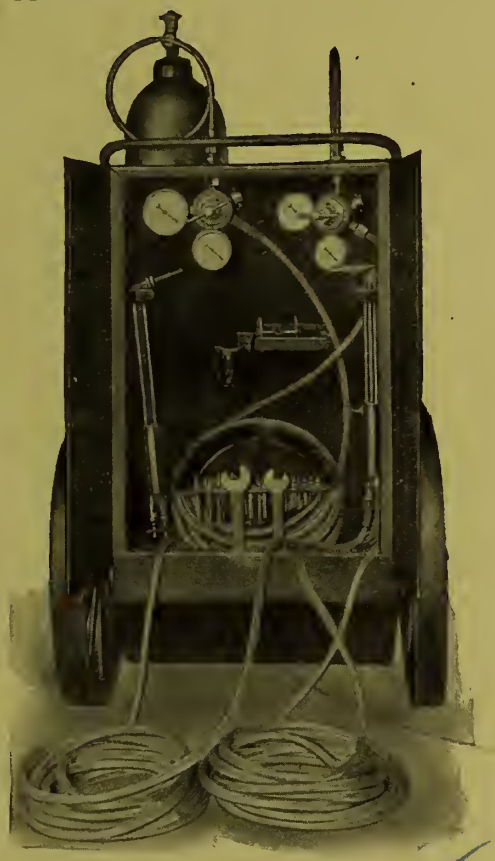

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